The role of parenting style and family characteristics of levels of organization and control in the development of self-regulation skills in young children.

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THE ROLE OF PARENTING STYLE AND FAMILY CHARACTERISTICS OF LEVELS OF ORGANIZATION AND CONTROL IN THE DEVELOPMENT OF SELF-REGULATION SKILLS IN YOUNG CHILDREN

A Dissertation Presented

by

MARY ANNE MORRIS

Submitted to the Graduate School of the University of Massachusetts Amherst in partial fulfillment of the requirements for the degree of

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-Child and Family Studies Program School of Education
THE ROLE OF PARENTING STYLE AND FAMILY CHARACTERISTICS OF LEVELS OF ORGANIZATION AND CONTROL IN THE DEVELOPMENT OF SELF-REGULATION SKILLS IN YOUNG CHILDREN

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School of Education
DEDICATION

My loving and supportive husband and children.
My mother and father, who never fail to tell me how proud they are of me.
ACKNOWLEDGMENTS

I would like to thank my chair, Kevin Nugent and my committee members, Ernest Washington and Susan Sturgeon for their guidance and suggestions throughout this endeavor. I would like to specifically thank Chris Hakala, my statistician, who provided not only excellent statistical expertise but ongoing encouragement and emotional support when I needed it most.

I wish to thank all the teachers who took their time to help me with the research.

Finally, I wish to thank my family and my friends for their faith in me. I couldn’t have done it without you.
This study examines the role of parenting style and the family characteristics of organization and control in the home as they relate to self-regulation skills in children ages 5-7. A theoretical model of the relationship between the independent variables of parenting style, levels of organization and control in home and the demographics of race, gender and SES with the dependent variable of self-regulation was constructed. A clinical group of 32 children, who scored poorly on measures of self-regulation, and a comparison group of 33 children, selected at random, were formed from the initial sample of 318 children within a local urban school district. The primary caretaker for each child was interviewed via telephone using the Parental Authority Questionnaire to measure parenting style and the Family Environment Scale to measure levels of
organization and control in the home. Demographic information was also obtained. Data was analyzed through $t$-tests, correlational and multiple regression analysis. Results indicated positive correlations between authoritative parenting style and level of organization in the home and level of organization and level of control in the home. Negative correlations were reflected between authoritative and authoritarian parenting styles, authoritarian and permissive parenting styles and permissive parenting style and level of organization. Negative correlations were also found between permissive parenting style and level of control and race and level of control. Results of the multiple regression analysis indicated that authoritative parenting style was a predictor of self-regulation skills in young children, accounting for 27.6% of the variance of the independent model while the overall model revealed two predictors, authoritative and permissive parenting style, of self-regulation skills in young children, accounting for 35.1% of the variance of this dependent variable. Implications of this study for parents, schools and researchers are discussed.
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CHAPTE R I
SELF-REGULATION ISSUES WITH YOUNG CHILDREN

Statement of the Problem

Prevalence trends of mental disorders in children and adolescents are not as well documented as those of adults, however, there is a general consensus in the field that the diagnosis of mental health disorders in children is on the rise (NIMH, 2001). A recent Report of the Surgeon General on Mental Health (2001) indicates that at least 20 percent of children are estimated to have mental health disorders with at least mild functional impairment while the National Institute of Mental Health (2001) estimates that 1 in 10 children and adolescents in the United States are diagnosed with a mental illness severe enough to cause some level of impairment. According to statistics from the National Institute of Mental Health (2001), the most common mental disorder in children is attention deficit hyperactivity disorder with 4.1% of youths ages 9 to 17 diagnosed with this disorder. The International Narcotics Control Board (1995) reported that 10 to 12 percent of all boys between the ages of 6 and 14 in the United States have been diagnosed as having ADHD and are being treated with Ritalin.

Studies examining the prevalence of mental health disorders in preschool children estimate that roughly 10-15% of the population has mild to moderate problems. Prevalence rates for “true” disorders in this population are unreliable, however, due to the lack of developmentally appropriate diagnostic criteria as well as high overlap between symptoms that define a particular disorder and age appropriate manifestations of transient stress (Campbell, 1995). Nevertheless, a recent study now indicates the emergence of a new and disturbing trend in preschool mental health diagnosis. Examining the use of
medication in preschoolers, this study indicates that the use of certain psychotropic drugs, like antidepressants and stimulants, in the 2 to 4 year old population has doubled or even tripled between 1991 and 1995 in what appears to be an effort to control toddler behavior (Zito et al., 2000). The most common diagnosis in this preschool population is attention deficit hyperactivity disorder (Zito et al., 2000).

Researchers lack consensus as to the reasons for suggested increases in numbers of children diagnosed with attentional and behavioral disorders. Some researchers argue that the actual occurrence of attentional and behavioral problems in children has not increased though higher numbers of those with a diagnosis may reflect greater public awareness, resulting in more frequent and earlier detection of the disorder (Barkley, DuPaul & McMurray, 1990; Barkley, 1998). Others believe that more sophisticated and successful life-saving efforts in the medical profession, specifically, in neonatal intensive care units, increase the incidence of children with attentional and behavioral disorders by saving babies who would have otherwise died or been more severely developmentally handicapped (Harsough, C. S, & Lanber, N. M., 1985). Some have even suggested that the rise in the numbers of children diagnosed with attentional disorders and prescribed medication is a result of a conspiracy between the pharmaceutical companies and parental support groups, specifically, CHADD (Children and Adults with Attention Deficit Disorder) (Breggin, 1998). Most recently, the rise in numbers of younger children diagnosed with emotional and behavioral disorders has raised serious questions about how medical and clinical professionals are making diagnoses as well as concerns regarding the prescribing of powerful drugs that have not been fully evaluated for safety or efficacy in young children (Zito et al, 2000). Rather than conducting thorough
evaluations of a child’s life both in and out of the home, experts worry that some doctors are making “quick fix” diagnoses based on symptom checklists (Kalb, 2000).

Attention deficit hyperactivity disorder (ADHD), the most common mental health diagnosis among children, preschoolers through adolescence, is itself a controversial diagnosis, particularly in younger children. By definition, attention deficit hyperactivity disorder is a deficit in behavioral inhibition resulting in deficits in executive functioning and self-regulation (Barkley, 1998; Frick & Lahey, 1991). Common symptoms necessary for the diagnosis of ADHD include restlessness, inattentiveness and behavioral impulsivity (APA, 1994). Given the diagnostic criteria, it becomes extremely difficult, if not impossible, to diagnose ADHD in young children with any degree of confidence as such behaviors are not distinguishable from other behavioral disorders, temperamental and/or developmental variation or behavioral responses to serious psychosocial or environmental stressors such as divorce, neglect or poor child care (Campbell, 1997).

The issue of self-regulation, most generally defined as the ability to gain control of one’s emotions, behavior and attention (Shapiro, 2000), is central to the diagnosis of attentional or behavioral disorders in children. During the preschool years, children are increasingly expected to be able to regulate their emotions and behaviors appropriately. They are expected to be able to “delay, defer and accept substitutions without becoming aggressive or disorganized by frustration and ... cope well with high arousal, whether due to environmental challenge or fatigue” (Sroufe, 1995). The inability to meet such expectations describes the criteria for diagnosis of such childhood mental health disorders as attention deficit hyperactivity disorder and oppositional defiant disorder as well as childhood manifestations of various adult mood and anxiety disorders (APA, 1994).
Children identified as lacking in adequate self-control are often those diagnosed with behavior problems (Eisenberg & Fabes, 1992; Eisenberg, et. al, 1997) while those children who demonstrate adequate attentional and behavioral control at ages 4 or 6 are usually those identified as exhibiting appropriate behavior and social competence in school at age 8 (Eisenberg et. al, 1997).

Thus, it becomes extremely important that researchers understand the nature of self-regulation, how it develops and how caregivers can best support its healthy development. While genetic tendencies such as temperament are thought to influence the development of self-regulation, the environment—particularly the social environment—exerts powerful shaping influences (Bronson, 2000). Although the child is active in developing his or her own self-regulatory capacities, he or she does not and cannot do this in isolation. The development of self-regulation has been show to be so strongly linked to the social environment that it has been described as a gradual shift from “other control” (dyadic regulation) to self-control (Schaffer, 1996; Sroufe, 1988, 1995).

The rise in the number of preschool children diagnosed with attentional and behavioral disorders characterized by deficits in self-regulation leads to questions regarding the contextual or process variables within the social environment which may be contributing to this phenomenon. Given that the predominant social environment for young children is the family system, I propose to investigate to what extent self-regulation skills are influenced by parenting style and the family environmental characteristics of levels of organization and control reported in the home. The roles of gender, race and socioeconomic status (SES) will also be examined in the study of self-regulation skills.
This purpose can best be illustrated by the building of a hypothetical self-regulation model and applying it to a group of children, ages 5 through 7 (Figure 1).

![Diagram of self-regulation model](image)

**Demographics**
- Race
- SES
- Gender

**Dependent Variable**
- Self-Regulation Skills:
  1. Attention
  2. Behavior
  3. Emotion

**Independent Variables**
- Parenting Style:
  1. Authoritative
  2. Authoritarian
  3. Permissive
- Family Characteristics:
  1. Level of Organization
  2. Level of Control

**Figure 1.** Hypothetical model of the predictive relationship between demographics, parenting style and family characteristics and self-regulation skills in young children.

**Statement of Purposes and Rationale**

The following section details the purposes and rationale for the proposed study. At the end of this section, specific research questions to be addressed by this study will be presented. From these questions, specific hypotheses will be developed for testing.

**Purposes**

The purposes of this correlational study are three-fold: (1) to identify specific parenting styles as they relate to young children’s self-regulation skills as they are measured by the teachers; (2) to identify specific family characteristics and aspects of the home environment as they relate to young children’s self-regulation skills as measured by their teachers and (3) to identify any relationship between teacher-
measured self-regulation skills in young children with race, gender and socioeconomic status. Towards these ends, a model (See Figure 1) portraying the predictive relationship among selected demographic, parenting style and family environment variables and teacher-measured self-regulation skills of young children will be applied to a sample population of preschool and kindergarten children. The resulting variance in outcomes will then be compared to the hypothetical model. Modifications or changes in the model will result from utilization of a multiple regression analysis of the data obtained by standardized teacher and parental interviews and observations.

Rationale

The rationale for constructing this prediction model comes from major themes in the literature regarding the development of self-regulation skills in young children, the contextual variables associated with the development of self-regulation skills in young children and the emphasis on early identification and intervention in the prevention of academic failure. Major theoretical perspectives on self-regulation skills in young children stress the role of experience and interaction with the environment in the development of age appropriate skills (A. Freud, 1936; Mischel & Patterson, 1979; Mischel, Shoda, & Rodriguez; Bandura, 1977, 1997; Siegler, 1984; Sroufe, 1988; Sternberg, 1984). Despite such a wealth of information in the research on the hypothetical sources of self-regulation and causes of its' development, there is a lack of current data examining the role of parenting style as it directly relates to effective self-regulation in young children. Furthermore, recent information regarding the dramatic increase of young children medicated for attentional and behavioral disorders emphasizes the importance of examining the environmental and family variables when making such
diagnoses and suggests that recent practices have neglected these aspects of the child's life. (Zito et al., 2000). Studies on the behavioral problems of preschool children have indicated that children showing more problems during this period come from more dysfunctional families or families coping with more adverse circumstances (Barron & Earls, 1984; Campbell, 1994). A review of studies on the persistence of behavior problems (Campbell, 1994) indicates that the onset of preschool behavior problems is often associated with a pattern of emerging family difficulties, whereas the amelioration of behavior problems is often associated with improvements in the quality of family relationships. Furthermore, persistent behavior problems are frequently associated with ongoing problems in the family. Lastly, studies (Masten & Coatswork, 1998; Daly, Lentz, & Boyer, 1996) on the development of competence and resilience in children, in the context of academic achievement, have suggested that self-regulation is the key component of resilience, which is crucial to successfully overcoming academic adversity. Self-regulation, defined as the ability to gain control of one’s emotions, behavior and attention (Shapiro, 2000), allows the child to gain the tools to learn and teach oneself and leads to the development of mechanisms of generalization of skills and adaptation to the environment (Daly, Lentz, & Boyer, 1996). In response to concerns regarding the achievement of academic competence, Kratochwill and Stoiber (2000) have called for research agendas on family and individual-level psychological and social factors involved in children’s response to schooling in order to develop effective interventions that target both the patterns underlying potential problems and the symptoms associated with the manifestation of the problems. From this problem statement, six specific research
questions are proposed that will be addressed individually in the study. The following sections list these questions for study.

Research Questions

The six specific research questions to be addressed in this study are:

(1) Does parenting style play a significant role in the development of self-regulation skills in young children?

(2) Does family environment play a significant role in the development of self-regulation skills in young children?

(3) Which parenting style (s) are more likely to predict better-developed self-regulation skills in young children?

(4) Which family environment characteristics are more likely to be associated with better-developed self-regulation skills in young children?

(5) Can one model of parenting/family environment result in better-developed self-regulation skills in young children?

(6) To what extent are the differences in self-regulation the result of gender, race or socioeconomic status?

Hypotheses

Baumrind’s (1967, 1978, 1971) model of three distinct prototypes of parenting style-permissive, authoritarian and authoritative- will be used as the basis of defining parenting style for the purposes of this study and will be discussed in greater detail in Chapter 2. Using Baumrind’s model and the family characteristics of level of
organization and control in the home environment, the following three primary research hypotheses have been developed for this study:

(1): Parenting style (authoritative = auth1, authoritarian = auth2, permissive= perm.) will be a statistically significant predictor of self-regulation skills in young children.

H1a: $\beta_{selfreg, auth1} \neq 0$

H1b: $\beta_{selfreg, auth2} \neq 0$

H1c: $\beta_{selfreg, perm} \neq 0$

H (2): The family characteristics of level of control and level of organization reported in the home will be statistically significant predictors of self-regulation skills in young children.

H2a: $\beta_{selfreg, levcon} \neq 0$

H2b: $\beta_{selfreg, levorg} \neq 0$

H(3): Race, gender and socioeconomic status (SES) of the child will be statistically significant predictors of overall teacher-measured self-regulation skills in young children.

H3a: $\beta_{selfreg, gen} \neq 0$

H3b: $\beta_{selfreg, race} \neq 0$

H3c: $\beta_{selfreg, SES} \neq 0$

The following chapter will provide a detailed literature review of the definitions and theoretical perspectives of the construct of self-regulation. A review of research on
parenting style and the family environmental characteristics of level of control and organization will also be provided and examined within the context of the development of self-regulation skills as well as the relationship of gender, race and socioeconomic status to the development of self-regulation skills. Finally, a brief statement on the conclusions of this literature review will be presented.
CHAPTER II
LITERATURE REVIEW

The literature review is divided into three primary sections; (1) a discussion of the dependent variable, self-regulation, (2) a discussion of the independent variables of parenting style and family organization and control and (3) a discussion of the demographic variables of gender, race and socioeconomic status in relation to the development of self-regulation skills. A hypothetical model has been developed illustrating the relationship between the demographic and independent variables and the development of self-regulation skills in young children and was presented in Chapter 1.

In the following subsection, an examination of the various definitions of self-regulation as well as a discussion of major theoretical perspectives are presented. Included in this subsection will be a review of the developmental path of self-regulation skills and a brief discussion on various risk factors associated with the lack of adaptive self-regulation skills. This subsection will conclude with a discussion of the relationship between motivation and self-regulation and the various methods of measurement of self-regulation.

Definitions of Self-Regulation

As stated earlier in this paper, one generally accepted definition of self-regulation (Cicchetti & Tucker, 1994; Pennington & Ozonoff, 1996; Shapiro, 2000) is the ability to gain control of one’s emotions, behavior and attention. Another common definition of self-regulation is that of a young child’s ability to be responsive to family and social demands and to gradually assume responsibility for their own behaviors with respect to these demands (Kopp, 1982). Within the context of this definition, self-regulation is seen
as a more advanced form of self-control in the child’s progression towards compliance with family and social norms (Kopp, 1982). Nevertheless, given the theoretical perspective, definitions of self-regulation may vary and different terms may be used to refer to it (e.g., impulsive control, self-control, behavioral inhibition, self-management). Some definitions of self-regulation focus primarily on external behaviors such as the ability to comply with adult requests or the ability to adapt one’s behavior to particular situations. Other definitions of self-regulation may focus more on the control of cognitive systems, such as the ability to control attention, the ability to demonstrate effective thinking and problem solving behavior or the ability to engage in independent activities. Throughout the literature, the construct of self-regulation across theoretical perspectives typically encompasses control of emotions and behaviors as well as control of cognitive processing and the ability to engage in prosocial behavior at an age appropriate level (Bronson, 2000). For the purposes of this study, the definition of self-regulation as the ability to gain control over one’s emotions, behavior and attention (Cicchetti & Tucker, 1994; Pennington & Ozonoff, 1996; Shapiro, 2000) will be used as it offers the advantage of observable, measurable behavior within the least exclusive context.

Developmental Path of Self-Regulation

In addition to various definitions and dimensions of self-regulation, the characteristics of self-regulation also vary with age and development. Age appropriate behavior looks very different at ages 2, 5 or 10 years old. Kopp (1982), in her summary of previous research on the topic, has suggested a developmental progression in the growth of self-regulation—from early “control and system organization”, including the control of arousal and sensory-motor modulation that begins during the late prenatal
period and the first 3 months of life, to the development of ‘‘compliance’’ during the 9- to 12-month period, to the emergence of ‘‘impulse control’’ in the second year with increasingly sophisticated forms of self-regulation development from 3 years and older.

Kopp (1982) suggests that true self-control does not emerge until the preschool years when the child becomes capable of complying with other’s requests and behaving appropriately in the absence of external monitoring. This becomes possible as children this age become cognitively capable of representative thought and understanding their own identity and the identity of caregivers over time (Kopp, 1982; Piaget, 1977). During the preschool and kindergarten years, children are increasingly capable of internal self-regulation using rules, strategies and plans and are expected to be able to regulate their emotions and behavior appropriately (Kopp, 1982). Sroufe (1995) states that children this age are expected to be able to “delay, defer, and accept substitutions without becoming aggressive or disorganized by frustration, challenge or fatigue”. The emergence of language plays a critical role in the development of self-regulation during the preschool and kindergarten years as children begin to use speech as a tool to mediate their actions and thoughts (Berk, 1992; Vygotsky, 1962; White, 1965). Bronowski (1977) suggests that language helps the child refer backward in time and project into the future, allowing for more learning from past experiences and planning for the future. Language assists in emotional regulation by permitting a separation between the emotional and factual content of a message as well as in facilitating internal thought, reflection and planning. Vygotsky (1962) suggested that self-speech during the preschool years was critical for the development of self-regulation and that children use self-speech to consciously understand situations, focus on problems, and overcome difficulties.
While adults are still central to the lives of preschool and kindergarten children, peers become increasingly important in the motivation towards regulating emotion and controlling behavior (Eisenberg & Fabres, 1992). Success in establishing relationships with peers is a central issue in development during this age period as they learn how to regulate emotions, control behavior and develop reciprocity and negotiation skills necessary for social success (Eisenberg & Fabres, 1992).

As children make the transition to school, self-regulation begins to reflect increased autonomy outside of the family setting towards more achievement-related behaviors, including academic and social competence (Grolnick & Ryan, 1989). There is a notable increase in self-regulation skills during the 5-to-7 year age range (Berkowitz, 1982) as well as shifts in mental functioning. White (1965) proposed the classic 5-7 shift, illustrating and interpreting the changes in the character of children’s learning during this period. Through studies of his own and a review of the research, White (1965) proposed a range of behavioral changes during the 5-7 year old period and suggested that this period was critical in the building of a “cognitive” layer of understanding which is laid down after an earlier associative level of mental processing. With regard to the development of self-regulation skills during the 5-7 year old period, White (1965) noted a shift toward the emergence and increased use of planning skills and a transition from social reinforcement (praise and attention) to more abstract reinforcement (correctness). Piaget (1977) identifies the period between 5-7 years old as the beginning of the process of transition from preoperational thought to concrete thought. By age 7, Piaget (Piaget, 1977; Wadsworth, 1984) suggest that children are moving towards more representative problem solving and are beginning to develop true social behavior, moving away from
egocentrism in thought and language and beginning to develop intentionality in moral reasoning. During this period, children are expected to become more responsible and more consciously aware of themselves, their actions and their thoughts (Donaldson, 1978). The ability to make this transition is attributed to expanded cognitive abilities (Kopp, 1982), the continued development of self-speech (Vygotsky, 1962) the emergence from “egocentrism” to the increased ability to take the perspective of others (Piaget, 1977) and the improved ability to control attention (Barkley, 1997; Eisenberg et al., 1997).

Theoretical Perspectives on Self-Regulation

The psychoanalytic perspective on the nature of self-regulation is one of the earliest formal psychological theories, which speaks to man’s ability to control his own behavior and consequently control the interactions with the environment. Freud (1961), in his model of the mind, saw the development of self-regulation as extension of emotional needs and drives. According to Freud, it is the “ego” which becomes the mechanism responsible for conscious and adaptive control of behavior. The “ego” controls the “id” which is the repository of man’s basic drives and energy. The “ego is also responsible for controlling and gratifying those drives in a manner consistent with the demands of society, internalized as the “superego”. In essence, Freud saw self-regulation as the struggle to keep the warring forces of the personality under control and to cope with their demands successfully in the real world. Later psychologists in the psychoanalytic tradition continued to emphasize the role of the “ego” in self-regulation (Hartmann, 1958; White, 1963; Erikson, 1963). White (1963) was among the first to examine the role of motivation in the development of self-regulation by speculating on an
inherent and independent "ego" drive which strives for competency while Erikson (1963) suggested a notion of "ego" which provides the individual with a sense of individual identity. Psychoanalytical theory suggests that ego strength is an outgrowth of successful interactions with the environment and that self-regulation is increased with the development of ego strength.

Theories in the behavioral tradition are those most responsible for the more familiar definitions of self-regulation addressing behavioral self-control. From the perspective of the behavioral theory, the development of self-regulation requires children “...to learn to assess the relative value of a variety of rewards, to learn to choose appropriate goals, to give themselves effective instructions or follow instructions provided, to monitor their own activities, and to reward themselves for behaviors that will ultimately be rewarded in the environment or will keep them from being punished (Bronson, 2000). Behavioral theory builds on Pavlov’s (Kendler, 1987) early work on the power of associative learning to the conditioning of automatic responses in humans and animals and continues in the tradition of major works of Thorndike, Hull and Skinner demonstrating the power of the consequences of behavior to shape its direction and frequency (Kendler, 1987). In the behaviorist context, the child’s ability to judge the relative value of rewards and control impulsive behavior is an outgrowth of age and experience (Mischel & Patterson, 1979; Rodriguez, Mischel, & Shoda, 1989). The development of effective self-regulation is dependent on experiences in delayed reinforcement, self-reinforcement for delaying reinforcement, giving self-instructions and giving self-reinforcement for trying and success (Bronson, 2000). In the behaviorist tradition, Barkley (1997), a prolific writer on the topic of attentional disorders, defines
self-regulation as “...any response, or chain of responses, by the individual that alters the probability of their subsequent response to an event and, in so doing, functions to alter the probability of a later consequence related to that event”. Barkley (1997) stresses that self-regulation is self-directed and serves to change a later rather than immediate outcome, thus, emphasizes the development of neuropsychological systems to permit the individual the capacity of a sense of time in which he or she is able to recall past events and use that knowledge towards decisions to shape future events.

The social learning theory perspective grew out of an effort to combine the insights of Freud with the behavioral learning theories of Pavlov and Hull (Batson, 1987). Early social learning theorists assumed that the child’s behavior was internally regulated by drives and habits and externally molded by reward contingencies of the environment (Bateson, 1987). Dollard and Miller (1950) proposed using language as a form of verbal trial and error rather than learning from behavioral trial and error, thus allowing an individual to plan his future behavior. Albert Bandura (1997) proposed that learning occurs through observation and emphasized the role of cognition in observational learning. According to Bandura’s theory, through observation an individual develops “expectancies” about the probable outcomes of specific behaviors leading to a set of “performance standards” for judging the adequacy of certain behaviors in specific contexts (Petty, 1994). The individual then uses these performance standards to regulate his/her own behavior and to evaluate its effectiveness as a basis for self-reward (Petty, 1994). Thus, social learning theorists, guided by Bandura, define self-regulation as the ability to guide behavior based on internalized performance standards and self-reinforcement or punishment according to whether those standards are met satisfactorily.
Lev Vygotsky, a Russian psychologist referred to earlier in this paper, proposed a theory of developmental psychology which emphasized the social and cultural setting of a child in the shaping of behavior and in the facilitation of the capacity for higher level mental functioning. Vygotsky’s theory assumes that the child brings a desire to act effectively and independently and a capacity for higher level mental functioning to his/her encounters with the culture (as experienced in interactions with others), but the goals and the means to reach them are culturally determined and learned (Vygotsky, 1962). Vygotsky saw language as the primary means in which culture is transmitted and the primary vehicle for thought and voluntary self-regulation, thus, while the source of self-regulation was seen as innate curiosity and interest in independence, the means of developing self-regulation was internalized language that guided action and thought, referred to as “private speech” (Vygotsky, 1962; White, 1965).

The work of Jean Piaget followed Vygotsky and shared the same tenets of internalization of environmental interactions in the role of development, however, Piaget placed more importance on the physical world while Vygotsky stressed the social world. Like Vygotsky, Piaget considered the source of self-regulation to be innate resulting from a basic need to explore the environment and a cognitive need for “equilibrium” or mental balance following resolution of a conflict (Bemporad, 1980; Wadsworth, 1984). This conflict arises when incoming information from the environment does not match to existing mental structures or “schemas” and leads to the modification of such structures to accommodate the new information. Increased cognitive understanding of the physical and social environment and the development of logical thinking leads to growth in self-regulation (Bemporad, 1980; Wadsworth, 1984). In essence, the Piagetian perspective
suggests that the development of thinking is automatically regulated by the equilibrium processes as the child interacts with his or her environment while decisions and behavior are regulated by the child’s ever-increasing cognitive capacities (Wadsworth, 1984).

The latter quarter of the twentieth century has seen the birth of the information-processing theory of human development, which utilizes the computer as a model of cognitive functioning. The information-processing perspective borrows from the field of neuropsychology (Lezak, 1982; Siegler, 1989; Denckla & Reader, 1993) the concept of “executive functions” or “executive routines” which describe a mental capacity of individuals to organize, strategize and plan their behavior. Self-regulation, in the neuropsychological perspective, can also refer to an individual’s attentional processes and their “alter ego”, inhibitory control (Denckla & Reader, 1993). These executive functions are considered to be both innate and learned and are responsible for self-regulation (Pennington, 1991). Information processing theorists (Denckla & Reader, 1993; Pennington, 1991) believe that an individual’s ability to regulate his or her behavior is commensurate with age (maturation and brain development) and experience. Accordingly, as a child matures, he or she becomes increasing more efficient and effective in encoding events in their environment, more organized and effective in retrieving such information from memory, more capable on increasingly complex strategies for processing, decision making and problem solving and more able to monitor the success of their own behavior. Thus, self-regulation, according to information processing theorists, is actually a particular set of “executive” skills, which are modified and improved with healthy biological development and experience.
Associated Risk Factors in the Development of Self-Regulation Skills

Poor self-regulation skills, sometimes diagnosed as Attention Deficit Hyperactivity Disorder (ADHD), has been the topic of numerous studies and has been associated with a wide range of risk factors. Although controversial, some studies suggest that the basis of attentional disorders lie in neurological dysfunctions and genetic contributions (Epstein, Conners, Erhardt, March, & Swanson, 1997; Frank, Lazar, & Seiden; Hynd, Hern, Voeller, & Marshall, 1991; Mariani & Barkley, 1997). Generally, these studies suggest that motor-regulatory systems involving both subcortical and frontal systems are associated with ADHD (Hynd, Hern, Voeller, & Marshall, 1991). Studies also suggest a possible genetic basis for ADHD because they implicate deficiencies in several neurotransmitters and because family studies show some concordance between affected parents and their children (Biederman et al., 1995). Studies stating the neurological and genetic basis for ADHD have been criticized, however, for their lack of scientific evidence (Breggin, 1998) and use of correlational studies as means of determining causality (Barkley, 1997).

Pregnancy and birth complications have also been implicated in increased risk for attentional and behavioral problems. Nichols and Chen (1981) found that low birthweight was associated with increased risk of hyperactivity, inattention, disruptive behavior and poor school adjustment while Whittaker and colleagues (1997) found that brain damage from birth injuries also contributed to later symptoms of ADHD.

Exposure to environmental toxins has been shown to be associated with development of symptoms of ADHD. Numerous studies (Biederman et al., 1995, Milberger, Biederman, Faraone, Chen, & Jones, 1996; Streissguth, Bookstein, Sampson,
& Barr, 1995) have shown that prenatal exposure to alcohol and tobacco smoke has some relationship to inattention and hyperactivity. Other studies have suggested that elevated lead levels may have statistically significant relationship to the symptoms of ADHD (Needleman, Schell, Bellinger, Leviton, & Alfred, 1990).

Research has indicated that some psychosocial factors may also play a role in the development of ADHD symptoms. Biederman et al. (1995) conducted studies assessing the impact of exposure to parental conflict and parental psychopathology on the children with and without ADHD. Their results indicated that family environment adversity factors were greater among ADHD children than in control children, with ADHD children exhibiting more exposure to parental conflict, diminished family cohesion, number of parents psychiatrically ill during the child’s lifetime and a greater proportion of the child’s life exposed to maternal psychopathology. Consistent with studies of ADHD children, studies of children manifesting more generic behavior problems in preschool indicate more conflicted family relationships, more endorsements of maternal depression and a family history of psychopathology (Campbell, 1995). Furthermore, children identified as having behavior problems in the preschool period are more likely to be living in single parent or reconstituted families than children without problems (Campbell, 1994). Single parent homes have also been shown to be associated with the persistence of attentional concerns in children from birth to kindergarten (Palfrey, Levine, Walker & Sullivan, 1985).

Studies examining the relationship between social class and ADHD are not consistent in their results. Lambert, Sandoval, & Sassone (1978) found only slight differences in the prevalence of hyperactivity across social classes when parent, teacher
and physician agreed on the diagnosis. However, social class differences in prevalence did arise when only two of these three sources had to agree, with there being generally more ADHD children in lower than higher social classes. Socioeconomic status (SES) has been associated with problem behaviors in preschool children and the persistence of attentional concerns from birth through school entry. Research by Campbell and colleagues (1982) looking at families of preschool children with problem behaviors who were initially not matched on occupational levels and SES indicators, found that problem children are more likely to come from families of low social status. Studies of children with attention problems suggested that more persistent problems are associated with low socioeconomic status (Palfrey et al, 1985). Szatmari, Offord & Boyle (1989) reviewed prevalence rates of ADHD in a large sample of children from Ontario, Canada and found that rate did tend to increase with lower socioeconomic status. The association between persistent attentional concerns and low SES may reflect more deprived environments contributing to other risk factors such as greater domestic turmoil, less adequate health care and more exposure to environmental toxins or may suggest inconsistencies in the diagnostic process.

It has been widely accepted that early temperamental difficulties may be a precursor of later behavior problems (Campbell, 1995). In a large-scale study of temperament and behavior problems in Australia, Sanson, Oberklaid, Pedlow and Prior (1991) reported that maternal ratings of temperamental difficulties and perceptions of the infant as “much more difficult than average” were weakly associated with later maternal ratings of behavior problems. Carey (1982b) found that children who fit the “difficult” child profile, as discussed in the famous Thomas and Chess New York Longitudinal
Study (1977), had a higher likelihood of developing behavior problems in early and middle childhood. Similarities between Thomas and Chess’s description of the “difficult” child and characteristics of ADHD were documented by Carey, McDevitt and Baker (1979) whose study concluded that children diagnosed with neurological dysfunction affecting attention and behavior may be diagnosed instead as having certain temperamental traits characteristic of the “difficult” child. Barkley, DePaul & McMurray (1990) indicated that early emergence of excessive activity level, short durations of responding to objects, low persistence of pursuing objects with which to play, strong intensity of response, and demandingness in infancy are more often found in ADHD than in normal or other clinical control groups of children. Such a profile is consistent with a negative temperament and is thought to refer to early and relatively persistent personality characteristics (Barkley, 1998).

More recent work on temperament suggests that negative temperament alone does not inevitably lead to ADHD. Several studies have shown that while early negative temperament may continue to predict ongoing negative temperament, by itself, it is a relatively weak predictor of later clinically significant levels of psychological or behavior problems in children (Cameron, 1978; Carey & McDevitt, 1989). In fact, there is increasing evidence for the hypothesis that it is often an unfavorable interaction between the child’s temperament and the environment that produces behavioral dysfunction. (Carey, 1998). Campbell (1990) found that the existence of a negative, critical and commanding style of child management by mothers of children with preschool hyperactivity was associated with the persistence of hyperactivity by ages 4, 6 and 9 years. Maziade (1989) completed a longitudinal study on a group of infants and followed
them into the preschool years. His research revealed that the same temperament could result in a range of behavioral and academic outcomes, depending on the fit of the child's temperament with the circumstances and further indicated that even those children with reported extremes in negative temperament characteristics developed behavior problems only when part of a family with dysfunctional relationships. Work by Biederman et al. (1995) and Cameron (1978) found that the prediction of behavior problems in childhood was greatly enhanced by considering parental psychiatric distress, hostility and marital discord in addition to preschool temperament. Finally, recent research on the relationship of parenting style to early childhood temperament (Harris, 1998) showed that parents who exhibited an authoritarian parenting style, characterized by emphasis on behavioral compliance through use of an absolute set of standards, had infants who became less extreme in their energy level as toddlers. Results also found that children whose energy escalated from infancy to toddlerhood and those who became less adaptable over this time period, evidenced more problematic behavior issues at the preschool age level.

Motivation and Self-Regulation

In this broad discussion of self-regulation, the issue of motivation has been directly or indirectly referred to and discussed. While the ability to control behavior is often discussed as a separate topic from the motivation to do so, voluntary self-regulation does not happen without motivation. Throughout the literature, motivation and self-regulation are seen as intertwined in two basic ways (1) people are innately rewarded by competence and control and (2) they need self-regulated control to reach their goals (Bronson, 2000). Motivation for self-regulation appears to be innate and can be described as a generalized tendency to be rewarded by, and then seek mastery or control of, the self,
others, or the physical and conceptual environment (Bronson, 2000). Evidence for intrinsic motivation for self-regulation can be seen as early as the first 3 months of age when infants strive for physical and cognitive mastery as they begin to exhibit control over their own bodies and engage in behavior to influence those around them (Bruner, 1970).

As children continue to develop, they exhibit increased interest and skill in self-control and in choosing and reaching goals in their environment, however, the environment takes on increased importance in the child’s ability to be successful in his or her quest for self-regulation. Studies have suggested that experience and active experimentation allow a child learn more effective goal reaching behaviors, that is, through practice, a child learns to choose realistic goals, to plan effectively, to organize and monitor behavior and thought, to correct mistakes and persist in reaching planned goals (Deloach & Brown, 1987; Scholnick & Friedman, 1987). A child achieves growing independence and assists in expanding self-regulation skills through the provision of opportunities for practicing self-directed actions (Deloach & Brown, 1987; Scholnick & Friedman, 1987). Barkley (1997) reports that continued experiences practicing self-regulation allows the child to become more consciously aware of his or her skills allowing for opportunities to reflect on alternative methods of self-control and self-direction and choosing more effective ones. As the child experiences pleasure in understanding and mastering his or her environment, motivation to have these experiences increases and they become more active in seeking opportunities to exercise and increase their developing skills (Bronson, 2000).
Measures of Self-Regulation

Researchers have measured self-regulation in a multitude of ways (Barkley, 1998; Grolnick & Ryan, 1989; Kuhl & Kraska, 1993). The range of measurement options reflects the varied dimensions of the construct and the ways in which the researchers have chosen to define the construct. Measurement tools for self-regulation focus on observable behaviors including the ability to deploy attention effectively, behavioral inhibition, compliance with situational demands, problem solving skills and general self-control. In this subsection, behavioral observations, standardized testing procedures and informant reports will be examined and evaluated as the three major categories of self-regulation assessment.

Behavioral Observations

Informal or unsystematic behavioral observations of children in clinical or natural settings can be useful for developing impressions of a child’s physical appearance or developmental status but is not recommended for diagnostic purposes, however, systematic, formal behavioral observations in natural settings or in clinic analogue situations can be useful for the diagnosis and assessment of children with self-regulatory deficits (Barkley, 1990). It is generally agreed that the home or school setting provides the best contexts in which to gather information on children (Shaffer, McNamara & Pincus, 1974). Systematic behavioral observations using structured behavioral coding systems can not only provide a wealth of information regarding the frequency, severity and contextual variables of self-regulation deficits but can also be quite useful in monitoring the behavioral changes elicited by various interventions (drug, behavioral or therapeutic) (Conners, 1973). Behavioral observations in natural settings can also
provide opportunities to observe and record parent-child, teacher-child and peer interactions. The use of direct observational procedures—recording behavior in the natural environment or in analogue settings structured to elicit behaviors representative of those occurring in the natural setting—involve objective measures which lower the level of inference in interpreting findings and often use categories or dimensions of behavior that more closely approximate the behaviors of concern (Barkley, 1990). Despite their usefulness, however, direct, systematic behavioral observations are not without limitations. Observations within analogue settings can be prohibitive due to costs of the resources necessary for implementation (e.g., observational mirrors, trained behavioral coders, videotaping equipment) while behaviors in such settings may not be representative of a child’s behavior under more natural circumstances (Barkley, 1990). Observations within a child’s natural environment can also be cost prohibitive but, more importantly, low frequency but highly salient behaviors might be missed during a limited observation period (Schaughency & Rothlind, 1991). Results from three studies using a systematic behavioral observation system as part of a multimethod assessment of children referred for suspected attentional deficits showed that observational results corresponded poorly to teacher and peer ratings of the same children (Schaughency & McCone, 1990; Schaughency, McConne & Covey, 1989; Schaughency, Seeley, Talarico, & Jackson, 1990). The results of these studies found good correspondence between teacher and peer ratings, however, the highest correlations were found between the observer ratings of one behavioral dimension and the observer ratings of another behavioral dimension. Another limitation of observational assessment methods is that many variables of research interest may not be readily translated into easily codable categories (e.g., anxiety, low
self-esteem, self-regulation) or may require extensive training on the part of the practitioner in order to complete the observations (Barkley & Edelbrock, 1987). Furthermore, behavioral observations lack adequate normative data, preventing the determination of statistical deviance of the behavior necessary for rendering a diagnosis (Abikoff, Gittelman-Klein & Klein, 1977; Barkley, 1990; Kuhl & Kraska, 1993). While the establishment of local norms may be one way of counteracting this limitation, the process of establishing norms is prohibitive in time and expense. Finally, systematic behavioral observations can lead to reactivity effects, in which the process of observing itself leads to changes in the subject’s behavior so that observations are not as representative of the subject’s typical behavior in that setting (Abikoff, Gittelman-Klein & Klein, 1977). For the above stated reasons, the use of observational methods in the measurement of self-regulation skills of young children was deemed not suitable for the present study.

Standardized Testing

The search for more objective means of assessing children’s behavior and self-regulatory skills led to the development of standardized instruments which have improved substantially over the past decade with regard to more robust normative data and more detailed psychometrics (Barkley, 1998). Standardized psychological testing is most useful in the diagnostic process, particularly with differential diagnosis or the diagnosis of comorbid conditions, and is most productive when the goals of assessment are clearly established from the beginning (Gall, Borg & Gall, 1996). The various tests used in the assessment of children with suspected self-regulatory deficits tend to fall into
four categories: (1) cognitive/achievement tests, (2) general neuropsychological batteries, (3) individual neuropsychological tests, and (4) projective/personality tests.

Despite improvements in the development and standardization of psychological tests, their use in the assessment of children’s behavioral problems continues to be fraught with limitations. First and foremost is the variability in the psychometric properties of individual tests as the scientific credibility of such tests rests on the integrity of the processes of standardization and reliability (Kuhl & Kraska, 1993). Another limitation of standardized psychological testing is its inability to capture information regarding the antecedents and consequences of a child’s behavior as well as its inability to determine etiology (DuPaul & Ervin, 1996). The use of standardized psychological tests to measure self-regulation, particularly using behavioral observations during the testing to substantiate findings, has not been recommended as such behavior has often been shown to be atypical of the child’s behavior in more natural settings (Barkley, 1990; Conners, 1973; Kuhl & Kraska, 1993). Finally, standardized psychological testing is often extremely time-consuming and complicated and incurs the high costs of materials and training of the practitioner, thus, making it an impractical method of assessment for large groups of children (Barkley, 1990; Kuhl & Kraska, 1993).

Informant Reports

Informant reports encompass a range of procedures within the categories of diagnostic interviews and behavior rating scales. With young children, primary informants of the child’s behavioral profile are most often the parent/caretaker and the teacher. Beginning in the 1970’s, researchers began to look intently at parental perceptions and the resulting interpretations of children’s behavior (Bullock &
Pennington, 1988; Olson, Bates & Bales, 1989). Parental perceptions of their children’s behavior and competence are important because the parents have the primary responsibility for structuring their child’s environment by instructing them in behaviors that are valued in society (Baldwin, 1949; Baumrind, 1991; Bullock & Pennington, 1988). Barkley (1998) states that parental interviews are an important part of a behavioral assessment for several reasons: (1) the parents’/caretakers perceptions of the child’s difficulties can be a good indicator of the parents’/caretakers adherence to treatment recommendation; (2) parental interviews can reveal the degree of distress the child’s problems are presenting to the family, especially to the parent/caretaker being interviewed, as well as the overall psychological integrity of the parent; (3) the parent/caretaker interview can help structure and focus the parent/caretaker’s perceptions of a child’s problems towards more important and controlling events within the family; and (4) the parental/caretaker interview can provide a wealth of information regarding parent-child interactions across settings including compliance with parental requests, child management techniques and types of behaviors the child engages in when noncompliant. Nevertheless, parental interviews are criticized because of their subjective nature as they are susceptible to perceptual biases leading to inaccurate responding (Krathwohl, 1993). However, semi-structured interviews using highly specific questions about symptoms and behavior have been empirically demonstrated to have a high degree of association with particular disorders and can greatly enhance diagnostic reliability (Barkley, 1998).

The usefulness of child interviews is dependent of the age of the child. Bullock and Pennington (1988) assert that young children might not be accurate judges of their
competencies, often blurring the distinctions between their actual abilities and their desire to be competent. Barkley (1998) suggests that children below the ages of 9-12 years are not especially reliable in their reports of their own behavior, however, for adolescents, child interviews may provide valuable information regarding the child’s views of their own competence and aspects of their environment which they perceive as supportive or problematic.

Interviews with teachers have all the same merits as interviews with parents, providing a second ecologically valid source of important information about the child’s psychosocial and behavioral adjustment (Barkley, 1998). Like parental reports, teacher reports are also subject to bias, and the integrity of the information, be it parent or teacher, must always be weighed by judging the validity of the information itself (Krathwohl, 1993).

Child behavior checklists and rating scales have become an essential element in the evaluation and diagnosis of children with behavior problems due to the availability of several scales with excellent reliable and valid normative data, allowing for the determination of statistical deviance of children’s problem behavior (Barkley, 1998). Behavior rating scales are considered to offer advantages over other methods of research in child development and psychopathology (Edelbrock & Rancurello, 1985; Mash & Terdal, 1981; McMahon, 1984) for the following reasons (1) they have the capability of gathering information from informers with many years of experience with the child across diverse settings and circumstances; (2) they permit the collection of data on behaviors that occur extremely infrequently and are likely to be missed by other observational methods; (3) they are inexpensive to administer and require little time to
complete; (4) they have normative data for establishing the statistical deviance of the child’s behavior; (5) they exist in a variety of forms focusing on a diversity of dimensions of child psychopathology; (6) they incorporate the opinions of significant people in the child’s natural environment who are responsible for the care, management and ultimate therapeutic treatment the child will receive; (7) they filter out situational variation, thereby focusing on the most stable and enduring characteristics of the child; and (8) they permit quantitative distinctions to be made concerning qualitative aspects of child behavior that are often difficult to obtain through direct observational methods. Nevertheless, behavior rating scales are limited in that they are simply quantified opinions and can be subject to the same biases as anyone’s opinions of another (Barkley, 1990). Furthermore, rating scales fail to assess certain antecedent and consequent events surrounding a child’s behavior that may be of substantial importance to determining why the problem behavior occurs, when and where it occurs and how to manage it effectively (DuPaul & Ervin, 1996).

The use of behavior rating scales across settings with more than one informant (e.g., parent and teacher) is recommended for a more valid assessment of children’s behavior (Barkley, 1990; Stolberg, Camplair, Currier & Wells, 1987). Disagreements between parent and teacher ratings are common with correlations between these sources rarely exceeding .50 in most research studies (Barkley, 1990). Gresham and Reschly (1987) attributed these low correlations between assessor perspectives to the influence of setting factors such as the environment in which the child is being assessed. It is suggested that one should not expect high correlations between parent and teacher or child reports because the demands, expectations, and behaviors vary considerably.
between these environments as well as the differences in background and training of the different informants in child behavior and development (Barkley, 1990; Gresham & Reschly, 1987). Barkley (1990) maintains that such disagreements between parent and teacher reports often provide clinically valuable information about the child’s actual situational variation in behavior or about the informant’s perspective relative to how others view the child. In an effort to assess the value of informant reports in practice, Loeber, Green & Lahey (1991) conducted a study of mental health professionals’ perceptions of the utility of children, mothers and teachers as informants of child psychopathology. With regard to attentional deficits, results indicated that children are seen as the least useful informants while teachers were judged as superior to mothers as informants.

Having considered the strengths and limitations of each method of measurement and the importance of considering assessor perspective and its inherent limitations when selecting a measure of children’s self-regulation, the Child Behavior Checklist (CBCL)-Teacher’s Report Form (Achenbach, 1991), an informant report, will be used as a measurement of perceived self-regulation. This conclusion was based in part on Achenbach’s (1991) reasons for the importance of teacher reports on children’s adaptive functioning and problems and are as follows; (1) school is a central developmental arena in which problems arise that may not be evident elsewhere; (2) school based social and academic skills are important for successful adaptive development in our society; (3) teachers are often the second most important adults in children’s lives, ranking only behind parents; (4) by virtue of training, experience, and opportunities for observing children in groups, teachers can report aspects of children’s functioning not evident to
parents; and (5) teachers’ reports are not apt to be affected by family dynamics, although they are affected by the interpersonal dynamics of the school setting. Another reason for the CBCL-Teacher’s Report Form as the measurement choice is that it offers a “broad band” approach to assessment of children’s behavior (Barkley, 1998). In the review of definitions, the concept of self-regulation is often associated with such observable behavior as compliance with adult and situational demands, attentional control, impulse control and social competence. The Achenbach CBCL-Teacher’s Report Form (1991) provides coverage of the major dimensions of childhood psychopathology such as depression, anxiety, withdrawal, delinquent conduct and, most importantly, for the purposes of this study, aggressive/oppositional behavior, inattentive/impulsive and hyperactive behavior and social functioning. Finally, the CBCL-Teacher’s Form is most time efficient, taking approximately 10-20 minutes (Achenbach, 1991) and reports strong reliability and validity (see Method section for complete review).

Parenting Style

The above review on the research on self-regulation suggests that self-regulation skills develop as a result of an interrelation between many factors. Physical maturation and sensory-motor development are linked to the growth of control over emotional, social and cognitive activities and motivation appears to influence the direction of development in all these areas. The role of the caregiver in the support and nurturing of self-regulation is critical for effective development, especially at the early childhood stage when children are unable to separate their feelings, thoughts and actions (Bronson, 2000). Numerous studies have stressed the importance of the caregiver’s role in supporting autonomy and competence by organizing the environment, providing stimulating and nurturing
experiences and reinforcing a child’s efforts towards independence and mastery attempts (White, 1972; Nucci, Killen & Smetana, 1996). Kopp (1982) has indicated that the kind of caregiver nurturing and guidance provided plays an important role in supporting efforts towards self-regulation, the development of impulse control, and the awareness of goals, particularly within the first 3 years of life. Kopp (1982) suggests that in order to achieve competence in self-regulation, effective parenting involves being sensitive to the child, providing organization and routines in the child’s life, and offering specific control strategies required in specific situations. Baumrind (1967, 1970) notes that authoritative, rather than permissive or authoritarian, control supports the child’s internalization of social guidelines and that a balance of warmth and firm guidance that is appropriate to the child’s age and understanding supports inner control and leads to both independence and sociability. Crockenberg, Jackson and Langrock (1996) showed that a collaborative approach to parenting, which considers the goals of all parties concerned, supports the development of inner control while coercive control undermines it. Dumas and LaFreniere (1993) noted that interactions between socially competent preschool children and their mothers are marked by coherence, reciprocity, and contingency of the mothers’ responses to their children’s behavior.

Research shows that children benefit from a perceived sense of choice and control over their actions, thus, motivation is hindered when a child experiences high levels of adult direction and control (Deci, 1980; Hauser-Cram, 1998). The results of Diana Baumrind’s (1967, 1970) studies on parental patterns are consistent with these findings as they indicated that children of authoritarian parents showed relatively little independence and lacked spontaneity, curiosity and originality. The expectation that control is
impossible or that failure to learn is possible reduces future attempts to influence or learn to control similar situations (Bronson, 2000). The perception of responsibility (control) and the ability to choose are critical for the arousal of mastery motivation in younger children and achievement motivation in older children and adults (Bronson, 2000).

Mastery motivation in young children has been defined as a “psychological force that stimulates an individual to attempt independently in a focused and persistent manner, to solve a problem or master a skill or task which is at least moderately challenging for him or her” (Morgan, Harmon, & Maslin-Cole, 1990, p. 319). Thus, given this definition, mastery motivation is the cornerstone of self-regulation.

Numerous studies have looked at various aspects of childrearing and child outcome. Observational studies have indicated that child compliance and internalization of control are associated with more authoritative parenting, that is, parental behavior characterized by a combination of high warmth, firm but fair control and the use of explanations and reasoning (Baumrind, 1967; Maccoby & Martin, 1983; Crockenberg & Litman, 1990; Kuczynski, Radke-Yarrow, Kochanska & Girnius-Brown, 1987) while maternal behavior that is arbitrary, inconsistent, negative or uninvolved is associated with noncompliance, defiance and low internalization of control (Kuczynski et al., 1987; Webster-Stratton, 1990). Masten & Coatsworth (1998), in their longitudinal study of competent children who have experienced severe adversity, indicates that authoritative parenting, characterized by warmth, structure and high expectations, is a significant factor in preventing antisocial problems while children who are antisocial often have a history of harsh, punitive, rejecting and inconsistent parenting. Schaffer’s (1996)’s work on the development of social competence in children showed that sensitive and consistent
caregiving and warm but firm parenting styles were associated with the development of self-control and compliance to social rules, while, power-assertive methods of controlling child behavior (especially with a hostile affect) generally was associated with less compliance and less internalization of standards in children. Power and Chapieski’s (1986) study on the parental correlates of impulsivity in toddlers noted that mothers who consistently relied upon physical punishment tended to have children who were noncompliant and showed less impulse control than children of nonpunitive mothers. In a longitudinal study relating child outcome to parenting style, Baumrind (1991) looked at children when they were 4, 10 and 15 years old and found that parents who did not adequately meet young children’s dual needs for nurturance and limits, that is, parents who were restrictive but unresponsive and who were relatively uninvolved or disengaged from their children, were less likely to have successful and healthy adolescents.

That parenting affects children causally is intuitively clear from research, however, research identifying unique parent effects on children and child-rearing interactions has emerged with the study of Campbell, March, Pierce, Ewing & Szumowski (1991) who were able to demonstrate a predictive relationship between negative maternal control and lack of engagement with later noncompliance and aggression in a longitudinal study of preschool children.

Other studies have suggested that parenting behavior may be a response to children exhibiting difficult behaviors. The most recent evidence for this theory can be found in the negative parent-child interactions, which have been documented in studies of children with attentional disorders. In several studies (Danforth, Barkley, & Stokes, 1991; Barkley, 1989; Taylor, Sandberg, Thorley, & Giles, 1991), mothers of ADHD children
were noted to be less responsive to their children’s questions, more negative and directive and more critical of their behavior, particularly with sons. These negative parent-child interactions appear to be at their most negative and stressful when children are at the preschool age (Cohen, Sullivan, Minde, Novak, & Keens, 1983). The studies on the relationship between parenting style and attention deficit hyperactivity disorder focus on mother-child interactions with regard to the effect of stimulant medications. In general, these studies (Barkley & Cunningham, 1979; Humphries, Kinsborne, & Swanson, 1978; Goodman and Stevenson, 1989; Musten, 1996) indicate that, following treatment of the child with medication, parenting style appears to become more positive, characterized by reduction in the use of maternal criticism, commands and directions. Given such findings, these studies go on to suggest that much of the disturbance in the interaction between the parent and child with ADHD stem from the effect of the child’s behavior on the parent. Criticism of these studies address the placebo effect of stimulant medications on children’s behavior noting several studies showing mothers’ reports of dramatic improvements in their children’s behavior following the administration of a placebo (Breggin, 1998; Schleifer et al., 1975; Stableford, Butz, Hasazi, Leitenberg & Peyser, 1976).

While parenting style is thought to reflect parental practices regarding the dimensions of nurturance and control (Baumrind,1971;Grolnick & Ryan, 1989) and has been shown to remain stable over time (Baumrind, 1991; Campbell, 1997; Shumow, Vandell & Posner, 1998), specific parental practices regarding disciplinary behaviors and levels of supervision have been shown to change over the course of child development. For example, Paikoff and Brooks-Gunn (1991) reviewed a number of studies showing
that parents' involvement with their children, as well as their level of supervision and monitoring of their children decreases as children approach adolescence. Similarly, Wauchope and Straus (1990) found that parental use of corporal punishment is greatest for very young children and tends to decrease as children get older. A study by Dix, Ruble and Zambarano (1989) looked at the differences in parenting practices in several studies of mothers of children 4-12 years of age. Their results suggested that parenting/disciplinary practices were influenced by attributions of competence and intention in the child and that how parents processed and interpreted those levels of competence and intention in the child was influenced by more permanent parenting attitudes or beliefs of child rearing. Thus, parents who ascribed to authoritarian child-rearing ideology inferred higher levels of knowledge, capacity and responsibility on their children, irregardless of age, than did nonauthoritarian parents and reported that they would be more upset with the child, that they would respond with greater sternness and that they would give longer time-outs.

Overall, current literature shows a consistent relationship between parenting behavior and child behavior, although the direction of causality is not always clear. Some researchers, such as Barkley and his colleagues, ascribe to a primarily genetic basis for human behavior and propose that parental behavior is a response to behavior of the children. Others, such as Carey (1998), present convincing evidence to support the hypothesis that many behavioral differences in children are related to temperamental characteristics that can be recognized early in a child's life and that behavior problems arise from a lack of fit between a particular type of child temperament and the child-rearing pattern adopted by the parents. Still others, such as Campbell (1990) see
parenting style, as only one of many factors that interact to put a child at risk for a negative outcome. An extreme view of child outcome was proposed by Harris (1998) in her Group Socialization Theory, whereby she suggests that parents simply react to their child’s behavior and that behavior is more strongly influenced by other forces than parenting, primarily the peer groups. Most studies on child development suggest, however, that parental style characterized by high warmth, high involvement, clear and consistent limit setting and reasoning and explanations is the optimal style to support the development of moral values, internal controls and prosocial behavior in children (Kochanska, 1991; Maccoby & Martin, 1983). Given the current social context of dramatic increases in the diagnosis of children with behavioral disorders characterized by deficits in social competence and self-regulation skills, it is important to revisit the relationship between parenting style and child behavior.

Historical Perspectives on Parenting Style

Much of the work on parenting styles was derived from the social mold perspective of parent-child interactions, or the unidirectional approach, which assumes that children are passive entities whose behavior is shaped by the adult caregiver and the environment that surrounds them (Stafford & Bayer, 1993). This conceptualization reflects John Locke’s view of children as blank slates, upon which experience is written (Baumrind, 1978). Specifically, the social mold theory suggests that there is a linear cause and effect relationship between the parents’ actions and the child’s behavior and that the children accommodate the parents when necessary (Stafford & Bayer, 1993). The majority of the early work on parenting paid particular attention to maternal characteristics and the influence those characteristics exerted in determining child
outcome (Becker, 1964; Schaefer, 1959). Through interviews with mothers, observations of parent-child interactions, and factor analysis of survey responses, Schaefer (1959) developed a model of maternal behavior, which comprised the two dimensions of autonomy-control and love-hostility. The autonomy-control dimension consisted of parents allowing children to be independent by simultaneously controlling their activities while expressing affection towards children. Behaviors associated with the love-hostility dimension ranged from nurturing and child-centered to hostile and withdrawn. From these two dimensions, Schaefer (1959) developed a four-quadrant model of parental behavior, which was used to explain the relationship between parental behavior and child outcome. The first quadrant, autonomy-love, consisted of parental behaviors that were nurturing yet encouraged children’s independence. The second quadrant, control-love, reflected parental behavior that continued to be positive and nurturing but simultaneously controlling. Quadrant three, autonomy-hostility, indicated parental behavior which was negative, rejecting and neglecting while quadrant four, control-hostility, reflected parental behavior which used coercion and antagonistic behaviors to discipline children. Becker’s work (1964) built on Schaefer’s (1959) of maternal behavior and proposed the parental dimensions of warmth (acceptance) versus hostility (rejection) and restrictive versus permissive. Becker’s parental variables accounted for a good deal of the variance in parental activities and resulted in his fourfold typology of parenting (See Figure 2), summarizing the results of his own work as well as the work of his colleagues.
<table>
<thead>
<tr>
<th></th>
<th>Restrictiveness</th>
<th>Permissiveness</th>
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<tbody>
<tr>
<td>Warmth</td>
<td>Submissive, dependent, polite, neat, obedient (Levy)</td>
<td>Active, socially outgoing, creative, successfully aggressive (Baldwin)</td>
</tr>
<tr>
<td></td>
<td>Minimal aggression (Sears)</td>
<td>Minimal rule enforcement for boys (Maccoby)</td>
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<tr>
<td></td>
<td>Dependent, not friendly or creative (Watson)</td>
<td>Facilitates adult role taking (Levin)</td>
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<td></td>
<td>Maximal compliance (Meyers)</td>
<td>Independent, friendly, low projective hostility (Watson)</td>
</tr>
<tr>
<td>Hostility</td>
<td>“Neurotic” problems (clinical studies)</td>
<td>Delinquency (Gluecks, Bandura &amp; Walters)</td>
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<td></td>
<td>More quarreling and shyness with peers (Watson)</td>
<td>Noncompliance (Meyers)</td>
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<td></td>
<td>Socially withdrawn (Baldwin)</td>
<td>Maximal aggression (Sears)</td>
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<td>Low in adult role taking (Levin)</td>
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<td></td>
<td>Maximal self-aggression in boys (Sears)</td>
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Figure 2. Becker’s model of parenting dimensions, 1964.

Limitations of Schaefer’s (1959) and Becker’s (1964) models included lack of external validity, and the use of only mother-child dyads in many of the samples (Peterson & Rollins, 1987). Additional limitations were that the studies failed to take into consideration situational factors and assumed that parent-child relationships were stable over time (Peterson & Rollins, 1987).

Schaefer (1959) and Becker’s (1964) work on maternal behavior influenced many social mold theorists who would follow, foremost among them, Diana Baumrind. However, two researchers, Kurt Lewin and Alfred Baldwin, exerted the most direct influence on Baumrind’s social mold theory-driven model of parenting style.

Lewin’s Group Leadership Styles

In a groundbreaking study on the effects of leadership by Lewin, Lippitt, and White (1939), the styles of autocratic, democratic and laissez faire leadership were identified. In this experimental study, groups of 10 and 11-year old boys joined clubs that were run by an autocratic leader, a democratic leader and a laissez-faire leader. Actually,
each club had the same leader who was trained to act out different leadership styles. Results indicated that the highest level of productivity occurred under the authoritarian leader and the highest level of satisfaction was reported under the democratic leader. Democratic group leaders took an active role in developing group decisions but determined that the group members had the final decision. Democratic group leaders’ primary responsibility consisted of giving feedback to the group’s suggestions. Under democratic leadership, members worked better independently, were more involved in their projects and displayed less hostility towards other group members (Maccoby, 1992b).

In contrast, autocratic leaders assigned group tasks, gave feedback without explanation and were more controlling. Members felt in competition for the leader’s attention and praise yet stated privately their displeasure with the leader. Under autocratic leadership, members engaged in negative, rule breaking behavior when left unsupervised, suggesting that the rules set forth by the leader were not internalized (Maccoby, 1992b).

Under the laissez-faire leadership style, the leader was friendly but did not offer suggestions or interact with the group unless asked. The group appeared disorganized and ineffective due to the lack of guidance from their leader (Maccoby, 1992b).

Lewin’s work on leadership styles provided the structure for Baumrind’s parenting style typology, however, Alfred Baldwin’s (1949) work with leadership styles within families provided the context.
Baldwin’s Application of Lewin’s Leadership Styles to Families

In Baldwin’s (1949) work with families at the Fels Institute, he noted that two (authoritarian and democratic) out of three of Lewin’s (authoritarian, democratic and laissez-faire) leadership styles naturally occurring within families. Baldwin’s work (Baldwin, Kalhorn & Breese, 1945; Baldwin, 1949) identified two major parenting dimensions, which they asserted were predictive of child outcome: the democratic/autocratic dimension and the permissive/controlling dimension. The major findings of these studies indicated that children of autocratic or controlling parents were lower in social interaction with peers and tended to be dominated by peers during the interactions that did occur. These children tended to be obedient but seemed to lack spontaneity, affection, curiosity and originality.

Lewin’s (1948) work on leadership styles and Baldwin’s (1948, 1949) work on the application of leadership styles within families illustrate the development of the relationship of the social mold theory to parenting styles. From this early work on families, two primary dimensions of parenting which remained consistent throughout many of the studies (Baldwin, 1948, 1949; Schaefer, 1959; Becker, 1964) were control and support. Bronson (2000) asserts that it continues to be the qualities of support and control on the part of the caregiver that influence the resulting competence of the child in his or her ability to control their emotion and behavior (e.g., self-regulation). Diana Baumrind (1967, 1970, 1971, 1991) took the dimensions of control and support and used them as a foundation in the development of her parenting style typology. Baumrind’s model continues to dominate the research on parenting style and has frequently been
Baumrind’s Parenting Styles

Diana Baumrind (1967, 1971, 1978, 1991) conducted a series of research studies, all of which focused on the study of childrearing practices associated with competence in children. In her initial 1967 study, Baumrind assessed children on dimensions of self-control, approach-avoidance tendencies, subjective mood, self-reliance and peer affiliation. Parents of the children were assessed on the dimensions of parental control, parental maturity demands, parent-child communication and parental nurturance. Parental behavior and parental attitudes were assessed through home visits, structured observations and structured interviews. Findings from this first of Baumrind’s studies can be summarized as follows: parents of the most assertive, self-reliant, and self-controlled children were controlling, demanding, communicative, and loving; parents of the unhappy and disaffiliated group were relatively controlling and detached; parents of the least self-reliant and least self-controlled group of children were noncontrolling, nondemanding, and relatively warm (Baumrind, 1967).

In Baumrind’s second major study in collaboration with Allen Black (1967), 107 children from a local child study center and their families were rated on their behavior. In this study, Baumrind and Black used a two-dimensional eight cluster model to assess preschool behavior and home visits, structured observations and structured interviews to measure parental attitudes and behavior. Results from this study were consistent with Baumrind’s original study (1967), with the exception of mild sex/gender differences, and suggested the following: (1) warmth is not a predictor of child behavior, (2) punitive
parental attitudes were not associated with fearful or compliant behavior, rather, punitiveness was associated with independent and domineering behavior in girls and unlikable behavior in boys, (3) paternal consistent discipline was associated with independence and assertiveness in boys and affiliativeness in girls, (4) Parents’ willingness to offer justification for directives and to listen to the child were associated with competent behavior on the part of the child and (5) restrictiveness and refusal to grant sufficient independence were associated with dependent, passive behavior in boys. Baumrind identified the dimensions of parental control and parental support. She defined parental control measurements of the parents’ ability to give positive or negative reinforcement, enforce directives, develop consistency and handle aversive child behaviors (Baumrind, 1967). Parental support was defined as how well the parent satisfies the child, how well the parent supports the child, and how well the parent uses positive reinforcement with the child (Baumrind, 1967). Conclusions based on the findings of this study were thought to be consistent with the findings from Baumrind’s initial 1967 study (Baumrind & Black, 1967).

In her third and most comprehensive study on patterns of parental behavior, Baumrind sought to replicate or modify the results of her previous two studies and to differentiate further among patterns of parental authority and their effects on the behavior of preschool children (Baumrind, 1971). Over the course of 3-5 months, Baumrind collected data from structured observations, interviews and home visits of 146 nursery school children and their families in the San Francisco area. From this data, Baumrind expanded on her earlier hypotheses of parental behavior and proposed distinct parenting styles: authoritarian, authoritative, and permissive (Baumrind, 1967, 1970, 1971).
Baumrind's most recent study on parenting style was in 1991 and examined the role of parenting style on adolescent substance abuse. In this longitudinal look at children at ages 4, 10 and 15 years old, Baumrind demonstrated that parents who were unresponsive and relatively uninvolved or disengaged from their children over a long period of time were more likely to have children who participated in various forms of substance abuse and were less competent socially.

In reviewing the prolific research on child-rearing styles, Baumrind's description of the authoritarian, authoritative and permissive parent continues to be the predominant model of parental typology in the literature to date (Buri, 1991; Rollins & Thomas, 1979). Nevertheless, all of Baumrind's studies have been criticized for looking at only one child in each family, thus, failing to observe whether parents were using similar parenting techniques with their other children (Harris, 1998). Another weakness of Baumrind's research, according to Harris (1998) is that it does not take into account cultural influences. Because Baumrind studied primarily middle-class Anglo-American families, Harris suggests that an unrepresented sample created false impressions about how parenting styles influence a child's behavior. Given these limitations, we will take a closer look at the individual characteristics of Baumrind's typology of parenting.

**Authoritarian Parenting Style**

According to Baumrind (1967, 1970, 1971) authoritarian parents are those who presented with the following characteristics of interaction with their children:

1. attempted to shape and control the behavior and attitudes of their children in accordance with an absolute set of standards;
2. valued obedience, respect for authority, work, tradition and preservation of order; and
3. discouraged verbal give and take
between the child and the adult (Baumrind, 1967, 1971). The primary objective of the authoritarian parent is behavioral compliance of their children. Baumrind (1970, 1971) also found that authoritarian parents were highly demanding of their children yet unresponsive to their children’s needs, unwilling or unlikely to use reinforcement of any kind and not influenced by a child’s coercive behaviors.

Based on this style of parenting, various child outcomes were noted. Baumrind (1971) showed that preschool children of authoritarian parents demonstrated relatively little independence, and obtained middle-ranged scores on measures of social responsibility, which was defined as the communal component of social behavior. Baumrind discovered that authoritarian mothers tended to rear hostile children who were academic underachievers (Baumrind, 1970; Putallaz & Heflin, 1992). Additionally, school observers noted that these children were disaffiliative, dysphoric and vulnerable to stress (Stafford & Bayer, 1993).

Permissive Parenting Style

Baumrind (1967, 1970, 1971) asserted that parents who interacted with their children in a permissive childrearing style demonstrated the following characteristics: (1) a tolerant, accepting attitude towards a child’s impulses, including sexual and aggressive impulses; (2) use of little punishment and avoidance of assertive authority, controls or restrictions; (3) few demands for mature behavior (e.g., manners or carrying out tasks); (4) allowed children to regulate their own behavior and make their own decisions when at all possible; and (5) had few rules governing the child’s time schedule (e.g., bedtime, mealtime). The basic philosophy of the permissive parent was that children have a natural tendency to self-actualize, thus, children who are left to themselves will learn what they
need to know and behave in a socially appropriate fashion. Parents should not try to inhibit this process by imposing rules or constraints. Children must live freely, make their own decisions and always be loved (Baumrind, 1978).

Baumrind’s work led her to emphasize the price to be paid for failure of parents to exercise control and make maturity demands on their children. Baumrind (1967) found that children whose behavior was immature, in the sense that they lacked impulse control and self-reliance, tended to have permissive parents. In 1971, Baumrind conducted a study of nursery school children and found that children of permissive parents tended to lack both social responsibility and independence. A follow-up study of these children at ages 8-9 found them to be low in both cognitive and social measures. School observers rated children of permissive parents low on self-reliance and self-control and characterized them as immature and regressive when hurt or aimless, although the same children tended to score highly on measures of creativity (Stafford & Bayer, 1993).

**Authoritative Parenting Style**

According to Baumrind (1967, 1978), parents meeting the criteria for the authoritative style of parenting present with the following characteristics of interaction with their children: (1) demonstrates expectations of mature behavior from the child and clear limit setting; (2) demonstrates firm enforcement of rules and standards, using commands and sanctions when necessary; and (3) encourages the child’s independence and individuality. On the control and warmth dimensions, authoritative parents combined a high degree of control and demandingness tempered by a significant degree of warmth. Baumrind characterized the authoritative style as one in which parents offered insights and encouraged argumentative discourse with their children, thus, establishing a sense of
rapport. Baumrind’s studies (1967, 1971) showed that preschool children of authoritative parents were more independent and socially responsible that other groups and at older ages (8-9 years), these children continued to demonstrate high levels of competence in the community and other settings (social and intellectual environments). Observers described children of authoritative parents as content, realistic, self-reliant, and competent (Stafford & Bayer, 1993). Because of the positive child outcomes, Baumrind determined that the authoritative parenting style was the most desirable to attain (Baumrind, 1970, 1978). Other researchers have reached similar conclusions (Acock & Demo, 1994; Goddard & Lee, 1990; Smetana, 1993). To measure parenting styles, Buri (1991) developed the Parental Authority Questionnaire (PAQ). A study by Buri, Louiselle, Misukanis, and Mueller (1988) used the PAQ’s scales (authoritarian, authoritative and permissive) as predictors of college students’ self-esteem. Buri et al. (1988) divided the students into high and low self-esteem groups and found that 84% of the students in the low self-esteem group had been parented by both an authoritarian mother and father while 89% of the students in the high self-esteem group had been parented by both an authoritative mother and father. These results supported Baumrind’s (1967, 1970) earlier conclusions that authoritative parenting is associated with more positive child outcomes.

Family Environment

Research has demonstrated that child outcomes are shaped by a combination of several different factors (Luster & Okagaki, 1993). Many studies on child outcome use a second variable in addition to parenting style to explain some of the variance of an outcome variable (Okagaki & Divecha, 1993; Vondra & Belsky, 1993). The examination
of the home environment provides a broader context from which to view child outcomes (i.e., self-regulation). One of the goals of this study was to measure the impact of certain family environment characteristics on the development of children’s self-regulation abilities.

Ecological Perspectives

Environmental characteristics have been researched and related to indexes of human functioning for many years. Bronfenbrenner’s (1980) ecological perspective of socialization asserts that external factors outside of the child, such as the family, mold the development of the child into an adult. Bronfenbrenner (1980) conceptualized the environment as a series of settings or contexts that interact with the individual to influence development. Four types of interrelated environmental systems were conceptualized; the microsystem, the mesosystem, the exosystem, and the macrosystem (Bronfenbrenner & Mahoney, 1975). The latter three are beyond the scope of this paper, however, the microsystem is directly relevant to the purposes of this study as it indicates the significance of the family in the development of the child. Bronfenbrenner (1980) described microsystems as the immediate environment in which a person functions. In the case of the infant and young child, this is most likely the family unit. The interactions within this system are bi-directional, meaning each person’s behavior influences the others within the system (Bronfenbrenner & Mahoney, 1975). Thus, the ecological perspective assumes that children’s outcomes are the result of a combined influence of factors, many of which are found in the child’s immediate environment.
Moos’ Conceptualization of Family Environment

Rudolph Moos (1973) studied the psychosocial effects of different kinds of environments, such as prisons, psychiatric wards, military bases and, most notably, families, on adaptive functioning. Moos conceptualized environments as consisting of supportive and maintenance structures, specified roles, authority structure, and evaluative feedback. Moos (1973) hypothesized three basic dimensions of environments; the Relationship dimension, the Personal Development dimension and the System Maintenance dimension (for complete reviews of the Relationship and Personal Development dimensions, see Moos, 1973; Moos & Moos, 1986) and applied these dimensions to family functioning. The System Maintenance dimension is most relevant for the purposes of this study and reflects the level of organization and level of control within the family.

Levels of Organization and Levels of Control

Moos (1973) first began looking at levels of organization and levels of control with business/industrial settings, examining staffing, size, ratios, salaries and organizational control structures and their relationship to various employee behaviors and attitudes. From the studies conducted in business/industrial settings, Moos applied these levels of organization and control to families (Moos, 1986), prompting other researchers (Feagans, Merriwether, & Haldane, 1991; Lynch, Fay, Funk & Nagel, 1993) to look more closely at structure and operation within the family unit.

Most of the studies on family control and organization have focused on families with special needs children (Feagans, et al., 1991; Lynch et al., 1993) and used the Family Environment Scale (FES) developed by Moos and Moos (1986). Studies focusing on the
family characteristics of control and organization have also been conducted with adolescent substance abusers (Filstead, McElfresh & Anderson, 1981; Kosten, Novak & Kleber, 1984). Several studies have looked at the relationship between coherence in the environment and development of motivation in self-regulation. Minuchin (1971), in his extensive research with disadvantaged families, indicated that young children who came from highly disorganized and unpredictable home environments are less curious and less apt to explore their environment, thus, allowing for fewer opportunities to practice control over the external social and physical environment through the creation and implementation of strategies aimed at goal achievement. Parental provision of structure has also been shown to play an important role in children’s control perceptions (Grolnick & Ryan, 1989). It has been suggested that home environments which are low in the provision of guidelines for action and consistent follow-through on contingencies make it more difficult for a child to differentiate who or what controls outcomes (Grolnick & Ryan, 1989). Grolnick and Ryan (1989) demonstrated a high correlation between parental provision of structure and children’s understanding of control within the academic domain, thus, suggesting that structure within the home may guard against a sense of helplessness where the path to achieve outcomes is unclear or experienced as out of one’s control. Similarly, Bronson (2000) suggests that an overstimulating or chaotic environment may render a child too confused and overwhelmed to adequately focus and explore whereas a reasonable amount of order, regularity and responsiveness in the environment allows the child to develop a sense that the world is predictable and influencable. Bronson (2000) further suggests that a lack of order and predictability in the environment may undermine the cognitive processes necessary for the understanding of
goals and the internalization of standards of performance needed for the motivation of self-regulation.

Gender, Race, SES and Self-Regulation

Studies of prevalence of behavioral disorders in preschool children indicate that roughly 10-15% of preschool children have mild to moderate problems (Campbell, 1995) with the estimate of children actually diagnosed with ADHD approaching 3-5% of the childhood population (American Psychiatric Association, 1994). Such studies focus on the lack of development of appropriate self-regulation skills and describe patterns of externalizing and internalizing symptoms, which include problems with attention, aggression and noncompliance (Campbell, 1995). The study of gender differences in problem behavior in children has been the topic of several studies. Whereas some studies report that externalizing problems such as tantrums, overactivity, fighting, and disobedience are higher in boys (Luk, Leung, Bacon-Shone & Lich-Mak, 1991; Prior, Smart, Sanson & Oberklaid, 1993), other studies have reported relatively small gender differences (Achenbach, Edelbrock & Howell, 1987; Newth & Corbeu, 1993; Stallard, 1993) in behavior problems in the preschool population. Thus, while studies are inconsistent, literature review suggests that gender differences, with regard to behavioral problems reflecting deficits in development of self-regulation skills, are not significant in preschool children. As children approach school age, research provides more compelling evidence that boys are more likely than girls to exhibit externalizing behavioral and conduct problems such as aggressiveness, defiance and hyperactivity, however, girls are more likely to develop internalized behavioral symptoms of anxiety, depression and withdrawal (Barkley, 1998; Brown, Abramowitz, Dadan-Swain, Eckstrand & Dulcan,
In prevalence studies based on clinic samples in Canada, boys were three times more likely to be diagnosed with Attention Deficit Hyperactivity Disorder, a disorder marked by deficits in self-regulation skills, than girls (Szatmari et al., 1989). Other studies have shown no gender differences on measures of impulsivity, social functioning and attentional skills in school-aged children (Gaub & Carlson, 1997).

From the above studies, gender appears to play a role in the development of behavioral and conduct disorders associated with deficits in self-regulation skills with boys who demonstrate a significantly higher rate of externalizing behavior problems than girls. Studies suggest that gender differences do not emerge until school age although specific ages when these differences become apparent are not clear (Campbell, 1995). Research suggests that while boys develop a significantly higher pattern of externalizing behaviors associated with deficits in self-regulation, girls exhibit other behaviors such as impulsivity, inattentiveness and higher risk for psychiatric disorders, which are also associated with self-regulation deficits. This would lead to speculation that there may be gender differences in how self-regulation deficits are expressed or manifested rather than gender differences in actual occurrence or prevalence of self-regulation deficits.

The role of race in the development of self-regulation has not been the subject of study in the general research. To date, there are no valid studies examining the prevalence rates of behavioral disorders associated with self-regulation as they relate to race. There is evidence to suggest that minority populations, specifically African-Americans, are over-represented in special education programs for behaviorally disordered children (U. S. Department of Education, 1993), however, any conclusions regarding the relationship of these statistics with the lack of development of effective self-regulation
skills are significantly compromised by a range of social, cultural and environment variables which have been shown to have a direct impact on this problem.

The role of socioeconomic status (SES) and self-regulation was discussed in detail earlier in this chapter in the context of associated risk factors for ADHD. A review of the literature in this area suggests that lower socioeconomic status has been associated with higher prevalence rates of ADHD (Campbell, 1982; Szatmari et al, 1989), a disorder of self-regulation, as well as the persistence of attentional concerns from birth through preschool (Palfrey et al., 1985).

Summary

In conclusion, this chapter has provided a thorough examination of the independent, dependent and demographic variables via the literature review. The literature review leads us to the following conclusions: (1) the development of effective self-regulation skills is associated with a range of positive outcomes in later life, (2) the role of the environment, particularly the role of the caretaker, is thought to be important in the development of self-regulation skills and (3) further research is needed to further clarify and support the relationship between the environment and the development of motivation towards effective self-regulation skills.
CHAPTER III

STUDY METHODOLOGY AND DESIGN

Methodology

As previously discussed, this study proposes to determine the predictive relationship between the independent variables of parenting style and the family characteristics of level of organization and level of control found in the home and the dependent variable of teacher measured self-regulation skills in young children. Additional questions will address the roles of gender, race and SES in the development of self-regulation skills in young children as measured by teachers. As a result, this study is considered descriptive and may lead to a model of self-regulation development which can be used in future research.

Research Design

For the purposes of examining the roles of parenting style and levels of organization and control in the family as they relate to the development of self-regulation skills in young children, descriptive statistics and binary logistic regression analysis will be used to analyze the data. Logistic regression analysis was chosen because the main purpose of this study is to identify a set of independent variables that predict group membership. Logistic regression is particularly appropriate to this study as the model seeks to use multiple independent variables (parenting styles, level of family organization, level of family control, race, gender, SES) and one dependent variable which is categorical (clinical vs. comparison group for self-regulation measures). Logistic regression analysis of the data obtained in this study will help determine the predictive
influence of the independent variables on the dependent variable as well as to explain the relationship among the variables.

Participants

Twelve primary teachers will be invited to participate in this study by completing child behavior checklists on each of their students. From the initial sample of 318 students, approximately 35-40 children will be recruited based on scores from the behavioral checklists reflecting borderline to clinical levels of elevation on measures of attentional and social problems. A comparison group of 35-40 children without problems, that is, those whose scores on the same attentional and social measures of the behavior checklists were within normal ranges will also be recruited at random from the same source. To be eligible for either the clinical or comparison group, children must be between 5-7 years of age, in good health, without signs of significant sensory or intellectual impairment (passed kindergarten screening procedures) and have no significant psychiatric disorders. Children currently taking medication for attentional and/or behavioral problems will be excluded from the study.

The mother or primary caretaker of each child in both the clinical and comparison groups will be contacted via telephone and asked to participate in an interview using questionnaires measuring parenting style, levels of organization and control in the home and demographic variables. Parents whose dominant language is not English will be eliminated from the study sample due to possible misinterpretation of information resulting from language barriers.
Procedures

Following approval from necessary parties (school district administrators and the University of Massachusetts School of Education Human Subjects Review Committee, participants will be recruited from four elementary schools within the same urban school district and zone. Teachers participating in the study have been teaching kindergarten or first grade for three or more years. Teachers will be asked to complete an Achenbach Child Behavior Checklist-Teacher’s Report Form (TRF) (Achenbach, 1991) for each child in their class. Each teacher will be paid a stipend of $100 for completing the checklists. Based on the results of the initial screening with the TRF, two groups of children will be selected: (1) a group of 35-40 children who score at the borderline or clinical level on measures of attentional and social problem as defined by the TRF and; (2) a group of 35-40 children who score within the normal range on the same measures of attentional and social problems on the TRF. Parents of each child in both the clinical and comparison groups will be contacted by telephone and administered questionnaires measuring parenting style and levels of organization and control within the home. Information on demographic variables will also be gathered during this telephone interview. All interviews will be conducted by the author of this study in standardized and systematic format. Once all information is gathered, all identifying information will be replaced with identification codes for entry in the computer and to assure confidentiality.

Instrumentation: Dependent Variable

In this section, I will describe and offer the rationale for the tools to be used in the gathering of data on the dependent variable, teacher-measured self-regulation skills in
young children. The child’s primary classroom teacher will be responsible for completing the report forms.

Achenbach Teacher’s Report Form (TRF):

The Achenbach Teacher’s Report Form (TRF)(1991) (Appendix A) will need to be completed in its entirety in order to obtain the necessary information for the study. Teachers are asked to respond to a list of problem behaviors by circling 0 if the item is not true of the child, 1 if the item is sometimes or somewhat true of the child and 2 if the item is very true or often true of the child. For the purposes of measuring self-regulation, in accordance with definitions of self-regulation presented in Chapter II, only scores on scales measuring Social Problems and Attention Problems will be used. Pearson correlations between the Attention Problems and Social Problems indices for the TRF for boys ages 5-11 was \( r = .63 \) (\( p < .01 \)) while Pearson correlations between the Attention Problems and Social Problems indices of the TRF for girls ages 5-11 was \( r = .68 \) (\( p < .01 \)). Each scale is comprised of approximately 14-25 items measuring the target behavior. Raw scores will be translated to \( T \)-scores which, in turn, will be designated within the given normal, borderline or clinical range (Normal = \( T \)-score of 50-66, Borderline = \( T \)-score of 67-70 and Clinical = \( T \)-score of 71 and above) as defined by the guidelines of the TRF. Out of the 318 children whose behaviors were rated by their teachers using the Achenbach Teacher’s Report Form (1991), a group of 35-40 children will be selected whose \( T \)-scores on the Social Problems and Attention Problems Indices of the TRF fell within borderline to clinical ranges. As indicated above, according to the guidelines for cut-off scores provided by the Achenbach Teacher’s Report Form, \( T \)-scores falling from 66-70 would qualify as the “borderline” range while \( T \)-scores falling at 70 and above
would qualify as the “clinical” range. A random group of children whose T-scores on the Social Problems and Attention Problems indices of the TRF fell in the “normal” range, that is, 66 and below would comprise the comparison group. The Achenbach Child Behavior Checklist-TRF is designed for use with boys and girls in two age groups, 5-11 and 12-18. It was normed on an equal distribution of 1,391 boys and girls across a range of upper, middle and lower socioeconomic groups in the continental United States. The ethnicity of the normative group reflected a higher percentage of Caucasian participants followed by African-American and Hispanics as the largest groups in the normative sample. The TRF reports high test-retest reliability \( (r=.92) \) over a mean interval of 15 days with good stability over a 2-4 month period (Achenbach, 1991). Construct and criterion validity were established by assessing the TRF’s ability to discriminate between referred and nonreferred children in a sample of 2500 children, matched for age, gender and SES (Achenbach & Edelbrock, 1981). Results showed that the referred students obtained significantly higher scores on nearly all the TRF problem items and lower scores on all the adaptive functioning items than the nonreferred children. Using referral for special education as a validity criteria, Achenbach & Edelbrock’s (1981) results showed all effects of referral status were significant at the \( p<.01 \) reflecting higher academic and adaptive and lower problem scores for nonreferred than referred pupils. The TRF has been used in over 100 published studies (Achenbach, 1991) as an assessment tool to identify children whose problems warrant concern for professional help. Further evidence for content and construct validity comes from studies (Edelbrock, Costello & Kesser, 1984; Harris, King, Reifler & Rosenberg, 1984) on children with
diagnosed emotional and behavioral disorders where children with disorders have more
deviant scores on several scales than children without diagnosed disorders.

Instrumentation: Independent Variables

In this section, I will describe and offer the rationale for the tools to be used in the
gathering of data on demographics, parenting style and family characteristics of levels of
organization and control in the home.

Family Environment Scales (FES)

The Family Environment Scale (FES) (Moos & Moos, 1986) (Appendix B) will
be used to measure the environmental characteristics of levels of organization and control
within the family. The Family Environment Scale is a 90-item, true/false (0=true,
1=false) instrument employing three major scales (Relationship, Personal Growth and
System Maintenance) to assess the socio-environmental characteristics of a family. The
FES comes in three versions: Real, Ideal and Expected. The Real version will be used in
this study as it addresses how the family actually views itself and is the form most
thoroughly normed (Moos & Moos, 1986). While the FES is comprised of 10 subcales in
total, only the two subscales of Organization and Control within the System Maintenance
Scale will be used as they most clearly reflect the constructs of organization,
predictability and parental provision of structure within the home, which have been
shown to play important roles in children’s control perceptions (Grolnick & Ryan, 1989)
and in the motivation of children to explore their environments, a theoretical precursor to
the development of effective self-regulation skills (Bronson, 2000; Minuchin, 1971).

The Family Environment Scale (FES) is considered a valid and reliable measure
of assessing family structure (Moos & Moos, 1986) reporting internal consistencies of .76
for the Organization subscale and .67 for the Control subscale. Two-month test-retest reliabilities are reported as .76 for Organization and .77 for Control. The twelve-month stability coefficient is reported to be .81 for Organization and .79 for Control. Content and face validity were developed by formulating definitions of specific constructs, such as family control and organization; preparing items to fit the construct definitions; and selecting items that were conceptually related to a dimension. Criterion or predictive validity has been demonstrated through studies linking individual’s reports about their families to trained raters’ judgments of it. Spiegel and Wissler (1983) asked professionally trained staff to rate five aspects of psychiatric patients’ families on the basis of information provided during home visits and found that staff members’ ratings were predictably correlated with patients’ and spouses’ reports on the FES of family cohesion, expressiveness, conflict, and religious emphasis.

Since the Family Environment Scale (FES) is a parental report measure, a home observation is not required. The Home Observation for Measurement of the Environment (HOME) Inventory (Caldwell & Bradley, 1984) is another frequently used measure of family environment, which requires a 45-90 minute home visit in order to complete the Inventory. The data from the HOME Inventory is obtained through semi-structured observation and interview and provides a wealth of data on the child’s life within the home setting. For the purposes of this study, the HOME Inventory was not chosen as a measure of family environment for the following reasons: (1) the three versions of the HOME are matched to chronological/developmental age ranges (Infant/Toddler = birth to age 3, Early Childhood= 3 to 6 years of age an Middle Childhood = 6 to 10 years of age) with each version comprised of different subscales. This structure would not meet
the requirement of measuring the home environmental characteristics of kindergarten/first grade children who are typically 5-7 years of age; (2) the version which may be somewhat appropriate (Early Childhood) does not contain subscales which measure the levels of control and organization within the home; (3) conducting a 45-90 minute visit to approximately 125 homes would be prohibitive to the timely completion of this study; and (4) systematic behavioral observations such as those required by the HOME Inventory have been shown to lead to reactivity effects, in which the process of observing itself leads to changes in the subject’s behavior so that observations are not as representative of the subject’s typical behavior in that setting (Abikoff, Gittelman-Klein & Klein, 1977).

**Parental Authority Questionnaire (PAQ)**

The Parental Authority Questionnaire (PAQ) (Appendix C) was used to assess parenting style. The Parental Authority Questionnaire was developed by John Buri in 1989 to measure Baumrind’s (1971) permissive, authoritarian, and authoritative parental authority prototypes. The PAQ consists of 30 items divided equally among three scales: permissive (10 items), authoritative (10 items), and authoritarian (10 items). The responses are scored using a Likert scale format from 1 (strongly disagree) to 5 (strongly agree) with a higher score reflecting a greater amount of the particular construct being measured. The PAQ yields a mother’s and father’s score for each scale or parental authority prototype measured, however, only the mother or primary caretaker’s version will be used for the present study due to the potential unavailability of a large sample of two parent households.
The PAQ was initially constructed using 48 questionnaire items based on the descriptions of the permissive, authoritarian, and authoritative prototypes as described by Baumrind (1971). The items were initially presented in a way as to measure the permissive, authoritarians, and authoritativeness of parents as appraised by their son or daughter. The initial 48 questions were presented to 21 professionals working in the fields of psychology, education, sociology and social work with results indicating that 36 of the 48 items met criterion with 100% agreement among the judges on two-thirds of these items. Reliability testing using questionnaire responses over a two-week period on students from an introductory psychology class yielded reliabilities of .81 for mother’s permissiveness, .86 for mother’s authoritarianism and .78 for mother’s authoritativeness. Internal consistency was measured using responses from a group of 185 college students and resulted in the following Cronbach coefficient alpha values: .75 for mother’s permissiveness, .85 for mother’s authoritarianism and .82 for mother’s authoritativeness. The PAQ indicates internal consistency reliabilities of .75 for mother’s permissiveness, .85 for mother’s authoritarianism and .82 for mother’s authoritativeness. Discriminant validity studies based on responses of 127 college students indicated that mothers’ authoritarianism was inversely related to mother’s permissiveness \((r = -.48, p < .0005)\). Also, mother’s permissiveness was not significantly related to mother’s authoritativeness \((r = .07, p => .10)\). Criterion-related validity was obtained by measuring the relationship between parental styles and parental nurturance, an important dimension of Baumrind’s prototypes not included in the initial judging of the 36 items of the PAQ. Buri (1991) suggests that, given Baumrind’s explanation of prototypes, parental authoritativeness should be
positively related to parental nurturance, authoritarianism should be negatively related to nurturance and permissiveness should not be significantly related to nurturance. Using the 24-item Parental Nurturance Scale developed by Buri, Misukanis, and Mueller (1988) and the PAQ, responses of 127 college students resulted in the following bivariate correlations: authoritative mothers were found to be highest in parental nurturance \((r = -0.36, p < 0.0005)\); authoritarian parenting by mothers was found to be inversely related to nurturance \((r = -0.53, p < 0.0005)\); and maternal permissiveness was unrelated to nurturance \((r = 0.04, p > 0.10)\). The PAQ was normed on a two separate groups: 108 juniors and seniors from three different high schools (mean age = 17.4) who participated prior to a class discussion of parenting and 171 college students (mean age = 18.8 years) who completed the PAQ in partial fulfillment of an introductory psychology course requirement.

Demographic Data

A demographic survey (Appendix D) will be included in the interview to parents. The survey will ask for basic information of age, race and gender of their kindergarten child as well as whether the household is headed by one or two parents. Socioeconomic status (SES) will be defined by the level of maternal education. Level of maternal education has been used as a proxy for SES in a national longitudinal study of adolescents (Johnston, O’Malley, & Bachman, 1992) and shown to be an accurate and common measure of SES.
CHAPTER IV
RESULTS OF STUDY

Results

As stated earlier, the purposes of this study are: (1) to identify specific parenting styles as they relate to young children’s self-regulation skills as measured by their teachers; (2) to identify the relationship between the family characteristics of levels of organization and control as they relate to young children’s self-regulation skills as measured by their teachers and (3) to identify the relationship between young children’s self-regulation skills, as measured by their teachers, with the demographic characteristics of race and gender of the child and socioeconomic status of the family. A clinical group (Group 2) of 42 children who scored poorly on teacher measures of self-regulation and a comparison group (Group 1) of 42 children who scored within normal ranges on teacher measures of self-regulation were formed from an initial population of 318 children. Behavioral profiles for children in the clinical group (Group 2) are provided in Table 1. Means and standard deviations for T-scores for the clinical and comparison groups on the Achenbach indices of Social Problems and Attention Problems are provided in Table 2.

Primary caretakers for each child were interviewed using Buri’s Parental Authority Questionnaire (PAQ, 1991) and the Level of Organization and Level of Control scales of Moos and Moos’ Family Environment Scale (FES, 1986). Information regarding the demographic variables of sex and gender of the child as well as socioeconomic status of the family was also gathered. The data obtained from the interviews was analyzed using descriptive statistics and logistic regression analysis. In this chapter, the results will be broken down as followed: (1) results of a pre-analysis data
screening, (2) a breakdown of the sample population, (3) a review of the data analyses procedures used to test the sample and (4) a report of the preliminary data analysis and (5) a report of the logistic regression analysis of the data.

Pre-Analysis Data Screening

Pre-analysis data screening was conducted to prevent erroneous conclusions based on data analysis which includes accurate or missing data, skewed values and violations of assumptions embedded within the analysis.

Inaccurate data was not a concern in this study as the data set was relatively small and each piece was proofread for accuracy. There was no missing data. Cases with unusual or extreme values at one or both ends of the sample distribution, referred to as “outliers” (Mertler & Vannatta, 2001), were not a problem as the measurement instruments used in the study contained restricted ranges of response.

The use of the logistic regression model requires that no assumptions about the distribution of the independent variables need to be made (Mertler & Vannatta, 2001), thus, analyses to determine if the independent variables are normally distributed, linearly related or have equal variances are not necessary. The issue of multicollinearity is addressed in the discussion of the correlational results later in this section with results depicted in Table 13.

The issue of ratio of cases to variables is of concern in this analysis. The overall number of participants numbered 65, which renders a ratio of 8 cases per variable. Statistical guidelines provided by Cohen and Cohen (1983) suggest a minimum number of cases per variable for regression is 10. In order to comply with Cohen and Cohen’s specifications, the demographic variables of gender, race and SES were deleted from the
model. The variables entered into the regression were authoritative parenting (AUTH1), authoritarian parenting (AUTH2), permissive parenting (PERM) and levels of organization and control (LEVCON, LEVORG) rendering the ratio of cases to variables 13:1.

Behavioral Profiles and Breakdown of the Sample

Of the 318 children whose behaviors were rated by their teachers using the Achenbach Teacher’s Report Form (1991), 42 children were identified to comprise the clinical group based on elevated scores ($T$ Score $> 66$) (Achenbach, 1991) on the Attention Problems and Social Problems Indices of the Achenbach Teacher’s Report Form. The Attention Problems Index of the TRF is comprised of 20 items illustrating behaviors indicative of attention problems. Examples include acting young, difficulty concentrating, fidgeting, impulsivity, difficulty following directions, inattentiveness and difficulty completing work. The Social Problems Index is comprised of 13 items illustrating behaviors depicting social problems. Examples include acting young, difficulty getting along with others, not liked by other children and preferring younger children as playmates.

When examining the individual profiles of each child within Group 2 (clinical) on these indices, 14 (42%) out of the 33 children were reported to act young “often” while 4 (12%) out of 33 were reported to act young “sometimes”. On measures of difficulty sitting still and fidgeting, 24 (72%) out of 33 scored “often” while 6 (18%) out of 33 scored “sometimes”. On measures of impulsivity, 16 (48%) of 33 scored “often” while 10 (30%) of 33 scored “sometimes”. Some of children in Group 2 appeared to have difficulty with peer interactions as 13 (39%) of 33 were noted to “often” be not liked and
6 (18%) were noted to be “sometimes” not liked. Similarly, 10 (10%) out of the 33 “often” had difficulty getting along with peers while 5 (15%) “sometimes” had difficulty getting along with peers. Inattentiveness appeared to be a common trait of children in Group 2 as 16 (48%) scored in the “often” range and 12 (36%) scored in the “sometimes” range. Finally, difficulty following directions was also a reported characteristic of many children in Group 2 with 8 (24%) “often” having problems in this area and 17 (51%) “sometimes” having problems in this area. Overall, children in Group 2 appeared to be characterized as having difficulties with impulsivity, attending to tasks, sitting still, following directions and behaving in inappropriate ways. Furthermore, children in Group 2 also appeared to exhibit social difficulties as noted by reports of being not liked and having difficulty getting along with others. Table 1 illustrates the behavioral profile of children in clinical group (Group 2).
Table 1

Behavioral Profile of Children in Group 2 (clinical) (N=33)

<table>
<thead>
<tr>
<th></th>
<th>Sometimes True</th>
<th></th>
<th>Often True</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td><strong>Attention Problems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acts Young</td>
<td>4</td>
<td>12%</td>
<td>14</td>
<td>42%</td>
</tr>
<tr>
<td>Fidgeting</td>
<td>6</td>
<td>18%</td>
<td>24</td>
<td>72%</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>10</td>
<td>30%</td>
<td>16</td>
<td>48%</td>
</tr>
<tr>
<td>Inattentive</td>
<td>12</td>
<td>36%</td>
<td>16</td>
<td>48%</td>
</tr>
<tr>
<td>Difficulty Following</td>
<td>17</td>
<td>51%</td>
<td>8</td>
<td>24%</td>
</tr>
<tr>
<td>Directions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Social Problems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acts Young</td>
<td>4</td>
<td>12%</td>
<td>14</td>
<td>42%</td>
</tr>
<tr>
<td>Difficulty Getting Along</td>
<td>5</td>
<td>15%</td>
<td>10</td>
<td>30%</td>
</tr>
<tr>
<td>With Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Liked</td>
<td>6</td>
<td>18%</td>
<td>13</td>
<td>39%</td>
</tr>
<tr>
<td>Clingy</td>
<td>4</td>
<td>12%</td>
<td>6</td>
<td>18%</td>
</tr>
<tr>
<td>Prefers Younger Children</td>
<td>4</td>
<td>12%</td>
<td>8</td>
<td>24%</td>
</tr>
</tbody>
</table>

In order to form a comparison group, 42 children were randomly selected from the pool of children with behavioral profiles reflecting normal scores (*T* Scores 50-65) (Achenbach, 1991) on the same index measures. Children from Group 1 exhibited patterns of behavior, as described by the same items used to measure Group 2, which
reflected "normal" skills in the areas of attention and social skills. The mean $T$-score on the Social Problems Index of the TRF for Group 1 was 56.31 while the mean $T$-score on the Attentional Problems Index of the TRF for Group 1 was 56.25. Thus, the profile for children in Group 1 on both TRF indices of Attention and Social Problems was generally consistent. The mean $T$-score on the Social Problems Index of the TRF for Group 2 was 74.06 while the mean $T$-score on the Attention Problems Index of the TRF for Group 2 was 75.52, again reflecting a consistent profile on both measures (Table 2).

Table 2

<table>
<thead>
<tr>
<th>GROUP</th>
<th>Social</th>
<th>Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mean</td>
<td>56.31</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>4.169</td>
</tr>
<tr>
<td>2</td>
<td>Mean</td>
<td>74.06</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>4.886</td>
</tr>
<tr>
<td>Total</td>
<td>Mean</td>
<td>65.32</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>10.016</td>
</tr>
</tbody>
</table>

Of the 84 children comprising a clinical and comparison grouping, 65 mothers or primary caretakers participated in telephone interviews, leaving 19 mothers or primary caretakers who were not available for interviews. The most frequently noted reason for unavailability was a disconnected or nonworking telephone number with no further information regarding a new number or address.
Within the clinical grouping, 33 mothers or caretakers were available for and participated in the telephone interview. The clinical group was comprised of 20 male children (61%) and 13 female children (39%). Of the 33 children in the clinical group, 13 (39%) were Hispanic, 5 (15%) were African-American and 15 (45%) were Caucasian. The mean age of the children in the clinical group was 7.1 years. With regard to maternal levels of education, used as a measure of socioeconomic status (SES), 6% of the mothers or primary caretakers reported completing their schooling in 10th grade, 45% reported completing 11-12th grade and 39% reported attending 1-2 years of college while only 9% reported completing 3-4 years of college.

Within the comparison group, 32 mothers or primary caretakers were available for and participated in the interview. The comparison group was comprised of 15 (47%) male children and 17 (53%) female children. Of the 32 children in this group, 11 (34%) were Hispanic, 7 (22%) were African-American and 13 (44%) were Caucasian. The mean age of the children in this group was 7.3 years. With regard to maternal level of education, as a measure of socioeconomic status (SES), 16 % of the mothers or primary caretakers reported their last level of schooling as 10th grade, 44% reported completing 11-12th grade, 37% reported completing 1-2 years of college and 3% reported completing 3-4 years of college. Table 3 illustrates a complete breakdown of the sample population.
Table 3

**Breakdown of Sample**

<table>
<thead>
<tr>
<th></th>
<th>Group 1 (Comparison)</th>
<th>Group 2 (Clinical)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=32</td>
<td>N=33</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>African-American</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Caucasian</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td><strong>Maternal Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-10th Grade</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>11-12th Grade</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>1-2 years college</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>3-4 years college</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Mean Age</strong></td>
<td>7.3</td>
<td>7.1</td>
</tr>
</tbody>
</table>

**Review of Preliminary Data Analysis Procedures**

Descriptive analyses were used to describe and compare the responses of the participants on the survey measures of parenting style and levels of organization and control in the home. Each hypotheses is presented with the accompanying statistical analysis that was performance. Means, standard deviations and standard errors were calculated and presented (see Table 11) for the numerical values assigned to responses.
pertaining to each dimension of parenting style and levels of organization and control in the home, as reported by the primary caretaker interviewed during the data collection process. Means were then compared using the t-test for independent samples to determine significant differences (see Table 12). Median cutpoints were provided for responses on measures of authoritative, authoritarian and permissive parenting as well as on measures of level of organization and control. Crosstabulation data is also provided to illustrate the frequency patterns of responses for the independent variables of parenting style and level of organization and control. Finally, a correlational matrix was created to assess multicollinearity as well as to examine significant correlations among variables (see Table 13).

Review of Hypotheses and Accompanying Statistical Tests Used

H(1): Parenting style (authoritative = auth1, authoritarian = auth2, permissive = perm) will be a statistically significant predictor of self-regulation skills in young children.

In the first hypothesis, parenting style was coded as indicated and was included with the variables of family characteristics of levels of organization and control in the home and entered in a logistic regression model to determine which variables were significant predictors of self-regulation skills. Self-regulation skills was assigned a dummy code (Comparison group = 1, Clinical group = 2).

H(2) The family characteristics of level of control (levcon) and level of organization (levorg) reported in the home will be statistically significant predictors of self-regulation skills in young children.
In the second hypothesis, levels of organization and control in the home were coded as indicated and entered with coded parenting variables in a logistic regression model to determine which variables were significant predictors of self-regulation skills in young children. Self-regulation skills were assigned dummy codes (Comparison group = 1, Clinical group = 2).

H (3): Race, gender and socioeconomic status (SES) of the child will be statistically significant predictors of self-regulation skills in young children.

In the third hypothesis, race was assigned a dummy code (Hispanic=1, African-American = 2 and Caucasian=3) as was gender (male=1, female = 2). SES was also assigned a dummy code (#1-5) based the reported category of reported maternal education. Demographic variables, once coded, were entered with coded variables of parenting style and levels of organization and control in the home in a bivariate correlation model to determine the degree of relationship between variables. Due to deletion of the demographic variables from the logistic regression model, statements regarding the predictive value of the variables on self-regulation skills are not possible.

**Preliminary Data Analysis**

The primary aim of this study is to examine the relationship between the variables of parenting style and family characteristics of levels of control and organization in the home as well as the demographic variables of gender, race and SES as they relate to the development of self-regulation skills in young children. The sample population consisted of two groups of parents: those of a child ages 5-7 whose behavior, as measured by his/her teacher, fell in the “clinical” group, that is scored in the “borderline” or “clinical”
range on measures of Social Problems and Attention Problems on the Achenbach TRF and those parents of a child, aged 5-7, whose behavior on the same measures of the Achenbach TRF rendered a “normal” profile and fell in the “comparison” group.

Towards this end, the responses of the parents in both groups on instruments surveying parenting style, levels of organization and control in the home and demographic variables were described and summarized and the means were examined for statistical differences.

Within Group 1 (comparison), twenty-six respondents (81%) were noted to score highest on measures of authoritative parenting with a score range of 31-49 out of a possible total score of 50. Three respondents (9%) scored highest on measures of authoritarian parenting with a score range of 24-41 out of a possible total score of 50. Within Group 1, 3 respondents (9%) endorsed equivalent measures of both authoritative and authoritarian parenting styles. No respondents in Group 1 endorsed the permissive parenting style with scores ranging from 14-32 out of a possible total score of 50. As stated in the following section, the mean score on measures of Level of Organization for Group 1 respondents was 7.25 with a score range of 1-9 out of a possible total score of 10 with all but one respondent earning a total score between 4-9 on this scale. The mean score on measures Level of Control for Group 1 was 6.34 with a score range of 4-8 of a possible total score of 10. This data indicates that majority of respondents in Group 1 endorsed authoritative parenting style over authoritarian or permissive styles and tended to score slightly higher on measures of organization rather than control in the family environment.

Within Group 2 (clinical), seventeen respondents (52%) endorsed authoritative parenting with a score range of 18-46 out of a possible total score of 50. Ten respondents
endorse authoritarian parenting with a score range of 19-45 out of a possible total score of 50. Four (9%) respondents earned equivalent scores on measures of authoritative and authoritarian parenting and two respondents (6%) endorsed permissive parenting with a score range of 1-34 out of a possible total score of 50. As shown in the following section, the mean score on measures of Level of Organization is 5.30 with a score range of 2-9 out of a possible total score of 10 while the mean score on measures of Level of Control was 6.61 with a score range of 3-9 out of a total possible score of 10. This data suggests that the majority of parents in Group 2 also endorsed authoritative parenting style over authoritarian and permissive styles and scored significantly higher on measures of Level of Control rather than Level of Organization in the home.

When comparing the above data on Groups 1 and 2, one can offer several observations. With regard to measures of parenting style, the majority of respondents in both groups endorsed authoritative parenting style over authoritarian or permissive, however, responses of Group 1 are more “homogenous” than Group 2 in their pattern of responses as Group 1 shows a much higher percentage of parents falling into the authoritative category and a much lower percentage falling into the authoritarian and permissive categories. The pattern in Group 2 reflects more variability in parenting style preferences with small discrepancies in the frequencies of respondents falling into the authoritative, authoritarian and permissive categories. Interestingly, no parents in Group 1 were categorized as permissive while two parents in Group 2 were noted to be permissive. On measures of Level of Organization and Level of Control in the home, Groups 1 and 2 differ in their patterns with Group 1 showing a higher score on measures of organization than control and Group 2 showing the reverse, with higher scores on
measures of control than organization. The issue of variability of response patterns between Groups 1 and 2 also arises with measures of Levels of Organization and Control as the range of scores for Group 1 on both measures reflects a smaller parameter (with the exception of one “outlier” case in the Level of Organization measure for Group 1) than can be seen on the same measures for Group 2. Specifically, there was more variability in responses to items measuring Levels of Organization and Control in the family environment from respondents in Group 2 than respondents in Group 1. Table 3 illustrates the data described in this section.

Tables 5-9 provide data illustrating the distribution patterns for responses of the independent variables of parenting style and levels of organization and control in the home. This data depicts what percentage of the sample populations for Group 1 (comparison) and Group 2 (clinical) scored at the high, medium or low range of the scales for authoritative, authoritarian and permissive parenting styles and the high or low range of the scales for levels of organization and control in the home. Cutpoints for high, medium and low ranges for parenting styles were calculated by simply dividing the frequency distribution into tertiles while the high and low ranges for levels of organization and control were obtained by dividing the frequency distribution in half. Data from this analysis indicates that the majority of parents in Groups 1 and 2 scored within the medium range on measures of authoritative parenting. On measures of authoritarian parenting, parents from Group 1 fell primarily in the low to medium ranges while parents in Group 2 fell primarily in the low or high range. On measures of permissive parenting, the majority of parents in Group 1 and 2 fell in the medium range. On measures of level of organization, all but 1 parent scored in the high range while
parents in Group 2 showed a more even distribution between high and low ranges. Finally, on measures of level of control, the majority of parents in Group 1 scored in the high range while, again, parents in Group 2 showed a slightly higher percentage falling in the high rather than the low range. This data is consistent with other descriptive data put forth in this study as it further illustrates the more homogeneous pattern of responses in Group 1 (comparison) in contrast to the more variability noted in response patterns for Group 2 (clinical). Noteworthy is the extreme response pattern on the measures of level of organization, where parents in Group 1 almost unanimously endorsed high levels of organization in the home in contrast to a more evenly distributed pattern seen in the parents of Group 2.

Table 10 illustrates the median cutpoints for the independent variables of parenting style and levels of organization and control for Groups 1 and 2 as well as the entire sample population.
Table 4

Response Patterns of Groups 1 (comparison) and 2 (clinical) on Measures of Parenting Style and Levels of Organization and Control

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Group 1 (N=32)</th>
<th>Group 2 (N=33)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Authoritative (Auth1)</td>
<td>26</td>
<td>81%</td>
</tr>
<tr>
<td>Authoritarian (Auth2)</td>
<td>3</td>
<td>9%</td>
</tr>
<tr>
<td>Permissive (Perm)</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Level of Organization</td>
<td>M=7.25</td>
<td>1-9</td>
</tr>
<tr>
<td>Level of Control</td>
<td>M=6.34</td>
<td>4-8</td>
</tr>
</tbody>
</table>
Table 5
Distribution Patterns for Responses of Group 1 (comparison) and Group 2 (clinical) on Measures of Authoritative Parenting Style

<table>
<thead>
<tr>
<th>Authoritative Parenting Responses</th>
<th>Group 1 (N=32)</th>
<th>%</th>
<th>Group 2 (N=33)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (18-32)</td>
<td>1</td>
<td>3%</td>
<td>13</td>
<td>39%</td>
</tr>
<tr>
<td>Medium (34-41)</td>
<td>23</td>
<td>72%</td>
<td>15</td>
<td>45%</td>
</tr>
<tr>
<td>High (42-49)</td>
<td>8</td>
<td>25%</td>
<td>5</td>
<td>15%</td>
</tr>
</tbody>
</table>

Table 6
Distribution Patterns for Responses of Group 1 (comparison) and Group 2 (clinical) on Measures of Authoritarian Parenting Style

<table>
<thead>
<tr>
<th>Authoritarian Parenting Style</th>
<th>Group 1 (N=32)</th>
<th>%</th>
<th>Group 2 (N=33)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (19-28)</td>
<td>12</td>
<td>38%</td>
<td>13</td>
<td>39%</td>
</tr>
<tr>
<td>Medium (29-36)</td>
<td>13</td>
<td>41%</td>
<td>9</td>
<td>27%</td>
</tr>
<tr>
<td>High (37-45)</td>
<td>7</td>
<td>22%</td>
<td>11</td>
<td>33%</td>
</tr>
</tbody>
</table>
Table 7

Distribution Patterns for Responses for Group 1 (comparison) and Group 2 (clinical) on Measures of Permissive Parenting Style

<table>
<thead>
<tr>
<th>Permissive Parenting Style</th>
<th>Group 1 (N=32)</th>
<th>%</th>
<th>Group 2 (N=33)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (12-18)</td>
<td>14</td>
<td>44%</td>
<td>6</td>
<td>18%</td>
</tr>
<tr>
<td>Medium (19-25)</td>
<td>17</td>
<td>53%</td>
<td>15</td>
<td>45%</td>
</tr>
<tr>
<td>High (26-43)</td>
<td>1</td>
<td>3%</td>
<td>12</td>
<td>36%</td>
</tr>
</tbody>
</table>

Table 8

Distribution Patterns for Responses of Group 1 (comparison) and Group 2 (clinical) on Measures of Level of Organization

<table>
<thead>
<tr>
<th>Level of Organization</th>
<th>Group 1 (N=32)</th>
<th>%</th>
<th>Group 2 (N=33)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (1-4)</td>
<td>1</td>
<td>3%</td>
<td>14</td>
<td>42%</td>
</tr>
<tr>
<td>High (5-9)</td>
<td>31</td>
<td>97%</td>
<td>19</td>
<td>58%</td>
</tr>
</tbody>
</table>
Table 9

Distribution Patterns for Responses of Group 1 (comparison) and Group 2 (clinical) on Measures of Level of Control

<table>
<thead>
<tr>
<th>Level of Control</th>
<th>Group 1 (N=32)</th>
<th>Group 2 (N=33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (3-5)</td>
<td>8 25%</td>
<td>14 42%</td>
</tr>
<tr>
<td>High (6-9)</td>
<td>24 75%</td>
<td>19 58%</td>
</tr>
</tbody>
</table>

Table 10

Median Cutpoints for Sample Population

<table>
<thead>
<tr>
<th>GROUP</th>
<th>AUTH1</th>
<th>AUTH2</th>
<th>PERM</th>
<th>LEVCON</th>
<th>LEVORG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40.00</td>
<td>30.00</td>
<td>19.00</td>
<td>6.00</td>
<td>8.00</td>
</tr>
<tr>
<td>2</td>
<td>34.00</td>
<td>30.00</td>
<td>25.00</td>
<td>6.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Total</td>
<td>38.00</td>
<td>30.00</td>
<td>22.00</td>
<td>6.00</td>
<td>7.00</td>
</tr>
</tbody>
</table>

The results of the descriptive analysis examining the mean responses on measures of parenting style and levels of organization and control in the home can be seen on Tables 11 and 12. These results indicate statistically significant differences in the mean responses between Group 1 (comparison) and Group 2 (clinical) on measures of authoritative parenting style. Results of this aspect of the data analysis indicate that parents of children with a profile of self-regulation skills falling within normal ranges...
rated themselves as significantly higher in their endorsement of parenting practices consistent with the authoritative style \((M=40.28, \text{SD}=3.98)\) that parents whose children fell in the “clinical” range on measures of self-regulation skills \((M=34.21, \text{SD}=5.81)\).

Furthermore, an examination of the standard deviations and standard errors of measurement for each mean suggests that parents of Group 1 (comparison) showed less variability and range in their responses on measures of authoritative parenting styles than did parents in Group 2 (clinical). Statistically significant differences between the means for responses on measures of permissive parenting style were also noted (Table 12) between Groups 1 and 2. Data analysis results show that parents in Group 1 (comparison) endorsed significantly fewer responses \((M=19.59, \text{SD}=3.48)\) consistent with permissive parenting styles than did parents in Group 2 (clinical) \((M=23.34, \text{SD}=5.80)\). As in the case of responses for authoritative parenting styles, the standard deviations and standard errors of measurement are much larger for those parents in Group 2, suggesting more variability and range in their responses to these items.

There was no significant difference noted between the means on responses pertaining to measures of authoritarian parenting styles between Group1 (comparison) \((M=31.09, \text{SD}=5.05)\) and Group 2 (clinical) \((M=32.18, \text{SD}=7.20)\) (Table 12).

With regard to comparisons between the means on responses of measures of Levels of Organization and Levels of Control, data analysis (Table 12) indicates a statistical difference in the means between Groups 1 and 2 on levels of organization reported in the home. Results indicate that parents in Group 1 (comparison) \((M=7.25, \text{SD}=1.97)\) tended to provide responses (True/False format) endorsing greater amounts of organization than did Group 2 (clinical) \((M=5.30, \text{SD}=2.84)\). There was no significant
difference between the means on responses of measures of Levels of Control in the home between Group 1 (M=6.34, SD=1.29) and Group 2 (M=6.61, SD=3.71). Again, larger standard deviations and standard errors of measurement reflected in the means of Group 2 suggest more variability and range in their responses to these items.

Table 11

Means and Standard Deviations for Groups 1 (comparison) and Group 2 (clinical) for Parenting Style and Family Environmental Characteristics of Levels of Organization and Control

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Group 1 (N=32)</th>
<th>Group 2 (N=33)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Authoritative (Auth1)</td>
<td>40.28</td>
<td>3.98</td>
</tr>
<tr>
<td>Authoritarian (Auth2)</td>
<td>31.09</td>
<td>5.05</td>
</tr>
<tr>
<td>Permissive (Perm.)</td>
<td>19.59</td>
<td>3.48</td>
</tr>
<tr>
<td>Level of Control</td>
<td>6.34</td>
<td>1.29</td>
</tr>
<tr>
<td>Level of Organization</td>
<td>7.25</td>
<td>1.97</td>
</tr>
</tbody>
</table>

Note: The higher the mean, the greater amount of the characteristic or style endorsed.
Table 12

Results of \( t \)-Testing for Equality of Means

<table>
<thead>
<tr>
<th></th>
<th>( t )</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authoritative (Auth 1)</td>
<td>4.900</td>
<td>63</td>
<td>.000</td>
<td>6.07</td>
<td>1.24</td>
</tr>
<tr>
<td>Authoritarian (Auth 2)</td>
<td>-.703</td>
<td>63</td>
<td>.485</td>
<td>-1.09</td>
<td>1.55</td>
</tr>
<tr>
<td>Permissive (Perm)</td>
<td>-3.135</td>
<td>62</td>
<td>.003</td>
<td>-3.75</td>
<td>1.20</td>
</tr>
<tr>
<td>Level of Control</td>
<td>-.379</td>
<td>63</td>
<td>.706</td>
<td>-.26</td>
<td>.69</td>
</tr>
<tr>
<td>Level of Organization</td>
<td>3.20</td>
<td>63</td>
<td>.002</td>
<td>1.95</td>
<td>.61</td>
</tr>
</tbody>
</table>

Correlational Results

Prior to analysis of correlations among variables, a check for multicollinearity was conducted to determine the appropriateness of the predictor variables selected for this study. The correlations between the predictor variables were inspected for high degrees of interrelatedness, using a \( r = .80 \) cutoff point, as indicated by Licht (1995). Close examination of the correlational matrix indicates that multicollinearity is not a problem with this study (Table 13).

Correlations between parenting styles, levels of organization and levels of control in the home and demographic variables are presented in Table 13. Results of this
correlational matrix show that authoritative parenting style correlated negatively \((r=-0.25, p<0.05)\) with authoritarian parenting style and permissive parenting style and positively with level of organization \((r=0.61, p<0.05)\). In addition to a negative association with authoritative parenting, authoritarian parenting correlated negatively with permissive parenting \((r=-0.48, p<0.05)\) and positively with levels of control \((r=0.32, p<0.05)\) while permissive parenting correlated negatively not only with authoritative and authoritarian parenting but also with level of control \((r=-0.30, p>0.05)\) and level of organization \((r=-0.24, p<0.05)\).

As stated above, level of control was positively associated with authoritarian parenting and negatively associated with permissive parenting. A positive correlation \((r=0.50, p<0.05)\) was also reported between the variables of level of control and level of organization. Finally, race was shown to be negatively correlated \((r=-0.26, p<0.05)\) with level of control with data indicating an inverse relationship between the value of level of control endorsed by the parent and the numerical category assigned to the race of the family. Therefore, increased levels of control are more likely to be found in racial categories with the lowest numerical assignment (Hispanics=1, African-Americans=2, Caucasians=3).

A summary of data reflected in the correlational analysis indicate that parents who score highest on measures of authoritative parenting also tend to report higher levels of organization in the home and score significantly lower on measures of authoritarian parenting. Similarly, parents who report high scores on authoritarian parenting tend to also report significantly higher levels of control in the home and show significantly lower scores on authoritative and permissive parenting practices. Correlational data further
indicate that parents who endorse the permissive parenting style tend to have lower levels of both control and organization in the home and score significantly lower on measures of authoritative and authoritarian parenting practices. No significant relationships were noted between SES, parenting style and levels of organization and control in the home nor between gender, parenting style and levels of organization and control in the home. Race, however, was negatively correlated with level of control, indicating an inverse relationship between the value of level of control and the numerical “dummy” code assigned to racial categories. Data indicates the strongest positive correlation exists between authoritative parenting style and level of organization in the home while the strongest negative correlation exists between permissive and authoritarian parenting styles.
Table 13

Correlation Matrix

<table>
<thead>
<tr>
<th>N=65</th>
<th>GROUP</th>
<th>AUTH1</th>
<th>AUTH2</th>
<th>PERM</th>
<th>LEVCON</th>
<th>LEVORG</th>
<th>SES</th>
<th>M(1) F(2)</th>
<th>H(1) A(2) C(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROUP</td>
<td>1.00</td>
<td>-.525</td>
<td>.088</td>
<td>.376</td>
<td>-.124</td>
<td>-.377</td>
<td>.154</td>
<td>-.138</td>
<td>-.018</td>
</tr>
<tr>
<td>AUTH1</td>
<td>-.525</td>
<td>1.00</td>
<td>-.249</td>
<td>-.206</td>
<td>.153</td>
<td>.605</td>
<td>.024</td>
<td>-.069</td>
<td>.033</td>
</tr>
<tr>
<td>AUTH2</td>
<td>.088</td>
<td>-.249</td>
<td>1.00</td>
<td>-.476</td>
<td>.316</td>
<td>.011</td>
<td>.076</td>
<td>.093</td>
<td>-.150</td>
</tr>
<tr>
<td>PERM</td>
<td>.376</td>
<td>-.206</td>
<td>-.476</td>
<td>1.00</td>
<td>-.299</td>
<td>-.237</td>
<td>-.155</td>
<td>.081</td>
<td>.106</td>
</tr>
<tr>
<td>LEVCON</td>
<td>-.124</td>
<td>.153</td>
<td>.316</td>
<td>-.299</td>
<td>1.00</td>
<td>.496</td>
<td>-.107</td>
<td>-.115</td>
<td>-.258</td>
</tr>
<tr>
<td>LEVORG</td>
<td>-.377</td>
<td>.605</td>
<td>.011</td>
<td>-.237</td>
<td>.496</td>
<td>1.00</td>
<td>-.103</td>
<td>-.087</td>
<td>-.021</td>
</tr>
<tr>
<td>SES</td>
<td>.154</td>
<td>.024</td>
<td>.076</td>
<td>.117</td>
<td>-.107</td>
<td>-.103</td>
<td>1.00</td>
<td>-.081</td>
<td>-.135</td>
</tr>
<tr>
<td>M(1)F(2)</td>
<td>-.138</td>
<td>-.069</td>
<td>.093</td>
<td>.081</td>
<td>-.115</td>
<td>-.087</td>
<td>.081</td>
<td>1.00</td>
<td>-.011</td>
</tr>
<tr>
<td>H(1)A(2)</td>
<td>-.018</td>
<td>.033</td>
<td>-.150</td>
<td>.106</td>
<td>-.258</td>
<td>-.021</td>
<td>-.135</td>
<td>.011</td>
<td>1.00</td>
</tr>
<tr>
<td>C(3)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sig. (p<.05) (1-tailed)

<table>
<thead>
<tr>
<th>GROUP</th>
<th>AUTH1</th>
<th>AUTH2</th>
<th>PERM</th>
<th>LEVCON</th>
<th>LEVORG</th>
<th>SES</th>
<th>M(1) F(2)</th>
<th>H(1) A(2) C(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.000</td>
<td>.242</td>
<td>.001</td>
<td>.163</td>
<td>.001</td>
<td>.111</td>
<td>.137</td>
<td>.442</td>
<td></td>
</tr>
<tr>
<td>.242</td>
<td>.023</td>
<td>.050</td>
<td>.111</td>
<td>.000</td>
<td>.425</td>
<td>.291</td>
<td>.398</td>
<td></td>
</tr>
<tr>
<td>.001</td>
<td>.023</td>
<td>.000</td>
<td>.005</td>
<td>.465</td>
<td>.273</td>
<td>.230</td>
<td>.116</td>
<td></td>
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<tr>
<td>.163</td>
<td>.050</td>
<td>.000</td>
<td>.008</td>
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<tr>
<td>.001</td>
<td>.111</td>
<td>.005</td>
<td>.008</td>
<td>.000</td>
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<td>.019</td>
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<td>.111</td>
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<tr>
<td>.137</td>
<td>.291</td>
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<td>.260</td>
<td>.182</td>
<td>.245</td>
<td>.260</td>
<td>.467</td>
<td></td>
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<tr>
<td>.442</td>
<td>.398</td>
<td>.116</td>
<td>.200</td>
<td>.019</td>
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<td>.142</td>
<td>.467</td>
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</tr>
<tr>
<td>C(3)</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

90
Results of the Logistic Regression Analysis

Binary logistical regression was conducted to determine which of the independent variables (parenting styles, level of organization in the home, level of control in the home) were significant predictors of teacher-measured self-regulation skills in young children. The Enter method of logistical regression was used whereby all the variables were entered in the model, irregardless of significant contributions. Data screening led to the elimination of three independent variables (gender, race and SES) in the model. Regression results indicate the overall model of predictors (authoritative parenting, authoritarian parenting, permissive parenting, level of organization and level of control) was statistically reliable in distinguishing between Group 1 (comparison) and Group 2 (clinical) on measures of self-regulation skills ($-2 \text{ Log Likelihood}=59.395, x^2(5)=30.600, p<.0001$). The model correctly classified 84.6% of the cases. The Cox & Snell $R^2$ and the Nagelkerke $R^2$ indicate that 38-50% of the variance in the dependent variable of self-regulation can be accounted for by the independent variables entered in the equation (authoritative, authoritarian, permissive parenting styles and levels of organization and control). Regression coefficients are presented in Table 13. Wald statistics indicate that authoritative parenting and permissive parenting are statistically significant predictors of self-regulation skills in young children (Table 14). The negative $\beta$ illustrating the significant predictive relationship between authoritative parenting and self-regulation skills ($\beta=-.229, p<.05$) indicates a decrease in the (numerical)categorical grouping with an increase in the measure of authoritative parenting. Thus, increased levels of authoritative parenting are likely to be found in the self-regulation group assigned the lowest number (Group 1) which is the group noted for “normal” patterns of self-
regulation. Similarly, a positive $\beta$ illustrating the significant predictive relationship between permissive parenting and self-regulation skills ($\beta=.231, p<.05$) indicates an increase in the (numerical) categorical assignment as the measure of permissive parenting increases. Therefore, increases in measures of permissive parenting are likely to be found in the self-regulation group assigned the highest number (Group 2), which is the group demonstrating clinical patterns of self-regulation skills. Odds ratios ($\text{Exp}(B)$) for variables entered in the model indicate little change in the likelihood of grouping for self-regulation with an increase or decrease in the dependent variables. That is, the odds ratio for the entered variables of authoritative, authoritarian and permissive parenting as well as level of organization and control indicates insignificant (very small) changes (increase or decrease) in the odds of being classified as Group 1 or 2 when the predictor variables are increased by 1. Figure 3 illustrates the predictive relationships between the independent and the dependent variables entered into the logistical regression model.

Table 14

Regression Coefficients for Model

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>$\text{Exp}(B)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTH1</td>
<td>-.229</td>
<td>.097</td>
<td>5.609</td>
<td>1</td>
<td>.018</td>
<td>.796</td>
</tr>
<tr>
<td>AUTH2</td>
<td>.083</td>
<td>.070</td>
<td>1.413</td>
<td>1</td>
<td>.235</td>
<td>1.087</td>
</tr>
<tr>
<td>PERM</td>
<td>.231</td>
<td>.090</td>
<td>6.623</td>
<td>1</td>
<td>.010</td>
<td>1.260</td>
</tr>
<tr>
<td>LEVCON</td>
<td>.080</td>
<td>.270</td>
<td>.087</td>
<td>1</td>
<td>.768</td>
<td>1.083</td>
</tr>
<tr>
<td>LEVORG</td>
<td>-.094</td>
<td>.180</td>
<td>.270</td>
<td>1</td>
<td>.603</td>
<td>.911</td>
</tr>
<tr>
<td>Constant</td>
<td>1.086</td>
<td>5.279</td>
<td>.042</td>
<td>1</td>
<td>.837</td>
<td>2.961</td>
</tr>
</tbody>
</table>

a Variable(s) entered on step 1: AUTH1, AUTH2, PERM, LEVCON, LEVORG.
Independent Variable

Group 1 = Comparison Group for Self-Regulation Skills

β = .229*

Group 2 = Clinical Group for Self-Regulation Skills

β = .231*

Dependent Variables

β = .083

Authoritative Parenting Style

β = .080

Level of Control

β = .094

Authoritarian Parenting Style

Permissive Parenting Style

Level of Organization

Figure 3. Conceptual model of the influence of parenting style and family environmental variables on teacher measured self-regulation skills in young children.

In this chapter, results of the present study were reviewed, beginning with pre-analysis data screening, a breakdown of the sample population and a review of the data analyses procedures. Descriptive statistics for the data were provided and indicated statistically significant differences in the means of responses of Groups 1 and 2 on measures of authoritative and permissive parenting styles as well as on measures of levels of organization in the home. Distribution data and measures of central tendency were provided to illustrate the response patterns of the sample population. A correlational matrix was presented, illustrating statistically significant correlations among variables.
and ruling out multicollinearity. Positive correlations were noted between authoritative parenting style and level of organization in the home ($r=0.605, p <0.05$), level of control and level of organization ($r=0.496, p<0.05$) and level of organization and level of control ($r=0.496, p<0.05$). Negative correlations were reflected between authoritative and authoritarian parenting styles ($r=-0.249, p<0.05$), authoritarian and permissive parenting styles ($r=-0.476, p<0.05$), permissive parenting style and level of organization ($r=-0.237, p<0.05$) and permissive parenting style and level of control ($r=-0.299, p<0.05$). A negative correlation was also found between race and level of control ($r=-0.258, p<0.05$). Results of the logistic regression analysis indicated that authoritative parenting and permissive parenting were statistically significant predictors of teacher measured self-regulation skills in young children while the overall model including the all variables (authoritative, authoritarian, permissive parenting and levels of organization and control) correctly classified 84.6% of the cases. See Table 15 for a summary of results of this study.
### Table 15

#### Summary of Results

<table>
<thead>
<tr>
<th>Hypothesis #</th>
<th>Hypothesis</th>
<th>Data Analysis Technique</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Parenting style will be a statistically significant predictor of self-regulation skills in young children.</td>
<td>Logistic Regression</td>
<td>This hypothesis was supported as the authoritative and permissive styles of parenting were shown to be significant predictors of self-regulation skills in young children.</td>
</tr>
<tr>
<td>2.</td>
<td>The family characteristics of level of control and level of organization statistically significant predictors of self-regulation skills in young children.</td>
<td>Logistic Regression</td>
<td>This hypothesis was not supported as level of organization and level of control were not found to be significant predictors of self-regulation skills in young children.</td>
</tr>
<tr>
<td>3.</td>
<td>Race, gender and socioeconomic status (SES) of the child will be statistically significant predictors of self-regulation skills in young children.</td>
<td>Bivariate Correlation</td>
<td>This hypothesis was not supported as demographic variables were not entered in the regression equation, however, race was found to have a negative correlational relationship with level of control.</td>
</tr>
</tbody>
</table>
CHAPTER V
SUMMARY AND CONCLUSIONS

Discussion

This chapter is divided into 4 sections: (1) a review of the results of the study, (2) methodological limitations, (3) study implications for parents, (3) study implications for schools and daycare and, (4) directions for future research.

Review of Results of the Study

Hypothesis (1)

Parenting style (authoritative = auth1, authoritarian = auth2, permissive = perm.) will be a statistically significant predictor of self-regulation skills in young children.

Parenting style was shown to be a statistically significant predictor of teacher-measured self-regulation skills in young children, thus, the above hypothesis is supported by the results of this study. Specifically, statistically significant predictive relationships were found between authoritative and permissive parenting styles and self-regulation skills in young children. Authoritative parenting style was found to be a statistically significant predictor of self-regulation skills ($\beta =-.229, p <.05$) with a negative $\beta$ indicating a negative change in the value of self-regulation skills with an increase in the value of authoritative parenting style. This relationship can be clarified by stating that the results of this study suggest that higher scores on measures of authoritative parenting style can be found in the self-regulation group with the lowest numerical dummy code (Group 1) which is the group characterized by “normal” patterns of self-regulation skills.
Thus, we can predict that parents who practice the authoritative parenting style are more likely to have children in Group 1, children who demonstrate intact self-regulation skills. These findings support Baumrind’s studies (1967, 1971, 1978, 1991) which collectively indicated that authoritative parenting style, characterized by (1) demonstrations of expectations of mature behavior from the child and clear limit setting; (2) demonstrations of firm enforcement of rules and standards, using commands and sanctions when necessary; and (3) encouragement of child’s independence and individuality in the context of warmth and open communication, was the most desirable as it tended to result in more positive outcomes for children. Findings of this study are also consistent with subsequent researchers in the field of parenting style who have demonstrated that authoritative parenting results in children who are more content, realistic self-reliant and competent (Acock & Demo, 1994; Goddard & Lee, 1993; Smetana, 1993; Stafford & Bayer, 1993).

As noted in Chapter IV, the results of this study also indicate that authoritative parenting style was negatively correlated with both authoritarian ($r = -.249, p<.05$) and permissive parenting styles ($r = -.206, p <.05$). These statistically significant correlations indicate that there exists an inverse relationship between authoritative and authoritarian parenting styles and authoritative and permissive parenting styles with higher scores on one variable associated with lower scores on the second variable. A statistically significant positive correlation was indicated between authoritative parenting style and level of organization in the home ($r +.605, p<.05$), suggesting that a high score on authoritative parenting style is associated with a high score on level of organization in the home.
Permissive parenting style was also found to be a statistically significant predictor of self-regulation skills in young children ($\beta = .231, p < .05$). The positive $\beta$ characterizes the predictive relationship between permissive parenting style and self-regulation skills and indicates a positive change in the value of self-regulation skills when the value of permissive parenting style increases. This relationship can be more clearly indicated by stating that higher scores on measures of permissive parenting style can be found in the self-regulation group with the highest numerical dummy code, Group 2, which is the group characterized by weaknesses in self-regulation skills. Thus, one can predict that caretakers who score higher on measures of permissive parenting tend to have children who fall in Group 2, exhibiting self-regulation difficulties. This finding is also consistent with Baumrind's studies, (1967, 1971, 1978, 1991) indicating that permissive parenting style, characterized by (1) a tolerant, accepting attitude towards a child's impulses; (2) use of little punishment and avoidance of assertive authority, controls and restrictions; (3) few demands for mature behavior; (4) permission for children to regulate their own behavior and make their own decisions; and (5) few rules governing the child's time schedule, resulted in poor child outcomes. Baumrind (1967, 1971) suggests that children of permissive parents tended to be immature and lack social responsibility and independence.

As noted in Chapter IV, results of this study also indicate that permissive parenting style has been negatively correlated with authoritative ($r = -.206, p < .05$) and authoritarian ($r = -.476, p < .05$) parenting styles as well as levels of organization ($r = -.299, p < .05$) and control ($r = -.237, p < .05$) in the home. These statistically significant correlations indicate that a higher scores on permissive parenting is associated
with lower scores on measures of authoritative and authoritarian parenting as well as on levels of organization and control in the home. Similarly, these relationships suggest that lower scores on measures of permissive parenting result in higher scores on measures of authoritative and authoritarian parenting as well as on measures of levels of organization and control in the home.

Hypothesis (2)

The family characteristics of level of control and level of organization reported in the home will be statistically significant predictors of self-regulation skills in young children.

Levels of control and organization reported in the home were not found to be statistically significant predictors of teacher-measured self-regulation skills in young children according to multiple regression analysis, thus, this hypothesis was not supported by the results of the current study. This finding is not consistent with Salvador Minuchin's (1971) studies indicating young children who came from disorganized and unpredictable home environments are less curious and less apt to explore their environments, thus, allowing for fewer opportunities for practicing control over their environment, an important step in the development of self-regulation skills. Findings are also inconsistent with Bronson (2000) postulation that a lack of order and predictability in the environment leads to the development of the cognitive processes necessary for generation of effective self-regulation skills. Current findings are more in keeping with Barkley and colleagues (1998) who argue that poor self-regulation skills, sometimes diagnosed as attention deficit hyperactivity disorder, has it's etiology in the chemical and
structural functioning of the brain rather than in the child’s environment. Nevertheless, as noted in Chapter IV, while a predictive relationship between level of organization and level of control in the home and self-regulation skills was not reflected in the results, a negative correlation ($r = -0.377, p < 0.05$) was found between the level of organization found in the home and teacher-measures of self-regulation skills in young children. This relationship suggests that either (1) that homes who report low scores on measures of organization tend to have children who would fall in Group 2, demonstrating weak self-regulation skills, or (2) homes that report higher levels of organization in the home tend to have children who would fall in Group 1, demonstrating “normal” self-regulation skills. While correlation is not causation, there are several possible explanations for this relationship: (1) families of children with poor/better self-regulation skills find it more difficult/easier to implement good organizational skills with their children as their children may be less/more receptive to adopting and/or conforming to those behaviors due to their self-regulation weaknesses/strengths, or (2) families who report lower/higher scores on level of organization in the home may/may not maintain a home environment which is contributing to the child’s poor self-regulation skills by (not) providing the organization and predictability suggested as necessary for opportunities for exploration of the environment leading to development of better self-regulation skills (Minuchin, 1971; Bronson, 2000).

Hypothesis (3)

Race, gender and socioeconomic status (SES) of the child will be a statistically significant predictor of self-regulation skills in young children.
This hypothesis was not supported by the results of the current study, as the variables of race, gender and SES were not entered into the logistical regression model. Race, gender and SES were analyzed using bivariate correlation to determine if a statistically significant relationship existed between the demographic variables and the independent variable. Using this analysis, race was found to be negatively correlated ($r=-.26, p<.05$) with the level of control reported in the home. This relationship suggests that an increase in the measure or value of level of control was associated with lower “dummy” codes assigned to racial categories. That is, this relationship would suggest that increased levels of control are more likely to be reported in the Hispanic and African-American populations that in the Caucasian population. This tentative finding is neither supported nor negated in current research and may warrant more comprehensive research into the cultural patterns of child-rearing and home environment.

Despite earlier indications in the research indicating that lower socioeconomic status may be associated with higher rates of attention deficit hyperactivity disorder (Campbell, 1982; Szatmari et al., 1989), results of the current study finds no relationship between SES and self-regulation skill in young children. This finding could be an artifact of this particular study as it does not appear that the sample population provided an appropriate range of levels of maternal education with 84% of respondents reporting completed levels of education from 11th grade through the second year of college. Thus, a diverse sample population, with regard to SES, was not available in this study.

Figure 3 offers an illustration of the findings of the logistical regression analysis conducted in this study.
Limitations of the Study

When drawing any conclusions about the results of this study, one must first consider the limitations. First and foremost, one must consider the small sample size of this study. As stated earlier, using Cohen and Cohen's (1983) guidelines, the ratio of cases to variables should be 10:1. In this study, the demographic variables of gender, race and SES had to be excluded from the logistic regression model in order to satisfy this assumption, rendering the case to variable ratio 13:1. Therefore, the small numbers of the sample population limited the number of variables analyzed in this study. Furthermore, given the small numbers, one is cautioned from making definitive statements regarding the real contributions of the variables.

Another methodological limitation is that the design of the study was correlational, therefore, no causation can be determined or implied. This study can only suggest that certain relationships exist between the independent and dependent variables but cannot determine the nature, order or direction of these relationships. Furthermore, it is likely that all relevant variables may not have been included in this study. Others that may serve as significant mediators in the development of self-regulation skills in young children include age of parent, cognitive ability of the child, early temperament of the child, parental mental health, and family history of trauma or psychiatric illness.

With regard to the measurement of the independent variables, one must consider the possibility of response bias. All responses were obtained from the sole perspective of the primary caretaker and did not include other perspectives such as the father. Furthermore, various questions on both the Parental Authority Questionnaire (PAQ) and the Family Environment Scale (FES) appeared vulnerable to response bias by posing
questions which had the potential to elicit responses that were socially desirable. Caretakers may have provided responses which reflected their beliefs rather than their practices or responses which they felt would suggest that they were “good” instead of “bad” parents. A more desirable approach would have been to gather multiple perspectives (the father’s, the child’s or a home observation) on parenting practices and levels of organization and control in the home.

Another limitation of this study regarding the measurement of the independent variables suggests that other factors may have been at play in the interviews with Group 2, the clinical group, as suggested by the variability and heterogeneity of the response patterns. Specifically, when looking at the variance in the response patterns for Group 2, one may question whether respondents fully comprehended the questions, some of which were grammatically and syntactically complex.

Finally, when interpreting this study, one must recall and consider that the nature of parent-child relationships can be reciprocal and that the parental style may be in response to a child’s behavioral difficulties. Similarly, one must consider the effect of a child’s misbehavior on the home environment, noting that a difficult child may generate a great deal of ongoing stress in the family.

**Implications for Parents**

This section offers implications for parents of young children. The findings of this study support earlier research and theories set forth in the field of child development that parental behavior is, in fact, linked to child outcome. Specifically, the findings of this study are consistent with beliefs that parental behavior characterized by the dimensions of warmth and nurturance, structure and limit setting and a steady and open line of
communication results in children who tend to be more competent in their ability to regulate their behavior, attention and emotions. This implies that young children benefit from an environment that reflects reasonable control, including rules and consequences when the rules are violated, as well as the opportunity to make choices and voice their opinions about these rules. Parents should understand that offering children choices within a limited and safe context is not synonymous with permissive parenting. In fact, the findings of this study suggest that permissive parenting, characterized by a lack of structure and control, with the children making all their own choices, is associated with deficits in a child’s ability to regulate their behavior, attention and emotions. Overall, it would appear that extremes of control and structure (authoritarian style or permissive style) are not necessarily desirable and that the most effective parenting strikes a compromise between control and permissiveness within a warm and nurturing environment.

Implications for Schools

This study cannot ignore the fact that the typical two-parent, mom-at-home family profile no longer represents the majority of families in America today. The US Census Bureau (2000) and the National Center for Community Education (1999) reports that 78% of mothers with 6-13 year olds work full time and that 88% of the children whose mothers work full-time regularly receive care from a non-parent in the form of childcare or early education. In fact, recent trends in enrollment rates provided by the U.S. Census Bureau (2000) show that approximately a third of all 3-4 year old children are enrolled in preschool settings. Given these statistics, it would appear that an increasing number of young children are spending a large portion of their day outside of the home prior to their
entry into kindergarten. Furthermore, once these children reach school age, many spend the hours before and after school in non-parent supervised settings. Thus, the role of the parent as the “primary” caretaker is compromised by the many hours of the day that the young child is actually under the care and supervision of a non-parent, either in a school or daycare setting.

Given the findings of the current study, one could speculate that the same dimensions of parenting that result in more positive child outcomes, i.e., warmth and nurturance, structure and limit setting and a steady and open line of communication could apply to schools and daycare settings. Teachers and daycare providers should take note that children’s development is enhanced in environments in which there are clear behavioral expectations and predicable, consistent monitoring of expected behavior as well as opportunities for bonding with caring adults (Gottfredson, 1986).

The results of the current study also offer implications which speak to the social/emotional/behavioral curriculums in school settings. Schools are a major arena for social interaction and offer unique opportunities for development of positive child outcomes and intervention in early indications of behavior problems. School-wide approaches to enhance social-emotional and educational outcomes for children target critical resiliency resources as maximally supportive behavior management systems, increased opportunities for bonding between adults and peers, and mastery-oriented, highly motivating learning environments (Miller, Brehm & Whitehouse, 1998). Research has shown that schools that adopt such curriculums show small but consistent reductions in conduct problems and significant school-level and individual changes on student and
teacher survey measures and objective behavioral outcomes such as attendance, grades and suspensions (Gottfredson, 1986).

Finally, schools are also in the unique position of striving for regular contact with parents, thus, providing opportunities to address and support parenting practices. School staff often include counselors or social workers and school psychologists who are trained in family therapy, child/behavior management and teaching parenting skills and could seek to expand on their family-based services by offering workshops/seminars to parents and staff to promote positive child outcomes.

**Directions for Future Research**

The findings of this study support recent calls for the exploration of family and environmental variables to help explain the dramatic increase in the incidence of attentional problems in children (Kalb, 2000; Zito et al., 2000). Research aimed at understanding the nature of self-regulation and defining the contexts which support the development of effective self-regulation skills can lead to better parenting and family support programs as well as more accurate and effective diagnoses and treatments of children with behavioral problems. Future research in this area could and should lead to more comprehensive models of development of self-regulation skills by expanding the study of family process variables to include such factors as one-parent vs. two parent families, working vs. at home mothers, the impact of cultural belief systems, the presence of family support networks and levels or degrees of parental availability and/or involvement and incorporating those process variables with more static variables such as child temperament and genetic predisposition. A clearer understanding of how environmental factors interact with a child’s more fixed traits such as temperament,
genetic predisposition and cognitive abilities would provide invaluable information on
the nature and development of mental health in children- a most critical and controversial
issue at this time. Longitudinal studies looking at parental behavior and child outcome
over a period of time would help to answer questions regarding the stability of parenting
style, the direction of the relationship between parenting behavior and child behavior, the
long term effects of parenting behavior and overall child outcome.

Finally, addressing the methodological concern of small sample size by using a
large, nationally represented sample across race and SES would lead to more substantial
and reliable findings from which to base future recommendations. Addressing concerns
regarding whether respondents fully comprehend questionnaire items could be addressed
in future studies by gathering data on the number of repetitions and requests for
clarification accompanying each item. This information could lead to more in-depth
findings the actual differences in groups of parents with regard to linguistic and cognitive
abilities.
APPENDIX A

THE ACHENBACH CHILD BEHAVIOR CHECKLIST-TEACHER’S REPORT FORM
TEACHER’S REPORT FORM FOR AGES 5–18

Please Print

Your answers will be used to compare the pupil with other pupils whose teachers have completed similar forms. The information from this form will also be used for comparison with other information about this pupil. Please answer as well as you can, even if you lack full information. Scores on individual items will be combined to identify general patterns of behavior. Feel free to print additional comments beside each item and in the spaces provided on page 2.

PUPIL’S FULL NAME

PUPIL’S SEX

_ Boy, _ Girl

PUPIL’S AGE

ETHNIC GROUP OR RACE

TODAY’S DATE

PUPIL’S BIRTHDATE (if known)

Mo. Date Yr.

Mo. Date Yr.

GRADE IN SCHOOL

NAME AND ADDRESS OF SCHOOL

PARENTS’ USUAL TYPE OF WORK, even if not working now (Please be as specific as you can—for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)

FATHER’S TYPE OF WORK

MOTHER’S TYPE OF WORK

THIS FORM FILLED OUT BY:

□ Teacher (full name)
□ Counselor (full name)
□ Other (specify position & give full name)

I. For how many months have you known this pupil? ________ months


III. How much time does he/she spend in your class or service per week?

IV. What kind of class or service is it? (Please be specific, e.g., regular 5th grade, 7th grade math, learning disabled, counseling, etc.)

V. Has he/she ever been referred for special class placement, services, or tutoring?

□ Don’t Know 0. □ No 1. □ Yes—what kind and when?

VI. Has he/she repeated any grades?

□ Don’t Know 0. □ No 1. □ Yes—grades and reasons

VII. Current school performance—list academic subjects and check box that indicates pupil’s performance for each subject:

<table>
<thead>
<tr>
<th>Academic subject</th>
<th>1. Far below grade</th>
<th>2. Somewhat below grade</th>
<th>3. At grade level</th>
<th>4. Somewhat above grade</th>
<th>5. Far above grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
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<td></td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

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Burlington, VT 05401

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4-95 Edition

PAGE 1
APPENDIX B

THE FAMILY ENVIRONMENT SCALE
Family Environment Scale-Form R (circle one)

1. Activities in our family are pretty carefully planned. T or F
2. Family members are rarely ordered around. T or F
3. We are generally very neat and orderly. T or F
4. There are very few rules to follow in our family. T or F
5. It’s often hard to find things when you need them in our family. T or F
6. There is one family member who makes most of the decisions. T or F
7. Being on time is very important in our family. T or F
8. There are set ways of doing things at home. T or F
9. People change their minds often in our family. T or F
10. There is a strong emphasis on following rules in our family. T or F
11. Family members make sure their rooms are neat. T or F
12. Everyone has equal say in family decisions. T or F
13. Each person’s duties are clearly defined in our family. T or F
14. We can do whatever we want to in our family. T or F
15. Money is not handled very carefully in our family. T or F
16. Rules are pretty flexible in our household. T or F
17. Dishes are usually done immediately after eating. T or F
18. You can’t get away with much in our family. T or F
APPENDIX C

PARENTAL AUTHORITY QUESTIONNAIRE
For each of the following statements, please circle the number on the 5-point scale that best indicates how that statement applies to you and your approach to parenting. Try to read and think about each statement as it pertains to the way you parent your children at home. Again, your responses are totally anonymous. There are no right or wrong answers so be as honest and accurate as you can. Also, try not to spend a lot of time on any of them—we are looking for your overall impression regarding each statement.

Please be sure not to omit any items.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

1. I felt that in a well-run home, the children should have their way in the family as often as the parents do.  
2. As my children are growing up, even if they don’t argue with me, I felt that it is for their own good if they are forced to conform to what I think is right.  
3. As they are growing up, whenever I tell my children to do something, I expect them to do it immediately without asking any questions.  
4. As my children are growing up, once family policy has been established, I discuss the reasoning behind the policy with the children in the family.  
5. I always encourage verbal give-and-take whenever one of my children feels the family rules and restrictions are unreasonable.  
6. I fell that what children need is to be free to make up their own minds and to do what they want to do even if this does not agree with what their parents might want.  
7. As my children are growing up, I do not allow them to question any decision that I make.  
8. As my children are growing up, I direct their activities and decisions through reasoning and dialogue.  
9. I always fee that more force should be used by parents in order to get their children to behave the way they are supposed to.
<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>As my children are growing up, I do not feel that they need to obey rules and regulations of behavior simply because somebody of authority had established them.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>As my children are growing up, they know what I expect of them in the family but they also feel free to discuss those expectations with me when they feel that they are unreasonable.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I feel that wise parents should teach their children early just who is boss in the family.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>As my children are growing up, I seldom give them expectations and guidelines for their behavior.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Most of the time as my children are growing up, I do what the children want when making family decisions.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>As my children are growing up, I consistently give them direction and guidance in rational and objective ways.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>As my children are growing up, I get very upset if any of them try to disagree with me.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>I feel that most problems in society would be solved if parents would not restrict their children’s activities, decisions, and desires as they are growing up.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>As my children are growing up, I let them know what behaviors I expect of them and if they don’t meet those expectations, I punish them.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>As my children are growing up, I allow them to decide most things for themselves without a lot of direction from me.</td>
<td>1 2 3 4 5</td>
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<td>20.</td>
<td>As my children are growing up, I take their opinions into consideration when making family decisions but I will not decide for something simply because the children want it.</td>
<td>1 2 3 4 5</td>
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</table>
21. I do not view myself as responsible for directing and guiding the behavior of my children as they are growing up. 1 2 3 4 5

22. I have clear standards of behavior for the children in our home as they are growing up, but I am willing to adjust those standards to the needs of each of the individual children in the family. 1 2 3 4 5

23. I give directions for my children’s behavior and activities as they are growing up and I expect them to follow my direction, but I always am willing to listen to their concerns and to discuss that direction with them. 1 2 3 4 5

24. As my children are growing up, I allow them to form their own point of view on family matters and I generally allow them to decide for themselves what they are going to do. 1 2 3 4 5

25. I always feel that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don’t do what they are supposed to as they are growing up. 1 2 3 4 5

26. As my children are growing up, I often tell them exactly what I want them to do and how I expect them to do it. 1 2 3 4 5

27. As my children are growing up, I give them clear direction for their behaviors and activities but I am also understanding when they disagree with me. 1 2 3 4 5

28. As my children are growing up, I do not direct their behaviors, activities and desires. 1 2 3 4 5

29. As my children are growing up, they know what I expect of them in the family and I insist that they conform to those expectations simply out of respect for my authority. 1 2 3 4 5

30. As my children are growing up, if I make a decision in the family that hurt one of my children, I am willing to discuss that decision with that child and to admit it if I made a mistake. 1 2 3 4 5
Demographic Information

Date of Birth of Kindergarten Child: (month/day/year):

Gender of Kindergarten Child: (circle one) Male/Female

Race or Ethnicity of the Family: (circle one)
Caucasian  African-American  Hispanic  Other

Race or Ethnicity of the Kindergarten Child (if different than the family) (circle one):
Caucasian  African-American  Hispanic  Other

Last level of education completed (mother):

6-8th grade  ____

9-10th grade  ____

11-12th grade  ____

1-2 yrs. College  ____

3-4 yrs. College  ____

Post Graduate  ____


