

ABSTRACT

Title of Document:

KOREAN CHILD CARE CLASSROOM
PRACTICES AND CHILDREN'S STRESS
BEHAVIORS

Bodlemam Kim, Doctor of Philosophy, 2007

Directed By:

Professor Elisa Klein
Department of Human Development

The purpose of this study was to explore the relationship between classroom practices of child care and children's stress behaviors in Korea. The classification of the type of classroom is based on the Guidelines for Developmentally Appropriate Practices of the National Association for the Education of Young children (NAEYC, 1997), which defines classroom programs in terms of developmentally appropriate practices (DAP) and developmentally inappropriate practices (DIP), based on the way in which the program accounts for normative development, individual development, and cultural context.

Stress behavior was observed for 145 four-year-olds in 5 DAP and 5 DIP classrooms. To control the effect of overall quality of the classroom on stress behaviors, classrooms of high quality were selected, and then were classified into DAP and DIP classroom practices. Temperament and gender of the children and

parenting stress of mother were examined to understand their relationship to children's stress behaviors. Child and family variables were also controlled to clarify the independent effect of classroom practices on children's stress behaviors. To examine the relationship between each variable and children's stress behaviors, MANOVA and linear regression analyses were used. Hierarchical linear regression analyses were also used to verify the independent effects of classroom practices on children's stress behaviors after controlling child and family variables.

A significant relationship between classroom practices and children's stress behaviors was found, with more stress behaviors for children in DIP than children in DAP classrooms. Gender and temperament, and maternal parenting stress were also related to children's stress behaviors. Gender, parenting stress, and classroom practice were significant predictors of children's stress behaviors, and classroom practice added significantly to the prediction once other variables had been controlled. These results suggest that family variables, in addition to classroom practices, impact children's stress, implying that the effects of classroom practices should be examined in consideration of other variables outside school.

Most studies on DAP and children's development have explored the effects of DAP in isolation. The results of this study demonstrate the independent effects of several variables on children's stress behaviors. Future studies should expand on these findings and focus on the effects both of classrooms and of other variables outside school in theoretical framework of ecological theory.

KOREAN CHILD CARE CLASSROOM PRACTICES
AND CHILDREN'S STRESS BEHAVIORS

By

Bodlemam Kim

Dissertation submitted to the Faculty of the Graduate School of the
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Advisory Committee:

Professor Elisa Klein, Chair
Professor Charles Flatter
Professor Joan Lieber
Professor Brenda Jones Harden
Professor Christy Corbin

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CHAPTER I: INTRODUCTION

Young children begin their educational careers at increasingly earlier ages. It is now the norm for children to begin group educational experiences well before the age of five. Researchers have examined multiple aspects of the early experiences of young children in early education and care, as the entry point for emerging developmental processes connected to positive growth and learning. Recent trends in education give rise to concern about educational practices in the U.S., particularly as they relate to young children. The National Center for Educational Statistics (NCES; 2003a) reports that reading achievement of over half of fourth graders in urban districts is below a basic level. In the Program for International Student Assessment, a system of international assessments that measures 15-year-olds' reading and mathematical capabilities as well as scientific literacy, U.S. performance of mathematics was lower than the average for OECD countries (NCES, 2003b). Although the U.S. has spent considerable federal funds on K-12 public education since 1965, 17-year-olds' average reading scores have not increased since the 1970s (US Department of Education, 2005). The NCES (2003c) reported that in both reading and mathematics, most fourth-graders in public school perform below proficiency, with minority and disadvantaged students especially falling behind.

Reports such as these have fueled political concern about improving education. For example, in 2002, President Bush signed the *No Child Left Behind Act of 2001 (NCLB)*, with overwhelming bipartisan support. *NCLB* stresses accountability in education (US Department of Education, 2004). *NCLB* has put pressure on schools

to improve their students' academic achievement. Children's achievement in reading and mathematics must be measured from grade 3 through grade 8 (US Department of Education, 2007). Although these kinds of tests are not required for children below grade 3, testing pressure has led to a rise in expectations for the basic skills of younger children, even preschoolers (Maxwell & Clifford, 2004; Stipek, 2004).

In early childhood education, different theories have contributed different approaches to child development and learning. The trend in early childhood education, in some respects, is dichotomous; both child-centered and teacher-directed approaches have been advocated (Stipek, Feiler, Byler, Ryan, Milburn, & Salmon, 1998); and no one approach has been found to produce greater and longer lasting academic achievement overall. This issue of the appropriateness of particular types of academic experiences for children of preschool age has been widely debated.

Although some child development and early childhood education experts emphasize the benefit of early formal academic instruction, others argue that it might deprive preschool children of the opportunity for self-motivated learning and self-confidence and result in anxiety and tension (Rescorla, 1991; Stipek, & Byler, 2004). Under the current *NCLB* era of increased pressure to demonstrate increased performance, the emphasis on formal, academic focused approaches versus child-centered approaches again moves to the forefront of debate.

Early Education Practices in Korea

While a very different culture pervades Korean society, it is a society that places a high value on academic achievement, and parents have a strong desire for

children's education and academic success. These values have an effect on early childhood education. There has been a lot of use of academic-oriented, structured, and paper-and-pencil activities with preschoolers. This may be producing excessive stress and serve to deprive preschoolers of opportunities to reach their full potential (Hart, Burts, & Charlesworth, 1997).

Across Korea, educational programs developed for school-age children have been applied to the education of younger children. Different from the U.S., kindergarten is not a part of the public school system in Korea. As it is not a part of compulsory education, it totally depends on parents' decision about what program children attend. Most early childhood education programs including kindergarten in Korea are privately run, and may reflect parental demands and pressures in a direct and immediate way. Most Korean parents want their kindergarteners, even preschoolers, to learn and master the standard Korean curriculum of the first-grade, which includes letter identification or basic addition (Park, 2007). The length of many kindergartens has been extended to a full day, and most of them have introduced the curricula for first-graders, including worksheets and papers.

This pressure for academic achievement on very young children is a serious problem. Many parents and early childhood educators are placing excessive emphasis on rote learning and narrowly defined academic skills, regardless of children's current interests, needs, and competencies. Next-grade expectations are imposed on earlier grades. Thus, early childhood education in Korea has become education for readiness, that is, prior learning for elementary school curricula rather than appropriate education.

Cultural Influences on Education

Korea's extreme desire for educational success and emphasis on academic achievement can be explained by its cultural traditions and educational system.

Korean culture and its values have arisen from the philosophy of Confucianism. In particular, three main principles of Confucianism have influenced Korean early childhood education: hierarchical human relationship, collectivism, and an emphasis on academic achievement (Kwon, 2004).

Confucianism emphasizes loyalty and obedience to elders, and views people in a hierarchical order based on individual status which is determined by age, gender, and blood line. A person of high status has more power and authority. Lower status people have to obey those people of higher rank. Traditionally, Korean children have been taught to respect and obey their elders, including their parents and teachers. Therefore, Korean society has considered respects and obedience for teachers as a virtue, which has led to a teacher-directed classroom.

In Confucian culture, collectivism is emphasized more than individualism. McLean (1995) notes that collectivism emphasizes collective harmony and self-regulation rather than the individual rights emphasized by Western societies. The purpose of education can be different between the individualist and the collectivist society (Hofstede, 1997). In the individualist society, education provides the skills for 'modern man' as the aim of education is preparing the individual for a society of other individuals. On the other hand, the collectivist society emphasizes adaptation to the skills to be an acceptable group member, the products of tradition.

Finally, Confucian society places great value on academic learning and achievement. In the past, study to become a governor or scholar was a privilege reserved for the nobility. Even if a nobleman could not afford to take care of his own family, he was regarded as virtuous if he studied instead of earning money. There is an old Korean saying, “scholar-peasant-artisan-businessman,” implying the high status of study. Indeed, this tradition has been one of the reasons that Korea came lately to practical industrialization.

The educational system of Korea has also contributed to the academic-oriented practice of early education. All of the students are not guaranteed access to education up to the university level in the Korean educational system. A diploma from a high-ranked university, however, guarantees higher paying jobs and status. Therefore, competition for entry to the university, especially a high-ranked one, becomes extremely high.

Korea has a nationwide, once-a-year exam for entry to the university. As the entry exam is almost the only way to enter the university, all students in senior high school devote all of their time and effort to the exam. To prepare for this nationwide exam, students frequently take exams at school, and even elementary schools use competitive examinations. The pressure due to the emphasis on academic achievement and the competitive environment has been pushed down to the younger children, even preschoolers.

The pressure for children in the early years is clearly demonstrated in the use of extracurricular lessons outside of school. In a recent nationwide survey of 2,137 parents with young children (Lee, Chang, Chung, & Hong, 2002), over 86% of the

parents reported providing early educational extracurricular activities for their children at home or at an institute. Over half of children take more than two lessons outside school and the lessons are varied, such as Korean (reading and writing alphabets and letters), mathematics, English, piano, art, and so on.

The cost of extra lessons is a burden to most families. Lee and her colleagues (2002) reported that 77% of families feel the cost of children's education is a burden. About 47% of educational expenses are used for extra lessons, an 80 percent growth rate from 2000. Korea's excessive desire for education is not only a personal issue, but also a social and economic one.

Pressures for Academic Achievement and Stress in Early Childhood Education

Even the Committee on the Rights of the Child of the United Nations (UN) is concerned about the highly competitive nature of the educational system in Korea. In the reports on the implementation of the Convention on the Rights of the Child (2003), the Committee warned of the risks of the highly competitive educational system depriving children of the opportunity to reach their fullest potential. It also recommended that the educational policy of Korea should be reviewed with a view to reducing competitiveness and reflecting the purposes of education as stated by the Convention and Committee's General Comment.

Some professionals argue that formal academic instruction enables preschoolers to get an early start on school achievement through valuable enrichment experience. However, many professionals have been concerned about this increasing academic pressure on young children (Hart, et al., 1997). Experts have warned about elevations in stress symptoms due to increased academic pressure on young children

(Elkind, 2001). Burts and her colleagues suggested that the early use of workbooks, ditto sheets, and academic skill-based instruction could create stress for young children and make them at risk for later academic failure (Burts, Hart, Charlesworth, Fleege, Mosley, & Thomasson, 1992).

Indeed, many clinical cases of excessive stress have been reported in Korea. Woo (2002) reported that several children attending kindergarten in English (kindergarten where children are required to use only English with their native English speaker teachers) showed symptoms of aggressive behaviors, alopecia areata which is defined as “a disorder that causes sudden hair loss on the scalp and other regions of the body” (US National Institute of Arthritis and Musculoskeletal and Skin Diseases, 2003), or insomnia.

Elkind strongly condemned the risk of academic pressure on young children. Arguing that early academic experiences interfere with the young child’s self-directed learning, create guilt and anxiety, and hamper intrinsic motivation to explore, he criticized the downward extension of academic curricula to preschool children (Rescorla, 1991). Elkind (1986) argued that formal instruction of young children carries short-term and long-term psychological risks. The short-term risks derive from the stress. Formal instruction can put excessive demands on young children. In a broad sense, stress is coincident with life itself and demands adaptation. But, in a clinical sense, stress can be related to any excessive demand for adaptation. The early symptoms of stress can be fatigue, loss of appetite, and decreased efficiency, and gradually the symptoms can be extended to headaches, and stomachaches that might result in injury.

Formal instruction can put excessive demands on young children. This can be explained by the natural mode of learning of young children. Children do not learn through the narrow categories as defined by adults, such as reading, math, science, and so on. Although there are no sharp boundaries among subjects when children learn, formal instruction demands children to concentrate on a specific learning task. The pressure to learn focusing on any one area, such as letter identification, can be stressful for young children.

According to Elkind (1986), long-term risks of early formal instruction are motivational, intellectual, and social. As spontaneous learning of young children is self-directed, early childhood education should encourage children's self-directed learning by providing children with a rich environment to explore, manipulate, and discuss. If adults interfere in this self-directed learning, children's self-directed impulses can be repressed and then children learn to become dependent on adult's direction and not to trust their own initiative. This intervention of adults in a child's learning can also interfere with the process of reflective abstraction, which can put the child at intellectual risk. The final long-term effect of early formal instruction is a potential risk for social development. The notions of correctness and incorrectness, one aspect of formal instruction, introduces social comparisons to children, which may have a negative impact. Focusing on right and wrong directs children to look primarily to adults for approval and to social comparisons for self-appraisal. Children seem always to look for adult direction and approval of their activities. Lack of self-confidence and self-assurance can result. Children can be too dependent on others for their sense of self-worth in formal education.

On the other hand, in child-centered education children undertake activities on their own without looking for adult guidance, and the natural consequence of their own achievements is an increase in autonomy and sense of self worth (DeVries & Zan, 1994). Too much adult intervention might interfere with the self-directed learning of young children.

The current National Kindergarten Curriculum of Korea (2001) acknowledges the drawbacks of formal instruction, and emphasizes ‘whole child’ education. Since the first National Kindergarten Curriculum of 1969, this kindergarten curriculum has been revised five times. Although the curricula of earlier times emphasized the cognitive development of children, the current National Curriculum stresses the promotion of autonomy and creativity. The main focus is on ‘whole child’ education using a play oriented approach and integrated teaching, which is similar to a traditional child-centered program.

Concerned about academic-oriented and competitive educational practice, early childhood professionals in Korea have been stimulated by the series of position statements on developmentally appropriate practice issued by the National Association for the Education of Young children (NAEYC; Bredekemp, 1987). In the past several years, there has been research about developmentally appropriate practices. However, most of the studies have focused on the review of educational practices and teachers’ beliefs about it. There have been only a few studies on the relationship between developmentally appropriate practice and children’s development (Lee & Lee, 2003).

Curricular Influences

Parents as well as early childhood educators and professionals recognize that good quality early childhood education has many benefits; the critical issue is what constitutes good quality. Professional bodies such as the NAEYC and the Association for Childhood Education International (ACEI) have been providing the field with definitions of qualities of best practice in numerous position statements and papers (Ernest, 2001).

The 1987 NAEYC position paper on developmentally appropriate practices in early childhood education (and subsequent 1997 revision) became one of the most influential and widely disseminated educational documents in the field. The NAEYC had sold over a million copies of the guidelines (Van Horn & Ramey, 2004), and its principle, known as developmentally appropriate practice (DAP) has been the most prominent and controversial issue in early educational practice. The DAP principles provide a framework for delineating how early educational practice should consider the developing needs of young children within the cultural context of their lives when constructing curricula (Van Horn & Ramey, 2003).

Many early childhood professionals have warned against highly academic early childhood programs. Academic formal instruction, developmentally inappropriate practice (DIP), emphasizes didactic and teacher-directed approaches, ignores children's desire to learn and self-confidence, and finally deprives children of opportunities to reach their full potential (Stipek & Byler, 2004). The child-centered approach, developmentally appropriate practice (DAP), views children as active

knowledge constructors in the context of interactions with environments, and regards children as the primary source of the curriculum (Burts & Charlesworth, 1997).

The NAEYC's position statement on DAP has changed early childhood practice and policy, and has resulted in new investigations about best educational practice for young children (Raines & Johnston, 2003). Since the publication of DAP, many research studies have been accumulated to validate its appropriateness. Researchers have examined a number of variables, including teacher's beliefs, social-emotional development, academic benefits, and stress in DAP and DIP settings (Ernest, 2001). A number of studies support the efficacy of DAP, showing the positive effects of DAP on children's development (Charlesworth, 1998a; Dunn & Kontos, 1997; Project Construct National Center, 2001).

In particular, children who participated in DAP programs exhibited less stress behaviors than those who participated in DIP programs. Burts and her colleagues conducted a series of research studies demonstrating the relation between DAP classroom and children's stress behaviors (e.g. Burts, Hart, Charlesworth, & Kirk, 1990; Burts, et al., 1992; Hart, Burts, Durland, Charlesworth, DeWolf, & Fleege, 1998). In these studies, children who attended DIP programs exhibited stress behaviors to a significantly greater degree compared with children who attended DAP programs.

The DAP principles have been disseminated and adopted widely abroad as well as in the U.S., and Korea is no exception. Although academic focused directed practice is widely used in early education, there has been a heightened interest in the DAP framework and research on the effect of DAP. Early childhood professionals in

Korea are keenly interested in examining whether DAP classrooms have a positive effect on social-emotional as well as cognitive development.

Stress and Related Variables

The impact of stress on children's development is mediated by individual differences such as temperament and gender. First, temperament is one of the main factors determining children's vulnerability and ability to cope with stress (Compas, 1987; Jewett & Peterson, 2002; Trad & Greenblatt, 1990). Research shows that temperament, individual differences in behavioral style and reactivity, has been found to account for children's differential response to stress.

In addition to temperament, gender can mediate the effects of stress on children. Researchers have found that boys are more vulnerable to stress (Barton & Zeanah, 1990; Humphrey, 1998; Pryor-Brown, Cowen, Hightower, & Lotyczewski, 1986). Therefore, these individual differences are expected to modify the differential effects of various educational practices on children's stress.

Parenting stress has been found to be associated with a range of adverse outcomes for children including insecure attachment, behavior problems, and stress (Crnic, Gaze, & Hoffman, 2005; Crnic & Low, 2002; Jarvis & Creasy, 1991; Matthew, 2006; Pett, Vaughncole, & Wampold, 1994; Pianta & Egeland, 1990; Thompson, Merritt, Keith, Bennett, & Johndrown, 1993). Parenting stress can be one of the major factors in exploring the relationship between children's stress and related variables.

Child Care in Korea

In Korea, there has been a significant increase in the use of child care in recent years. As a result of the increase in working mothers, the change in family structure, and the isolation of the family, the functions of child caregiving, socialization, and education that used to belong in the family have given way to the increasing use of child care. Child care has become a social and no longer an individual issue.

Today, 48.7% of women are employed outside the home and 15.6% of them have children under 5 years of age (Korea Ministry of Gender Equality, 2002a). The employment rate for women graphs as an *M-shaped* curve, which shows peaks in 20's and 40's and a dramatic decrease in their 30's when women need to take care of their young children. This *M-shaped* curve is explained as a result of a lack of child care programs and the absence of any remedial policy (Korea Ministry of Gender Equality, 2002b; 2003).

From an absolute lack of child care programs, child care policy has been focusing on the expansion of programs, and as a result, there has been a significant increase in child care over the last decade. In the 10 years from 1990 and 2004, child care programs have increased by more than 10 fold (Korea Ministry of Gender Equality, 2004a). In 2004, 25,319 facilities provided care to a million children, compared to 1,919 facilities and 48,000 children in 1990.

Since the first child care center was established by a religious institution in 1921, child care in Korea has grown based on the individual needs of parents. Federal programs related to child care were enacted and revised several times, and there were

some tentative moves toward addressing the problem. However, there was no effective policy, regulation, or legislation until the establishment of the *Child Care Act* of 1991.

As the importance of child care has become a social issue due to the increase in the number of working mothers and changes in social structure, political concern about responsibility for child care has risen. Under the *Child Care Act*, child care became the responsibility of the Ministry of Health and Welfare, which brings more of an effective and centralized system, comparing to diffused jurisdictions in the past. The government began to license various types of child care facilities, such as public, private, workplace, and family-care facilities. The government also subsidizes child care costs for low-income families.

Since the enactment of the *Child Care Act*, the government has continuously increased the availability of child care, and in 1995 the *3-year special development plan for child care facility* was initiated. For the 3 years from 1995 and 1997, about 10,000 new facilities opened, a 250 percent growth rate. However, the dramatic increase in the use of child care has given rise to concern about the quality of programs in recent years.

Welfare and education for children in Korea are provided by two systems, child care programs and kindergarten. Kindergarten provides education to children aged 3 to 5 under the jurisdiction of the Ministry of Education and Human Resources Development. On the other hand, the child care program is designed to protect and educate infants and children aged 0 to 5 under the auspices of the Ministry of Health and Welfare. Different from kindergarten, the function of the child care program has

been focused on “protection” rather than “education”; thus far this has resulted in lower educational standards and caregiver qualifications for child care program.

In 1998, the government made one of its goals to improve the quality of child care policy and service. To that end, it has expanded the availability of public child care and increased licensing of facilities, while also strengthening facility permits, establishment standards, and qualifications for child care providers in order to improve the quality of service. A system to accredit child care program has also been developing. The process of this voluntary accreditation includes self-study, external peer review, and a national recognition decision. The purpose of the accreditation is not only to identify high quality programs but also to provide programs with opportunity to review and improve the quality of their own programs.

The *Child Care Act* was reenacted in January of 2005. In addition, because of the recognition that child care affects family welfare and the status of women in the workplace, child care became an agency of the Ministry of Gender Equality since June of 2004.

Given the many changes and experiments with child care policy and the new greater interest in quality as well as quantity, there has been a heightened interest in research on the effect of different child care approaches on children.

Rationale and Research Questions

As shown above, in Korea as well as in the U.S., academically focused directed practice in early childhood education has prevailed in recent years. Many educational professionals are concerned about the increasing emphasis on academic

instruction and the downward extension of academic curricula to preschool children, which may produce stress for young children.

The DAP guidelines of the NAEYC were published in response to this increasing concern about highly academic educational practice for young children. The growing body of research on DAP in the U.S. demonstrates positive relationship between DAP and children's development.

The purpose of this study was to explore the relationship between classroom practices and children's stress behaviors in the child care centers of Korea. Children's stress behaviors were observed in two different practices of child care classrooms, developmentally appropriate (DAP) and developmentally inappropriate (DIP). Child and family variables found to be related to children's stress were also examined, including children's gender and temperament and maternal parenting stress.

The overarching question of this study was whether young children's stress behaviors were related to early childhood classroom practices. Specific questions and hypotheses guiding the research were as follows.

- 1 . Do child care classroom practices have an influence on children's stress behaviors?

- 1 - 1 . Children in classrooms that reflect developmentally appropriate practices (DAP) will exhibit less stress behaviors than children in classrooms that reflect developmentally inappropriate practices (DIP).

- 1 - 2 . Children in classrooms that reflect developmentally inappropriate practices (DIP) will exhibit more stress behaviors than children in classrooms that reflect developmentally appropriate practices (DAP).

2 . Do child and family factors have an influence on children's stress behaviors?

2 - 1 . Boys will exhibit more stress behaviors than girls.

2 - 2 . Children's temperament will have an influence on children's stress behaviors.

2 - 3 . Parenting stress of mothers will be positively related to children's stress behaviors.

3 . Do child care classroom practices have an influence on children's stress behaviors after controlling child and family factors?

Definition of Terms

Child Care Center: Child care program in Korea is defined as a facility which provides a welfare service of caring and educating children under 6 years of age (the Child Care Act of Korea, 2005). In this research, public, workplace, and private child care programs are used. Public child care programs are set up and operated by state or government with more than 11 children, and workplace centers are established by an employer for employees of his company. A private child care program is a facility which has more than 21 children, run in private.

Classroom Practices:

1. Developmentally Appropriate Practice (DAP): the Guidelines for Developmentally Appropriate Practices of the National Association for the Education of Young children (NAEYC, 1997) defines classroom programs in terms of developmentally appropriate practices (DAP) and developmentally inappropriate practices (DIP), based on the way in which the program accounts for normative

development, individual development, and cultural context. DAP classrooms focus on the “whole child”, individualized programs to suit particular children, and integrated curricula (Kostelnik, Soderman, & Whiren, 2003). These programs also acknowledge the importance of child-initiated activity and play in learning, and emphasize flexible environment and parental involvement.

2. Developmentally Inappropriate Practice (DIP): DIP classrooms focus on limited aspects of child development and learning and teacher-centered activities (Kostelnik, et al., 2003; NAEYC, 1997). Children are expected to learn the same things in the same way and to learn mainly through listening or engaging in abstract activities with teacher directed and didactic strategies. Children have few chances to make a decision in the learning process in rigid environments. Parents are not considered as partners in DIP classrooms.

Stress: Various theories of stress can be classified into three types: stimulus-oriented theories, response-oriented theories, and interaction-oriented theories (Derogatis, 1982). In this research, three elements of these models are incorporated: classroom practices as potential stressors, observed stress behaviors as children's responses to those potential stressors, and children's gender and temperament, and parenting stress as child and family characteristics that may mediate or potentiate stress.

Temperament: In general, temperament has been defined as the individual differences in behavioral dispositions that occur early in life and are relatively stable. This research is based on a definition of temperament as “individual differences in reactivity style to reflect the physiological characteristics, and self-regulation” (Chon,

1991, p.80) and children's temperament is assessed in five factors: Adaptability, Activity, Physiological Rhythmicity, Reactivity, and Emotionality.

Parenting Stress: Parenting and its concurrent responsibilities generate high levels of stress. Parenting stress has been generally defined as the difficulty that arises from the demands of being a parent. Abidin (1995) defines parenting stress as the tension parents feel in fulfilling their parenting functions. This tension may depend on mothers' psychological well-being, children's characteristics, and contextual factors, and in result relate to children's development such as social competence and behavior problems in direct or indirect. Based on the definition of Abidin, this study explores the relationship between parenting stress and children's development.

CHAPTER II: LITERATURE REVIEW

In this chapter five areas of literature relevant to the design of this study will be reviewed. First, developmental theory and its implications for early childhood education will be discussed, focusing on constructivist theories as a theoretical framework for this study. Second, the research on developmentally appropriate practices (DAP) will be examined. This section will include an overview of the concepts of DAP and its origins as a statement of principles for professional practice, and a review of studies of differential effects of classroom practices on children's development. In the third section, the theoretical and conceptual framework for research on stress will be discussed. Child and family variables in stress, temperament and gender of child, parenting stress will also be reviewed. Fourth, past studies of the relationship between classroom practices and children's stress will be summarized. Finally, the fifth section will include a review of studies conducted in Korea about DAP and stress.

Theoretical Framework

Many different theories have contributed important views of child development and learning. A primary theory across many cultures during this century is constructivism. Constructivism, as represented by Piaget (1929; 1977) and Vygotsky (1978), provides a theoretical basis for differentiating classroom practices and exploring the relationship between classroom practices and children's stress behaviors in this study.

In general, researchers contemporary with Piaget viewed child development in two different ways: behaviorism and maturationism (Krogh, 1997). The latter view, with its philosophical roots in Rousseau, regarded children as having biological predetermined growth patterns who needed only a bit of skillful nurturing for development (Krogh, 1997). Behaviorism, rooted in Locke's empiricist views, on the other hand, stressed a combination of stimuli and responses under certain conditions. According to Watson, acquisition of certain behaviors as well as general development could be understood by focusing on how environmental stimuli gained control over the behavior of organisms (Crain, 2005; Lerner, 2002). Development was considered as the cumulative acquisition of objective and empirical stimulus-response relations. Watson's behaviorism was extended to the operant-learning theory of Skinner and Bandura's social-learning theory. In the behaviorist views, as a child is a passive recipient and environment takes full responsibility for development, development results totally from learning and environment provides input, which is absorbed, ready-made, by children (Berk & Winsler, 1995).

Piaget argued that each theory had something important to offer, acknowledging the role of environment or biology in children's development to some extent. However, he believed that children are not passive recipients of environmental stimuli, nor do they lack power over their biology (Piaget, 1929). Children interact actively with their environments and construct their own intellects. Piaget defined intelligence as a basic life process that helps an organism to adapt to its environment, and viewed children as constructivists who actively create new understandings of the world based on their own experiences (Shaffer, 2000).

One of the major contributions of Piaget is the delineation of developmental stages and the mechanism of development, which helps the child to move to increasingly complex ways of thinking (Piaget, 1929; 1977). Piaget proposed that all children progress through four stages of cognitive development: sensorimotor, preoperational, concrete operational, and formal operational. All children progress through these stages in an invariant developmental sequence, as each stage is qualitatively different, builds on the previous stage, and represents a more complex way of thinking.

For children to progress from one stage to another, Piaget (1954) viewed three developmental processes as crucial: assimilation, accommodation, and equilibration. Assimilation refers to the way in which children transform incoming information so that it fits their existing way of thinking. Accommodation refers to the means by which children adapt their current thinking to new experiences. Equilibration is a three-step process that requires balancing assimilation and accommodation. First, children are in a state of equilibrium in which they are satisfied with their mode of thought. Then they become aware of shortcomings in their current thinking, which leads to a state of disequilibrium. Finally, they adopt a more sophisticated thinking that eliminates the shortcomings of the old one, which creates a more advanced equilibrium. Through the process of equilibration, children integrate their particular pieces of knowledge of the world into a unified whole.

Piaget's theory has important implications for early childhood education. It has enormously contributed to our understanding of cognitive development, and provided the rationale for child-centered instruction. Young children are not expected

to think like adults, but expected to learn best by having hands-on educational experiences with familiar aspects of their environment. Children are actively engaged in constructing their understandings from their experiences and contribute to their own development and learning (Duckworth, 2006). Children need to be provided with an enriched environment and meaningful experiences to explore and interact for learning.

While Piaget's view accounts for a great deal of children's development, it cannot serve as a comprehensive account of development because it doesn't consider the knowledge and skills that depend on social interaction. Piaget's perspectives on the individual's independent construction of understanding are compensated by Vygotsky's theory that focuses the importance of social interaction in the development of culturally-determined forms of cognition.

Despite his short life, Vygotsky (1978) had a great influence and provided a useful complement to Piaget's work. While Piaget's theory focuses on the individual and what happens within it, Vygotsky stressed the social basis of mind. A basic premise of Vygotsky's theory is that all higher forms of mental activity are derived from social and cultural contexts and are shared by members of those contexts (Vygotsky, 1978). He focused on collaboration as a source of cognitive development. Children can learn to think and behave in ways that reflect their community's culture through cooperative dialogues with adults and peers. The distance between the actual developmental level under independent problem solving and the level of potential development under guidance or collaboration is called the zone of proximal

development (ZPD; Vygotsky, 1978), which is the dynamic zone of sensitivity in which learning and development occur.

Rogoff (1990) referred to the most effective type of social experience to stimulate children's cognitive growth as guided participation. It implies children's active involvement in culturally structured activities with the guidance, support, and challenge of companions who transmit various knowledge and skills. Wood and his collaborators introduced the term scaffolding to refer to the type of support from adults and the collaboration with more mature peers (Wood & Middleton, 1975).

The concepts of scaffolding and ZPD are associated with the Vygotskian view on the role of instruction and formal education in child development (Berk & Winsler, 1995). Vygotsky regarded education as leading development, as children actively construct new cognitive abilities and move to higher levels of understanding through collaboration and interaction with teachers, parents, and peers.

The underlying view of both Piaget's and Vygotsky's theory is that children actively construct their own knowledge. From the constructivist perspectives, teachers are responsible for setting up a suitable environment for learning and supporting children's interactions with it, rather than for taking charge in a direct or authoritarian mode (Krogh, 1997).

Both behaviorism and constructivism are still influential and applied to early education today (Goffin, 2001). Behaviorism leads to the traditional view of teaching as direct instruction with a carefully sequenced set of prescribed materials and goals. Constructivism leads to a more child-centered approach to provide children with opportunity for exploring their environment.

In early childhood education, both child-centered and teacher-directed approaches have been supported, and the issue of more appropriate approaches for young children has been widely debated. Recent trends of increased pressure for academic achievement and the emphasis on formal instruction in young children has resulted in increased use of formal academic instruction. Many educational professionals supporting child-centered approaches are concerned about these trends and the downward extension of academic pressure to young children, which may produce stress for them. Based on the child-centered approach, it is necessary to examine the negative effect of academic focused directed instruction on children's stress.

The NAEYC's position statement on DAP reflects the constructivist perspectives, mainly Piaget and Vygotsky (Bredekamp and Copple, 1997). This provides a theoretical basis for identifying classroom practices and exploring relationship between classroom practices and children's stress behaviors in this study.

Developmentally Appropriate and Inappropriate Practices

The NAEYC published its position papers on developmentally appropriate practice (DAP) in early childhood programs in 1986 and 1987 (Bredekamp, 1987). The papers were originally developed for the purpose of providing guidance to NAEYC's accreditation system, the National Academy of Early Childhood Programs. As "developmentally appropriate practice" was referenced in many parts of the accreditation criteria, it was necessary to establish a clearer definition. Moreover, several other trends contributed toward the necessity of a position paper on

developmentally appropriate practices, including the increased use of group care in early childhood and an emphasis by some teacher-directed instruction focused on academic skills development in young children.

In recent years, children have been enrolled in out-of-home care and education at younger ages, and the length of the program day has also been extended. Many early childhood educators and professionals have been concerned about the growing trend toward more formal and academic instruction of young children. There has been an increase in programs for young children which emphasize rote learning and whole-group instruction of academic skills. Also, many educators have been concerned about testing, placement, and retention practices (Elmore, 2004; Johnson & Johnson, 2002; Meisels, 2006). These readiness and screening practices reflect narrowly defined academic goals of primary-grade curricula, with next-grade expectations imposed on earlier grades.

Since the publication of the 1987 NAEYC document, developmental psychologists and early childhood educators have concurred with the importance of DAP in early education. Elkind (1989) argued that DAP is very meaningful because its educational philosophy is the totally opposite to the psychometric educational philosophy dominant in public schools. He noted that true education reform would come about only when the currently dominant psychometric educational psychology is replaced with a developmentally appropriate one.

Elkind (1989) noted four differences between developmental philosophy and psychometric philosophy as a foundation for education. First, the conception of the learner is different. While the learner is viewed as having developing mental abilities

within a developmental philosophy, the learner is seen as having measurable abilities within the psychometric position. Even though these opposing conceptions contain some truth, they have far different pedagogical implications. From a developmental point of view, the most important task for educators is matching curricula to the level of children's emerging mental abilities, that is, the principle of developmental appropriateness. On the other hand, from a psychometric perspective, the important task for educators is matching children with others of equal ability.

The second difference is conception of the learning process. From a developmental perspective, learning is always viewed as a creative activity and dependent of the content to be learned. By contrast, from the psychometric point of view, learning is controlled by a set of principles and consists of the acquisition of a set of skills that are independent of the content to be learned (Siegler & Alibali, 2005).

Third, developmental philosophy views knowledge as a construction (Siegler & Alibali, 2005), reflecting the joint contributions of the subject and the object. On the other hand, the psychometric perspective views knowledge as something that a child acquires and that can be measured independently from the processes of acquisition within the psychometric perspective.

Finally, based on the above characteristics, the aim of developmental education is to facilitate this development, and then to produce thinkers who are creative and critical. By contrast, the aim of psychometric education is to maximize the acquisition of quantifiable knowledge and skills, such as getting high score on achievement tests.

The guidelines outlined by NAEYC have become the most influential document guiding the field of early childhood education today, internationally as well as in the U.S. Researchers have continued to empirically examine the consequence of developmentally focused classroom practices, through a variety of comparisons of child outcomes in DAP and DIP settings.

Despite its widespread acceptance and dissemination, critics of DAP have raised some important questions over the past decade (Kostelnik, et al., 2003; Van Horn & Ramey, 2004). Criticism of the guidelines include questions related to cultural issues, the weak theoretical basis, and the limited and equivocal empirical evidence to validate the impact of DAP (Aldridge, 1992; Hsue & Aldridge, 1995; Smith, 1996; Walsh, 1991). In response to the criticisms, the changes within the 1997 revision reflected a more culturally appropriate and sensitive practice.

In the updated revision, Bredekamp and Copple (1997) suggested three dimensions for the concept of developmental appropriateness, that is, age, individual growth patterns, and cultural factors. Age helps establish reasonable expectations of what might be interesting, safe, achievable, and challenging for children to do. Age appropriateness involves considering what children are like within a general age-range, and developing activities, routines, and expectations that accommodate and compliment those characteristics (Kostelnik, et al., 2003). Individual and cultural appropriateness take into account each individual pattern and timing of growth, personality, learning styles, family background, and culture. Teachers are required to create curricula that match each child's developing abilities while also providing the

right level of challenge and interest, and respect for children or their family members by taking into account the social and cultural contexts in which they live.

Some researchers interpreted NAEYC guidelines for DAP as a continuum from extreme DIP to extreme DAP (Buchanan, Burts, Bidner, White, & Charlesworth, 1998; Hart, et al., 1997). On one extreme, the teacher of DIP classroom attempts to disseminate knowledge through lecture and whole-group activities, that is, more formal and direct-instructional means rather than facilitation. Thus, learning mainly occurs through workbook/worksheets or seatwork activities that must be completed by all children within a fixed time. In addition, the curriculum is not integrated across the traditional content areas through relevant and meaningful child hands-on activities, but divided into these domains. Little opportunity is allowed for children to move around the room, make choices, or actively explore the environment, and little attention is given to individual differences among children.

Hart and his colleagues (1997) identified important characteristics of DAP. In contrast with DIP, DAP classrooms encourage children to participate in activities according to their individual needs and learning styles. The course of activities is modified flexibly, always considering individual differences. The curriculum is also designed utilizing activities which are relevant and meaningful for children, and curriculum areas are integrated in the context of these activities. The environment provides children with opportunities for active exploration and concrete experiences. In addition, the teacher uses positive guidance, and children have opportunities for choice (Penney, 2003).

The concept of developmentally appropriate practices as created by NAEYC guided this study for identifying particular child care classroom practices. The classification of the type of classroom is based on the DAP guidelines which define classroom programs in terms of appropriate (DAP) and inappropriate (DIP) practices, based on the way in which the program accounts for normative development, individual development, and cultural context.

Past Research on Developmentally Appropriate Practices(DAP)

Research on DAP has dealt with teachers' beliefs about DAP and practices in early educational settings and its effect on children's development. In a study examining classroom and teacher characteristics (Buchanan, et al. 1998), teachers' beliefs and practices were predicted by teachers' characteristics such as certification, and classroom characteristics such as class size, grade level, number of children with disabilities, and number of children on free or reduced lunch. These predictors were also examined in a study by Maxwell and her colleagues (2001) of 69 kindergarten through 3rd grade classrooms. Classroom practices were predicted by teacher's belief in DAP and DIP, teacher characteristics (education level and years of experience), and classroom characteristics (grade, class size, and number of children with disabilities). Among all predictors, teacher education, grade, and beliefs accounted for most of the variance in observed classroom practices.

Stipek (2004) examined the nature of instruction in 314 kindergarten and 1st grade classrooms, serving relatively high proportions of low-income and African-American students. Classroom instruction was observed and a questionnaire about classroom population, teaching goals, and perceptions of the school was completed by

classroom teachers. Results indicated that observed classroom instruction was associated with children's demographic characteristics. Teachers perceived schools with a high proportion of low-income and African-American children to have more negative social climates, and used more didactic instruction than constructivist instruction in those schools. On the other hand, in classrooms with high proportions of Caucasian students, constructivist teaching prevailed. It appeared that teaching approaches were predicted by teachers' goals, the ethnic composition of the classroom and their perceptions about the families in their classroom to have challenges associated with poverty.

With increased interest on the success of DAP, there has been an accumulation of research that compares the effects of DAP and DIP curricula on a variety of factors. Researchers have mainly focused on the effects of DAP and DIP classroom experiences on a variety of children's developmental outcomes. Bryant, Burchinal, Lau, and Sparling (1994) examined the relationship between classroom quality regarding DAP and child outcomes among 145 Head Start children. Classroom quality was assessed through observation and teacher questionnaires about their knowledge and attitudes regarding DAP. Child outcomes on cognitive, language, and social development were measured by four standardized tests. Through interviews with the primary caregiver, demographic information on the family was obtained and the Home Screening Questionnaire was used for assessment of quality of the home environment. Results indicated that children in more DAP classrooms performed better on achievement and preacademic skills, regardless of the quality of their home environment.

To examine the effect of different approaches on preschool children's development and mastery of basic skills, Marcon (1999) compared 721 4-year-olds in classrooms based on three preschool curricula models: child-initiated classrooms (Model CI), academically directed classrooms (Model AD), and middle-of-the-road classroom (Model M). Model CI was composed of child-development-oriented teachers who facilitated learning by allowing children to direct the focus of their learning, and Model AD represented more academically oriented teachers who preferred more direct instruction and teacher-directed learning experiences for preschoolers. Findings showed that children in child-initiated classrooms demonstrated greater mastery of basic skills than children in the other two classrooms by the end of preschool. Children in Model M did significantly poorer on almost all measures compared to children in either Model CI or Model AD. Gender differences were reported; girls outperformed boys in all areas except gross motor development and play/leisure skills.

Marcon (1992; 2002) also found long-term effects of three preschool models. In an original study, 295 4-year-olds were randomly selected from three models and compared on social, motor, language, adaptive development, and mastery of basic skills. Results indicated differential effects of the three models on children's development. Children in classrooms where teachers held strong beliefs about early education (Model CI, AD) performed better on standardized measures than children whose teachers were torn between opposing models (Model M). Moreover, children in Model CI demonstrated the greatest mastery of basic skills. In a follow-up study (Marcon, 2002), these children were examined again in Year 5 and Year 6 through

report card grades, retention rates, and special education placement. By the end of children's 5th year in school, there were no differences among three preschool models in academic performance. By the end of their 6th year, however, children who had attended Model CI earned significantly higher grades than children who had been in Model AD. Child-initiated early learning experiences appear to improve children's later school success.

Schweinhart and his colleagues (1986; 1997) conducted a long range study to examine the effects of three different preschool programs on child development. Initially, 68 impoverished 3 and 4 year old children in Michigan were randomly assigned to three programs, the High/Scope model, the Distar model, and a model in the nursery school tradition. Data collection at age 15 included IQ tests, achievement tests, measures of functional competence, and self-report about delinquency and social behavior, and data collected at age 23 included interviews about literacy, irritation, and misconduct, school records of education, and arrest records. Results suggested a pattern of group differences in community behavior at age 15 and it became more pronounced at age 23; that is, the negative long-term effects of DIP were founded. At age 15 the Distar group showed higher rates of delinquent acts and property violence, and poor relations with their family. At age 23 this negative effect was supported by lower rates of high school graduation, higher arrests and acts of misconduct, and lower monthly incomes among adults who had participated in the Distar model.

Stipek, Feiler, Daniels, and Milburn (1995) compared 227 children of varying SES in child-centered preschools and kindergarten with children in didactic, highly

academic programs in terms of their basic skills achievement and a set of motivation variables. Classrooms were initially selected on the basis of previous observation, reputation, and conversations with directors. Three observation measures were subsequently used to identify program type. Several measures of motivation included perceptions of ability, expectations for success, dependence, pride in accomplishment, anxiety, and so on. Results indicated that children in didactic programs had negative outcomes on measures of motivation, regardless of age and SES. These results were replicated in a study by Stipek and her colleagues (1998) which examined 93 children's cognitive competencies and motivation.

Huffman and Speer (2000) examined the relationship between DAP and the academic achievements of kindergarten and 1st grade children. Findings indicated that children who were in DAP classrooms achieved higher scores for letter/word identification and applied problems and children's achievement were improved by DAP.

Burts and her colleagues (1993) explored the relationship between DAP in kindergarten and academic outcomes in first grade, including reading, language, spelling, math, science, and social studies. The interaction effects of SES and gender were also examined. Results demonstrated that children from DAP classrooms performed better on reading measures than children from DIP classrooms. Interaction effects indicated no significant differences between high and low SES children in DAP classrooms for overall average scores, while children with high SES were better than children with low SES in DIP classrooms. Thus, differential academic performance between high and low SES children were found in DIP classrooms,

while no such differences were found in DAP classrooms.

Frede and Barnett (1992) found that DAP in large-scale public preschool programs resulted in increased academic skills for disadvantaged first grade children. To measure implementation fidelity of the High/Scope curriculum, observations were conducted three times in the course of the 1st year. Measures of academic performance were administered at the beginning and end of the year.

Although not all findings are entirely supportive, many studies of DAP have found positive outcomes for children in academic, social, and behavioral domains. Most studies, however, have focused on cognitive or social development exclusively (e.g. Bryant, et al., 1994; Burts, et al., 1993; Frede & Barnett, 1992; Gelzheiser, Griesemer, Pruzek, & Meyers, 2000; Marcon, 1992). In this study, children's emotional development, especially stress, is explored.

Stress

Stress is an inevitable component of development. No child can grow up without stress; it is part of everyday life, and coincides with the achievement of developmental milestones from birth onward (Honig, 1986). Thus, all stress is not harmful and it can have a positive influence on development. For example, the struggle to learn to walk is stressful, but it also can be a challenge that compels a child to strive toward more mature forms of behavior.

In recent years, however, children have increased stress in their lives for many other reasons which are not always functional for development, and they experience more social and psychological problems than ever before (McNamara,

2000; O'Brien, 1988). To begin with, children are experiencing greater stress because their parents are also feeling a higher level of stress. There are rapid changes in society, more demands on the job and at home, and greater amounts of information. Keeping up or coping with this pace produces stress, and this type of stress filters down to children, although parents may try to shield them from it. Pressure to succeed also produces stress in children's lives. This competition may not necessarily be dysfunctional in certain components of everyday adult life, but children do not have the skills, abilities and experience to cope with much of this type of stress. Finally, fear and uncertainty can cause children stress in their lives. Children express a lot of personal concern about their environment, whether these fears are rational or irrational. Children in today's society are exposed to multiple stressors in and outside the home, which can interact with each other and their effects can be cumulative (Jewett, 1997, Weinreb, 1997). Rutter (1979) recommends eliminating stressors whenever possible.

Increasing pressures along with a general decline in coping skills and absence of social support have emerged worldwide and present a challenge to educators, policy-makers, and families (McNamara, 2000). Most school-age children are under various school related stressors such as tests, excessively demanding classroom work, failing grades, and peer relationship (Fallin, Wallinga, & Coleman, 2001). Stress becomes a part of even young children's lives.

Despite an increased interest in, and a considerable amount of literature on, the study of stress in children's lives, there seems to be little agreement on a concept of stress. Selye (1982) defined stress as "the nonspecific (that is, common) result of

any demand upon the body (p.7)". He emphasized that no single causal factor could be identified, because various different situations can interact to produce stress. Stress is also defined as two components: a stressor and the individual's response to that stressor (Blom, Cheney, & Snoddy, 1986). A stressor can be either an acute life event or a chronic situation that causes disequilibrium in the individual, and this disequilibrium can cause the person to respond to the stressor. Stress is produced when both a stressor and a response occur.

Stress can also be identified in terms of its source. Honig (1986) suggested two sources of stress for young children: internal and external sources. Internal sources come from within an individual and include hunger, shyness, headaches, or emotions such as anxiety, anger, jealousy, and guilt. External sources of stress originate outside a child such as abuse, divorce, moving, poor quality child care, or developmentally inappropriate classrooms (Marion, 2002).

Although many theoretical models have been used to conceptualize stress and its effects, none of these models clearly explains childhood stress (Fallin, et al., 2001). Most often, stress has been conceptualized along three dimensions: stimulus, response, and interaction (Derogatis, 1982; Lazarus & Forkman, 1984). Stimulus-oriented definitions and theories define stress as potentially residing within the stimulus properties of the organism's environment. They focus on events in the environment such as life events, natural disasters, internal and external noxious conditions, or illness, and focus measurement efforts on the characteristics of the individual's environment. Response-oriented definitions and theories define stress as the response of the individual to the events of the environment (e.g., Selye 1982). They tend to

direct psychological assessment toward measures of disorganized functioning. Finally, interactional perspectives emphasizing the relationship between the person and the environment, taking into account both characteristics of the person and the nature of the environmental event. From this perspective, the characteristics of the individual that serve to mediate responses to stress are important, as it is supposed that there is no objective way to predict psychological stress as a reaction without reference to properties of the person. They suppose a dynamic system in which reciprocal interactions occur between the individual's cognitive, perceptual, and emotional functions and the characteristics of the external environment, as not only does the individual mediate the impact of environmental stimulus events upon responses in a linear fashion, but also the characteristics of the individual can be a significant part of the environment. Thus, personality traits, coping styles, psychodynamic mechanisms of defense, as well as many other person variables, are all components to important variables to consider (Derogatis, 1982).

Stress-resistance or invulnerability seems to be supported by the interaction perspective. There are a lot of factors that have an effect on children's stress. Trad and Greenblatt (1990) suggested these factors fall into two categories: intrinsic to the child, such as temperament, age, gender, and competence, and extrinsic such as the family milieu and available social support. Barton and Zeanah (1990) also suggested that the impact of stress on preschool children is modified by individual differences, protective factors, and coping skills. Rutter (1979) suggested that there are wide variations in the responses of deprived or disadvantaged children, showing that even with the most terrible homes and stressful experiences, some children thrive, with

stable, healthy development. He suggested five mediating factors: multiplicity of stresses, changed circumstances, factors in the child (e.g., gender, temperament, genetic background), factors in the family (e.g., positive parental relationship, extended family), and factors outside the home (e.g., neighborhood, impact of the schooling). Compas (1987) also suggested three factors: child's disposition and constitutional characteristics (including temperament, self-esteem, internal locus of control, and autonomy), a supportive family environment, and a supportive individual or agency in the child's environment.

This study incorporates elements of these three models by including potential stressors, children's responses to those potential stressors, and child and family characteristics that can intervene or potentiate stress.

Stress and Related Variables

Researchers have been interested in individual differences as mediating factors that can modify the negative and harmful effects of stress on children (Honig, 1986; Kagan, 1988; Kagan, Reznick, & Snidman, 1987; Kagan, Snidman, McManis, & Woodward, 2001). Rutter (1988) called for further study of temperament to help determine its role in modifying children's reactions to stress. Trad and Greenblatt (1990) also identified temperament as a leading factor which may influence the ways in which a child copes with stress. Borrowing the classification of temperaments made by Thomas and Chess, they explained the role of temperament in a child's reaction to stress. A child of easy temperament seems to be curious and persistent in explorations positively, but a child of difficult temperament tends to show negative and irregular reaction. The negative effects of stress are more serious on children

whose temperament is slow-to-warm-up or difficult (Jewett & Karen, 2002). Children with lower thresholds for external and internal stimuli experience a wider variety of life events and conditions as negative stresses (Stansbury & Harris, 2000).

More notably, the relationship between temperament and stress has been studied, focusing on the stress responses of shy or inhibited children who tend to be at risk for experiencing physiological stress responses in strange situations or settings. As a measure of stress, cortisol, the primary glucocorticoid produced by a part of the human stress-response system, has been increasingly examined in recent studies of children's socioemotional development.

Kipp (1991) explored the relationship among reactivity, illness, and behavioral measures, and salivary cortisol level. There was a correlation between children's cortisol level and their parental assessment of temperament. Smider and colleagues (2002) examined the relation between salivary cortisol levels and socioemotional adjustment of 172 4-year-olds. Results indicated that higher cortisol levels were associated with more internalizing behavior and social wariness. Bruce and colleagues (2002) investigated the relationship between temperament of children and salivary cortisol levels at the beginning of the school year in 35 first graders. Findings indicated the effect of temperament on stress, showing that cortisol slope across the day was mediated by temperament of children. Van Bakel and Riksen-Walraven (2004) studied stress reactivity regarding to temperament, cognitive competence, and attachment security in 15-month-old infants. To assess infant's stress, salivary cortisol was obtained prior to and following a stressful event. Result showed higher cortisol reactivity in more anger-prone infants and in infants with

higher levels of cognitive development. Attachment security moderated the relation between cognitive level and cortisol reactivity.

Gender may be one of the primary variables associated with children's vulnerability and ability to cope with stress. Generally, stress seems to have a greater effect on boys than on girls. Boys are more vulnerable than girls to stress caused by both family conflict and preschool environment (Allen & Green, 1988; Barton & Zeanah, 1990; Honig, 1986; Humphrey, 1998). Many researchers have focused gender difference in various situations such as the birth of a sibling, parental divorce, child care, and parental discord or disharmony (Rutter, 1988).

Besides individual differences in stress as discussed above, family context such as parenting stress can also be associated with children's stress. Parenting stress has been defined in multiple ways. Major life event approaches have been used for exploring the relationship between parenting stress and problematic outcomes. Although they are useful to distinguish families at risk for negative outcomes, major life events are not frequent events and not specific to within-family processes (Crnic, et al., 2005).

A model of parenting daily hassles, proposed by Crnic and Greenberg (1990), conceptualizes parenting stress in a minor event perspective. It stresses the potential everyday frustrations and irritations accompanied by childrearing and children's behavior that is typical but often challenging. Although parenting daily hassles have been validated as a meaningful stress context for families and child outcomes, there have been few studies exploring the relationship between minor parenting daily hassles and child development (Crnic & Low, 2002).

Abidin's parenting stress model (1990) focuses on parental distress and child difficulties. The Parenting Stress Index (PSI; Abidin, 1995) has stimulated a wealth of studies, and has established the validity of addressing problematic situations within the family as stressful circumstance. Parenting stress is defined as the tension parents feel in performing their parenting functions (Abidin, 1995), and is conceptualized in multi-factorial view including characteristics of child, parent and context.

Studies of parenting stress have been focused on predicting factors of parenting stress or the behavioral and psychological outcomes of parenting stress in the U.S. Previous studies have shown that parenting stress is associated with a multitude of negative outcomes for children, such as behavioral problems and insecure attachment. The construct of parenting stress was originally developed for clinical use for high-risk families. Therefore, many studies on parenting stress have focused on children and families with problems such as chronic illness, homelessness, or clinical problems (Beck, et al., 2004; Danseco & holden, 1998; Friedman, et al., 2004; Goldberg et al., 1997; Mash & Johnston, 1990; Pianta & Egeland, 1990).

However, parenting stress is also prevalent among nonclinical families. In recent studies on daily parenting stress, even minor maternal stresses as well as greater stress related to the role of parenting significantly predicted child behavior problems (Crnic & Greenberg, 1990; Patterson, 1983). Anthony and her colleagues (2005) found the direct and independent relationship between parenting stress and children's behavior in preschool classroom. In longitudinal studies (Benzies, et al, 2004; Crnic, et al., 2005), parenting stress was found to be relatively stable and an important predictor of children's problematic behaviors.

Relationship between Classroom Practices and Children's Stress

Burts, Hart, Charlesworth and their colleagues have conducted a series of research studies examining the relationship between DAP classroom and children's stress behaviors. In these studies, children who attended DIP programs exhibited higher stress behaviors compared with children who attended DAP programs.

Burts and colleagues (1990) explored the relationship between appropriate/inappropriate practices and stress behaviors of kindergarten classrooms. Selection of classrooms was based on questionnaire scores and classroom observations. A teacher questionnaire assessing beliefs about developmentally appropriate practice was administered to 113 kindergarten teachers, and classrooms representing more and less developmentally appropriate settings were identified. To validate the questionnaire responses, a rating checklist (Checklist for Rating Developmentally Appropriate Practice: Burts, et al., 1990) was used to observe actual classroom practices. Two classrooms were thus identified for the focus of the study. The sample consisted of 37 kindergarten children, 17 children in a DIP and 20 children in a DAP classroom. Children's stress behaviors were observed using the Classroom Child Stress Behavior Instrument (CCSBI; Burts, et al., 1990). Analyses were focused on the differences in child stress behaviors and the differences in instructional activities between the two classroom settings. Results indicated that children in the DIP classroom exhibited significantly more stress behaviors than children in the DAP classroom. Activity in the two classrooms were different, that is, that DAP classroom had more child-selected center time, group story, and transitions, and less whole group and workbook/worksheet activities than the DIP classroom.

Burts and colleagues (1992) extended their prior research by exploring the interactive effects of race, SES, and sex with DAP/ DIP and the stress behaviors. For subject selection, the teacher questionnaire was distributed to 219 teachers, and 20 classrooms were selected on the basis of developmental appropriateness. To verify their questionnaire responses, teachers were observed using the checklist. Twelve classrooms were selected: 6 were DAP and 6 were DIP (204 children: 103 in DAP, and 101 in DIP). Results indicated that more overall stress was exhibited by children in DIP classrooms than by children in DAP classrooms. Boys in DIP classes displayed more stress behaviors than did boys in DAP classes, and black children with low SES exhibited more stress than did white children with low SES regardless of classroom type. For activity types, children with low SES participated in less center time and more workbook/worksheet activities. In DIP classrooms, the type of activity between white children and black children were different, but in DAP classrooms, there was no difference between races. More inappropriate classroom activities, such as waiting, teacher-directed small group, workbook/worksheet, and punishment were more frequent in DIP classrooms. In contrast, more appropriate activities such as music, group story, whole group, and center time activities were observed in DAP classrooms.

Hart and colleagues (1998) examined whether the results found in previous kindergarten stress studies would also be obtained in a study on preschoolers. The effect of classroom type (DAP/ DIP) on stress behaviors as moderated by SES and sex was investigated on 102 children. A slightly modified Teacher Beliefs Scale (Charlesworth, et al., 1993) was distributed to 10 teachers, and observations using

Checklist for Rating Developmentally Appropriate Practice (Charlesworth, et al., 1993) were conducted to validate teacher questionnaire data. Based on the scores on the two measures, 3 DAP and 3 DIP classrooms were selected. Interaction effects between classroom practices and SES were found for both activity types and total stress. In DIP classrooms, preschoolers with low SES were observed in more waiting, workbook/worksheet, small group, and television watching activities, but fewer transitions, whole group, music, group story, and center activities. In DAP classrooms there was no SES differences. For total stress, children with low SES in DIP classrooms displayed more stress behaviors than did children with high SES in DIP classes. But no differences between high and low SES appeared in DAP classes. As to classroom difference in activities, more waiting, workbook/worksheet, and television watching occurred in DIP classes, in contrast to DAP classes in which more transitions, music, group story, and center activities occurred.

These prior studies on the effect of classroom practices on children's stress did not consider the overall quality of classroom. The results might reflect the effect of overall classroom quality as well as classroom practices. Also, although many researchers have provided evidence on the relationship between stress response and child and family factors such as child temperament and parental stress (Abidin, Jenkins, & McGaughey, 1992; Webster-Stratton, 1990), there was no consideration of them in prior studies of stress in classroom settings. In this study, therefore, the classroom quality is controlled to assure the effect of classroom practices independent of the overall quality of classroom. In addition, child temperament and parenting stress are included as study variables.

Korean Research on Developmentally Appropriate Practices and Stress

Developmentally Appropriate Practices in Korea

Since the translation of Bredekamp's 1987 document was published in Korea in 1995, there has been a heightened interest in research on the DAP framework. However, research studies mainly have focused on teachers' beliefs about DAP and classroom practices. There have been a few studies examining the effect of DAP, including the relationship between DAP and children's development.

Initially, researchers conducted descriptive studies examining the common views and understandings of early childhood professionals and teachers about DAP (Koh, 1997; Lee, 1995); subsequently, the research focus moved to teachers' beliefs about DAP. In the studies to examine the relationship between teachers' beliefs and educational practices in kindergarten (Hwang & Nam, 2001; Im, 1998; Kang, 2000; Kim, 2003; Kim, et al., 2005; Lee & Im, 2001; 2002), teachers' beliefs about DAP, in general, had positive effects on developmentally appropriate practice in their classrooms. Regarding teachers' characteristics that predict their use of DAP, the educational level of the teacher and the years of experience that they had taught related to their beliefs and practices (Lee, 2002; Lee, 2003; Lee & Lee, 2003).

Kang (2000) explored the effect of teacher training for DAP. The changes of teachers' beliefs and program quality were assessed after their in-service training experiences based on DAP, and the relationship between the reliance on DAP and program quality was also investigated. Results showed a positive relationship between teachers' beliefs about the DAP and program quality. Teachers' beliefs were also improved after taking the DAP training, which influenced their actual

educational practices in classroom.

Han (2002) examined teacher's implementation of DAP and related variables to DAP instructional activities in 109 kindergarten classroom. Results showed that teacher's age, level of education, salary, training, and duration of teaching had positive effects on implementing DAP in kindergarten settings.

Korean Early Childhood Education and Children's Stress

Relatively little research has been conducted on children's stress in Korea, and there is no research exploring the relationship between classroom practices and children's stress. Some research explored the relationship between children's stress and other classroom or educational variables such as class size and the overall quality of center. An (1995) examined the relationship between the overall quality of child care centers and children's stress behaviors with 60 children from 1 high quality and 1 low quality program. Results indicated that children in high quality programs exhibited less stress behaviors than children in low quality programs. There was also a gender effect related to stress, indicating that boys showed more stress behaviors than girls regardless of classroom quality.

Lee (1994) explored the influence of class size on kindergartener's stress behaviors. From 3 classrooms selected based on class size, 105 kindergarten children were observed. Results indicated that the children in the smallest class showed less stress behaviors and that there was a significant relationship between class size and the types of activity that had an effect on children's stress.

Park and her colleagues (1998) examined children's stress behavior patterns in full-day and half-day kindergarten with respect to daily classroom activities,

different activity spaces, and activity domains. The subjects were 29 children in a full-day kindergarten and 20 children in a half-day kindergarten. Results showed a significant difference in frequency of children's stress behaviors among different activity types and domains as well as between full-day and half-day programs. Children in the full-day program exhibited more stress behaviors than children in half-day, and in large group activities and low mobility play children showed more stress behaviors.

Yang and Jung (1999) conducted a study to examine the effect of the home environment and child care overall quality on children's stress behaviors. The subjects were 438 children from 3 to 6 years of age at 7 child care centers. Home environment variables consisted of marital satisfaction, life stress, and parenting stress; the overall quality of the child care centers was assessed. Results found significant effects for overall quality of center, life stress, parenting stress, and marital satisfaction on children's stress behaviors. Children in low quality centers exhibited significantly more stress behaviors than children in high quality centers and children of mothers with high levels of parenting stress and life stress and low levels of marital satisfaction exhibited more stress behaviors. Children's stress behaviors were also different according to teacher's variables, such as education level and the years of experience that they had taught.

Summary

In response to increasing concern about highly academic educational practices for young children, NAEYC published the DAP guidelines. Over the past

decade, the growing body of research on DAP in the U.S. has demonstrated positive relationship between DAP and children's development, including academic, social, and behavioral areas. Stress, one of the most negative responses to academic pressure by children, has also been studied and results demonstrate that there is a reduction in children's stress behaviors in DAP classrooms.

Although academic focused directed practice in early education has prevailed nationally, and many educational professionals are concerned about stress for young children in Korea, there have been few studies about children's stress and educational practice. The purpose of this study is to extend and apply the work of DAP in the U.S. to Korean children.

CHAPTER III: METHODOLOGY

Research Design

The purpose of this study is to explore the relationship between classroom practices and children's stress behaviors in Korean child care centers. The study was composed of two parts. Phase One consisted of the selection of target classrooms based on evaluations of developmentally appropriate practices and classroom quality. Phase Two was composed of an investigation of children's stress behaviors in the selected DAP and DIP classrooms. In addition, the effects of gender and temperament of the child and maternal parenting stress on children's stress behaviors were also explored.

In the first phase of this study, DAP and DIP classrooms in child care centers were selected. The classification of classroom practices was based on the Guidelines for Developmentally Appropriate Practices of the NAEYC, which defines classroom programs in terms of appropriate practice (DAP) and inappropriate practice (DIP). To control the effect of overall classroom quality on stress behaviors, classrooms identified as high quality were selected, and then were classified into the two types of classroom practices. In the second phase, children's stress behaviors were observed in 5 DAP and 5 DIP classrooms. Temperament of the children was also examined in order to explore the effect of individual differences on children's stress behaviors. In addition, the role of certain components of children's life outside of school on stress behaviors was examined through exploring mothers' stress and asking mothers about extracurricular academic activities as potential sources of stress.

Phase One: Classroom Selection

Seoul, the capital of Korea, and its suburban area occupies only 11% of the geographic land mass of the country, but contains over 40% of the population (Korea National Statistical Office, 2005). The federal government and all home offices of major companies are located in Seoul. Thus, Seoul is not only home to all of the policies and organizations associated with child care, but also to the bulk of the child care programs.

Of a total of sixteen districts, 48% of all child care programs are in Seoul and Gyeonggi-Do, one of the suburban areas of Seoul (Korea Ministry of Gender Equality, 2006). Most studies have focused on these two districts, and so they will be included in this study.

There are several kinds of child care programs in Korea. Two major types are child care centers and family day care. Family day care accounts for 40% of child care and is widely being used (Korea Ministry of Gender Equality, 2006). However, it is private and small scale, averaging 10 children per program (Korea Ministry of Gender Equality, 2004). For those reasons family day care was excluded from this study. University research affiliated child care was also excluded due to its specific characteristics. Such centers are operated by departments of early childhood education for the purposes of research. These specific traits might contaminate the result of the study and moreover, their results cannot be generalized.

Among the remaining child care centers in Seoul and Gyeonggi-Do, 22 centers were contacted by telephone about participation in this study. For identifying these centers, several sources were used: (1) lists of centers which had registered with

the Child Care Information Center (CCIC); (2) lists of centers which were members of the Korea Association of Child Care and Education (KACCE) or Korea Association for Childhood Education International (KACEI); (3) lists of centers where student teachers of local major universities were placed; (4) expert reputation about high quality centers, obtained by canvassing university professors of early childhood education.

These four sources were used because they increased the probability of identifying high quality centers. In the first two lists, information centers and associations provided useful information and updated data about child care. As high quality centers usually keep trying to get new information and improve the quality of their centers, they are more likely to register with those kinds of organizations. As for the third source, field placement, student teachers are usually placed in above average quality centers or cooperative centers. Finally, expert reputation can be the easiest and the most effective way to find high quality centers because university professors usually have a list of centers that are eligible and cooperative to research.

An overview of the proposed study was sent to the director of 16 centers expressing an interest in participation, of the 22 centers contacted by telephone. After getting agreement to participate, one 4-year-old classroom in each of 16 centers was assessed to select target classrooms.

The focus of this research was on 4-year-old children, since this study arose from the debate about early academic pressure and consequent stress on preschool children, and it is more likely that an academically focused curriculum will be used at this age. The study focused on the differential effect of classroom practices, which

might be contaminated by the overall quality of classroom. By limiting target classrooms to high quality, the effect of overall quality was controlled in the study.

Measures used in Phase One

To select target classrooms, two instruments, the Early Childhood Environment Rating Scale-Revised (ECERS-R; Harms, Clifford, & Cryer, 1998: see Appendix A) and the Classroom Practices Inventory (CPI; Hyson, Hirsh-Pasek, & Rescorla, 1990: see Appendix B) were used. The ECERS-R was used to assess the overall quality of the child care programs and ultimately to select programs of high quality. The CPI was used to identify classrooms that are engaged in predominantly appropriate (DAP) or inappropriate (DIP) practices.

(1) Early Childhood Environment Rating Scale-Revised (ECERS-R)

To assess the global quality of child care classroom, the ECERS-R was used. The original Early Childhood Environment Rating Scale (ECERS; Harms & Clifford, 1980) had been used in both research and program improvement. Numerous studies have used the ECERS to evaluate overall quality in the U.S. and abroad. The ECERS-R maintains a comprehensive definition of the environment and the conceptual framework for assessing quality of the ECERS, although the subscales are not identical.

The ECERS-R is an observation measure designed to assess one room or one group at a time for children 2 1/2 to 5 years of age. This 43-item scale consists of seven subscales; Space and Furnishings, Personal Care Routines, Language-Reasoning, Activities, Interaction, Program Structure, and Parents and Staff. Each

item is rated on 7-point scale with descriptors for 1 (*inadequate*), 3 (*minimal*), 5 (*good*), and 7 (*excellent*). The range of scores possible on the ECERS-R is 43-301 with high scores indicating higher overall quality.

In the ECERS, two kinds of face validity were reported (Harms & Clifford, 1980). When each item on the scale was rated by seven experts in child care and early childhood education in terms of the importance to early childhood programs, 78% of the ratings received high importance. The comparison between the ratings of experts and trainers on 18 classrooms was .737 in a rank order correlation.

The ECERS-R retains the same conceptual framework, basic scoring system, and administration of the ECERS. As it is a revision of the ECERS which had demonstrated good predictive validity over the course of many research studies, the ECERS-R is expected to have the same validity. As for reliability of the ECERS-R, the authors provided interrater reliability in a sample of 21 classrooms (Harms et al., 1998). At the indicator level, the proportion of agreement across the 470 indicators was 86.1%. At the item level, the exact agreement was 48%, and the agreement within one point was 71%. The correlations for the entire scale between the two observers were .921 product moment correlation and .865 rank order. The internal consistency of the scale at the subscale and total score levels was also reported (Harms et al., 1998). Subscale internal consistencies ranged .71- .88 and a total scale internal consistency was .92.

The internal consistency on the ECERS-R was computed for both the total scale and each subscale on all 16 classrooms in this study. Cronbach's Alpha was .968 for the total scale and ranged .825- .957 for subscales: Space and

Furnishings, .891; Personal Care Routines, .855; Language-Reasoning, .844; Activities, .901; Interaction, .889; Program Structure, .957; and Parents and Staff, .825. This analysis showed that the measure was consistent and reliable for this population.

(2) Classroom Practices Inventory (CPI)

For identifying DAP and DIP classrooms, the CPI (Hyson, et al., 1990) was used. Although the ECERS-R evaluates the overall quality of the center, the CPI focuses on identifying developmentally appropriate practices in preschool classroom settings, based on principles of developmentally appropriate practice (Bredekamp, 1987). This 26-item observation scale evaluates the curriculum and emotional climate in 4- and 5-year-old classrooms.

The CPI consists of four subscales: Appropriate Program, Inappropriate Program, Total Program, and Emotional Climate. The classroom practice is rated on a 5-point Likert scale ranging from 1 (*Not at all like this classroom*) to 5 (*very much like this classroom*). The range of scores possible on the CPI is 26-130. Half of the items describe developmentally appropriate activities and half describe developmentally inappropriate ones. Total score for developmentally appropriate practice is obtained by reverse scoring on the developmentally inappropriate items.

To demonstrate the internal coherence of the CPI, the correlational and factor analyses were computed using 207 separate observations of 58 early childhood programs (Hyson, et al., 1990). Internal consistencies of individual scales ranged .88-.96 and a total scale internal consistency was .96. A factor analysis yielded four

factors accounting for 69% of the variance. Interobserver reliability was obtained from the observations of ten preschools and averaged 64% (Hyson, et al., 1990).

Concurrent and predictive validity were supported by examining the relationship between the CPI scores and certain variables such as programs' community reputations, educational attitudes of mothers and teachers, academic skills, and creativity (Hyson, et al., 1990).

In this study, the analysis of the internal consistency on the 16 classrooms was computed for both the total scale and each subscale of the CPI. Cronbach' Alpha on Appropriate Program of the CPI was .979; Inappropriate Program, .950; Total Program, .982; Emotional Climate, .807. Cronbach's Alpha for the total score was .982, indicating a high degree of consistency for this population.

Procedures

(1) Classroom Evaluation Procedures

One 4-year-old classroom from each of the 16 centers was assessed using the ECERS-R and the CPI by two observers who had practical knowledge of early educational settings and were already familiar with the two measures. Two observers were graduate students majoring in early childhood education and had teaching experiences in early education settings. They were trained to use the ECERS-R and the CPI by the author in two steps. At first, the author gave a general explanation about measures and subscales, and discussed each item and examples. Then, the author and observers observed a classroom that was not included in this study, and subsequently discussed to improve concurrent ratings.

Interobserver reliability between two observers was estimated with Cohen's kappa and inter-rater agreement on both measures prior to data collection at a four-year-old classroom that was not a part of the sample. Inter-rater percent agreement was 87% on the ECERS-R, and 96% on the CPI. Cohen's kappa statistic was .85 on the ECERS-R, and .94 on the CPI.

The trained observers were randomly assigned to each classroom. Observation was conducted for at least three hours during the morning in a regular day. Observers were directed to be as unobtrusive as possible. They didn't initiate interactions with children, but interacted in a friendly manner if it was necessary.

(2) Classroom Selection Procedures

The target classrooms were selected by the total scores of the ECERS-R and the CPI (Table 1). The ECERS-R was used to examine the overall quality of child care classroom and to select high quality classrooms. Each item of the ECERS-R is rated on a 7-point scale and high scores indicate higher quality. Total scores on 16 selected centers ranged from 154 to 263. Total scores above 210 were considered to indicate high overall quality classrooms, as a 5 point of 7-point scale indicates 'good'. As the number of total items of ECERS-R used in this study was 42, total subscale score would be 210 if the average score of 42 items were 5, indicating 'good'. Among 43 items of the ECERS-R, one item, 'provision for children with disabilities' was excluded as there was no child with an identified disability in the participants of this study.

The criteria score of the CPI used to determine classroom practices was based on prior research that used the CPI as an indicator of curricula emphasis (Wiltz, 1997;

Murphy, 1999). Scores above 100 were considered to be DAP classrooms, as higher total scores represent a predominance of DAP practices. Scores less than 60 were considered to represent DIP classrooms. Total scores for the 16 classrooms ranged from 50 to 117.

Of 16 classrooms observed, 13 classrooms were assessed as high quality classrooms with scores higher than 210 on the ECERS-R. Among these high quality classrooms, 5 DAP and 5 DIP classrooms were selected based on the CPI scores. For example, as the ECERS-R score of Center 5 was 259 and the CPI score was 113, indicating very high not only in developmentally appropriate practices, but also in overall environmental quality, center 5 was identified as one of the DAP classrooms. On the other hand, Center 12 was excluded as it was scored 237 on the ECERS-R, and 78 on the CPI, indicating a center with a high score for overall environment, but a middle range on developmentally appropriate practices. As for the DIP classrooms, Center 10 was selected as the ECERS-R score was 218 and the CPI score was 59, indicating a low score in developmentally appropriate practices and a high score in overall environmental quality. On the other hand, Center 16 was excluded as it was scored 154 on the ECERS-R, and 58 on the CPI, indicating an eligible score for developmentally inappropriate practices, but a low score for overall environment.

Among 13 high overall quality classrooms, classroom 1, 4, 5, 8, and 15 were identified as the DAP classrooms, and 2, 6, 9, 10, and 13 as the DIP classrooms.

Table 1

Total ECERS-R and CPI Scores (N=16)

Classroom	ECERS-R Score	CPI Score	Selected Classroom
1	263	115	DAP High quality
2	213	50	DIP High quality
3	205	70	Excluded
4	246	111	DAP High quality
5	259	113	DAP High quality
6	235	60	DIP High quality
7	157	67	Excluded
8	256	117	DAP High quality
9	219	60	DIP High quality
10	218	59	DIP High quality
11	214	88	Excluded
12	237	78	Excluded
13	214	56	DIP High quality
14	222	66	Excluded
15	248	115	DAP High quality
16	154	58	Excluded

Descriptions of the Selected Centers

Selected centers were all located in Seoul, the capital of Korea, and its suburban area (7 in Seoul and 3 in Gyeonggi-Do). They offered full-day care for

children of working parents, and all centers were housed in independent buildings.

DAP classrooms included corporate sponsored non-profit and independent non-profit centers. DIP classrooms included government sponsored non-profit, government sponsored on-site, and corporate sponsored non-profit centers.

DAP group were Suchi Center, Pruna Child Care, Budang Child Care, Moony Child Care, and Sonia Child Care. DIP group were Maria Child Care, Cholly Center, Sinsa Care, Barom Child Care, and Dasom Child Care. All names of centers are pseudonyms.

Suchi Center, Center 1 (DAP) Suchi Center is a corporate sponsored non-profit center, located in the middle of major corporate office buildings in Seoul. It serves 170 children from infants through kindergartners in ten classrooms.

Pruna Child Care, Center 4 (DAP) Pruna Child Care is an independent non-profit center for child care for infants through kindergartners with 138 children in six classrooms. It is located in a residential neighborhood in a suburban area of Seoul.

Bundang Child Care, Center 5 (DAP) Bundang Child Care is a corporate sponsored non-profit center, serving 222 children from infants to kindergartners in eleven classrooms. It is located in a residential neighborhood in a suburban community of Seoul.

Moony Child Care, Center 8 (DAP) Moony Child Care is an independent non-profit center, located in a residential setting in Seoul. This center serves 145 children from infants to 5-year-old in six classrooms.

Sonia Child Care, Center 15 (DAP) Sonia Child Care, an independent non-profit center is located in a residential neighborhood in Seoul. It serves 175 children from infants through kindergartners in nine classrooms.

Maria Child Care, Center 2 (DIP) Maria Child Care is a government sponsored non-profit center serving children 1 to 5 years of age. It is located in a residential neighborhood in Seoul. There are 166 children enrolled in nine classrooms in the center.

Cholly Center, Center 6 (DIP) Cholly Center is a corporate sponsored non-profit center for children from 6 months to 5 years of age. There are 176 children in ten classrooms and the center is located in a residential neighborhood in a suburban area of Seoul.

Sinsa Care, Center 9 (DIP) Sinsa Care is a government sponsored on-site child care center provided for families of federal employees working at a government facility. Located on site at a government installation in Seoul, it serves 75 children from 12 months to 5 years of age in five classrooms.

Barom Child Care, Center 10 (DIP) Barom Child Care, a government sponsored non-profit center serves 121 children in nine classrooms. Children range in age from 12 months to 5 years of age. The center is located in a residential neighborhood in Seoul.

Dasom Child Care, Center 13 (DIP) Dasom Child Care is a government sponsored non-profit center. It is located in a residential setting in Seoul. There are 130 children from 3 to 5 years of age in five classrooms.

Phase Two: Investigation of Children in Target Classrooms

In the second phase, child observation was conducted to explore the primary question about the relationship between children's stress behaviors and classroom practices. A parental questionnaire was used to assess children's temperament and parental stress. Parents also completed a demographic information questionnaire.

Participants

Five DAP classrooms and five DIP classrooms were selected for the target classrooms, and stress behaviors of 182 children in these 10 child care classrooms were observed. On the first day of classroom observation, a parental questionnaire was distributed to parents by the classroom teacher. The questionnaires were returned for 145 out of 182 children observed (80%). The final subjects in the study were 145 children; 82 in DAP classrooms, and 63 in DIP classrooms.

The child care classrooms in the study were all 4-year-old classrooms, and the mean age of children at class entry was 53.7 months. As the school year starts in March in Korea, children in the study were eligible to attend 4-year-old classrooms on March 2nd, 2005. Ages in the sample ranged from 48-61 months. All children in the study were native Koreans. As for gender, 87 (girls 58) were boys. The gender ratio imbalance in the sample reflects the current gender ratio in Korea. According to national census statistics in 2000, when participants of this study were born, 11 more newborn boys came into the world for every 100 girls born in Korea, especially, 37 more boys for every 100 girls born as for the third child (Korea National Statistical Office, 2005).

As for the structural aspect of classroom, teacher and children ratio was 1:15.7 and the average age of the teachers was 27.3 years. Seventy-five percent of teachers graduated from a university and 25% had M.A. diplomas. Average amount of teaching experience was 51.5 months, with length of employment at the current center averaging 46.4 months.

Measures used in Phase Two

To assess children's stress behaviors, children were observed using the Classroom Child Stress Behavior Instrument (CCSBI; Burts, Hart, Charlesworth, & Kirk, 1990) and a scan sampling procedure (Altmann, 1974). The Temperament Rating Scale (TRS; Chon, 1991) was used to assess children's temperament, and parenting stress was measured using the Parental Stress Index-Short Form (PSI-SF; Abidin, 1995).

(1) Classroom Child Stress Behavior Instrument (CCSBI)

The CCSBI (Burts, et al., 1990: see Appendix C) is an observational checklist to evaluate children's stress behaviors in early educational settings. It was developed by Burts and her colleagues for their study on developmentally appropriate teaching practices and the observed stress behaviors of young children. Items were developed from teacher input and literature documenting manifestations of child's stress behaviors.

In the CCSBI, stress behaviors are classified into two major categories: Passive and Active Stress Behavior. Passive Stress consists of four behavior patterns, labeled Physically, Facially, Non-responsive/Negative, and Onlooking with 13 stress

indices such as 'withdrawn', 'wanders aimlessly', or 'refused to do work'. Active Stress is categorized into three types: Self-with-Self, Self-with-Others, and Self-with-Object. The subcategory of Self with Self includes seven behavior patterns: Automanipulation, Repetitive/Restricted Movement, Wiggles/Squirms, Self Destructive, Removes Self From Mainstream, Physiological Reactions, and Unusual Noises/Heavy Sighing. This subcategory consists of 24 stress indices such as 'ear pulling', 'rocking', or 'complains of feeling sick'. Self with Others consists of 17 indices (e.g. bullying or threatening, refused to talk in group, whines or asks for mother) in four behavior patterns: Hostile/Aggressive, Dependency, Verbal Dysfunctions, and Touching Others at Inappropriate Times/Ways. Finally, the subcategory of Self with Object is composed of 8 indices in two behavior patterns: Destructive and Nondestructive. Examples of indices include 'destroys toys and games', 'pencil tapping', and 'doodling on paper'. An observer categorizes children's behaviors into one of these 62 indices for a scan. A nonstress category is also included in the measure, defined as the absence of any behavior identified on the CCSBI (Burts et al., 1992).

Observation is conducted through a scan sampling procedure and observers typically collect data during regular morning period over multiple days. Children's stress behaviors are created by calculating the proportion of scans in which stress behaviors are coded. To compute proportional stress score for each child, frequencies of the child's stress behaviors were divided by the total number of observations.

To establish interrater reliability, agreement between observers was computed by Cohen's kappa (Burts et al., 1990). At the beginning of each day, two

observers conducted one cycle of observations of children within the class on a scan-by-scan basis. The resulting coefficients ranged from .69 to .95, with an overall average of .82. In this study, Cohen's kappa reliability estimates on 80 observations with each observer fell within the range of .75 to .96, with overall average of .83.

(2) Temperament Rating Scale

The TRS (Chon, 1991: see Appendix D) is a caregiver report measure designed to evaluate temperament in children 3 to 7 years of age in Korean children. This 33-item questionnaire is based on a definition of temperament as "individual differences in reactivity style to reflect the physiological characteristics, and self-regulation" (Chon, 1991, p.80).

Chon (1991) surveyed extant temperament measures, including the Parent Temperament Questionnaire (PTQ: Thomas & Chess, 1977) and the Revised Infant Temperament Questionnaire (RITQ; Carey & McDevitt, 1978), as well as interviewed mothers in Korea about their children's temperament. To explore the appropriateness of selected items, content validity was examined by 6 professors of early childhood education and child development, and a factor analysis was conducted using 105 Korean children 3 to 7 years of age. Based on the data of reliability and validity, 33 items were finally selected as the TRS. (see Appendix D for an English translation of the TRS)

The TRS has five dimensions: Adaptability, Activity, Physiological Rhythmicity, Reactivity, and Emotionality. Activity, Reactivity, and Emotionality are grouped into Reaction Patterns, and Adaptability and Physiological Rhythmicity represent Self-Regulation. Parents are asked to assess their child on a 4-point scale,

ranging from 1 (*extremely untrue of your child*) to 4 (*extremely true of your child*). In Korea, the TRS has been widely used in studies of temperament in relation to a variety of topics, as well as environmental influences on temperament and consistency in temperament (e.g. Hong, 2001; Kim, 1998; Na, 1999).

The reliability and validity of the TRS were reported using 622 parental questionnaires (Chon, 1991). Internal consistencies of individual scales ranged from .66 to .81, with a mean of .73, similar to the average standard scale alpha of representative temperament measures (Hubert, Wachs, Martin, & Gandour, 1982). A factor analysis yielded five factors accounting for 84% of the variance. As for item discrimination, the degree of discrimination on all 33 items was significant and acceptable.

The internal consistency of the TRS was computed for both the total scale and each individual scale on 145 children in this study. Cronbach's Alpha on the total scale was .778. Cronbach's Alpha on each individual scale ranged from .323 to .857: .857 for Adaptability; .747 for Activity; .794 for Physiological Rhythmicity; .628 for Reactivity; and .323 for Emotionality.

(3) Parenting Stress Index-Short-Form

The PSI-SF (Abidin, 1995: see Appendix E) is a standardized instrument to evaluate stress related to parenting and parent-child interactions with parents of children from 1 month to 12 years of age. This 36-item self-report questionnaire is widely used in investigations of parenting stress and intervention research.

The PSI-SF is comprised of a series of multiple choice and Likert items ranging from 'SA=Strongly agree' to 'SD=Strongly disagree'. It consists of three

subscales: Parental Distress – an impaired sense of competence in the parenting role, lack of social support, role-restriction, depression, and conflict with one's spouse; Parent-Child Dysfunctional Interaction – child fails to meet parents' expectations, interactions with the child are not reinforcing; and Difficult Child – characteristics of the child that make him/ her easy or difficult to manage (Abidin, 1995; 1997). The total stress scores range 36-180, with higher scores indicating greater parenting stress.

The reliability has been reported with test-retest reliability and internal consistency (Abidin, 1995). Internal reliability was reported for both the total and the individual subscales: total stress, .91; Parental distress, .87; Parent-Child Dysfunctional Interaction, .80; and Difficult Child, .85. The test-retest reliability was .84 for total stress, .85 for Parental Distress, .68 for Parent-Child Dysfunctional Interaction, and .78 for Difficult Child subscale.

In this study, the internal consistency of the PSI-SF was computed on 145 children. Cronbach's Alpha on the total scale was .850. Cronbach's Alpha on each subscale was .760 for Parental Distress, .715 for Parent-Child Dysfunctional Interaction, and .831 for Difficult Child.

(4) Demographic Questionnaire

A demographic questionnaire (see Appendix F) was distributed to parents in order to obtain information on child's age, siblings, and parents' education, and income, as well as selected questions about their children's child care history and extracurricular academic activities.

Procedures

Two observers were trained to use the CCSBI by the author. The trained observers were randomly assigned to each classroom. Interobserver reliability was estimated with Cohen's kappa on the CCSBI and established prior to data collection at a four-year-old classroom that was not a part of the sample.

Observers blind to the classroom practices scanned children in a different predetermined random order at the same time during the morning hours for 4-6 nonconsecutive days. Observers used a timer for exact time scan. Each child was targeted for a 3-second scan to code for nonstress behaviors or one of the categorized stress behaviors. For each child, a total of 64-136 scans (average 85.8) were recorded. The difference on the number of scans observed among children was mainly due to children's late arrival to or absence from school. As the observations were conducted for several days in the morning, some children who arrived late at school were observed less than other children.

Parental questionnaires, including the TRS, the PSI-SF, and a demographic section, were distributed to parents through the classroom teacher and returned to children's school. Follow up reminders were distributed for any outstanding questionnaire by the classroom teacher.

Analysis

The statistical analyses for this study were performed in three stages. First, descriptive statistics were computed for child and parent demographic variables to summarize and compare characteristics across classroom practices (DAP and DIP).

Means and standard deviations were calculated for the continuous demographic variables of age, child care experience, and extracurricular activities. Frequencies and percentages were computed for the categorical variables of parents' education and family income. Differences between the two classroom practice groups on the demographic variables were then tested by analysis of variance (ANOVA).

Prior to examining the hypotheses, difference analyses were conducted on the study variables to determine if there were any significant differences between the two classroom practice groups. To verify differences and similarities between the two groups, correlations, and multivariate analyses of variance (MANOVA) were analyzed. To confirm that each group represents a different classroom practices, MANOVA were computed on the total and sub scores of the CPI. Correlations and MANOVA were used to examine homogeneities of child and family variables for the two groups and to confirm the high quality of classrooms in this study.

The main analysis focused on the relation between children's stress behaviors and the study variables. To test research questions 1 and 2 examining the relationship between each study variable and children's stress behaviors, MANOVA, linear regression analyses were used. MANOVA was conducted to examine if categorical variables such as gender and classroom practices were related to total and sub scores of children's stress behaviors. The relationship between children's stress and continuous variables such as child temperament and maternal parenting stress was explored by linear regression analyses.

To test research question 3, hierarchical regression and correlations were conducted to determine if the effect of classroom practices on children's stress was

significant after controlling the other variables. Correlations among study variables and the scores of children's stress were computed to select predictive variables to children's stress behaviors. Based on the correlation results, hierarchical regression analyses were conducted in order to examine the independent effects of classroom practices on children's stress behaviors. All analyses were performed using the SPSS 11.0 statistical package for Windows.

CHAPTER IV: RESULTS

A major purpose of this study was to investigate the relationship between children's stress behaviors and classroom practices that vary in terms of developmental appropriateness. The effects of gender, temperament, and parenting stress were also examined in this study.

First of all, identification of two different classroom practices, DAP and DIP, was the most important condition in this study. Two groups should be differentiated in terms of classroom practices, but at the same time they should be homogeneous samples on the other variables such as child and family variables as well as demographic variables.

The main statistical analysis focused on the independent contribution of classroom practices to the prediction of children's stress behaviors. To determine if this effect was moderated by child and family variables, gender, temperament of the child, and maternal parenting stress were included in the analysis.

Descriptive Statistics for Demographic Information

Table 2 presents descriptive statistics for demographic variables in each type of classroom practices, DAP and DIP. The DAP group included 48 boys (girls 34), while the DIP group had 39 boys (girls 24). All respondents to the parental questionnaire were mothers. No significant differences were found between the two groups for the child variables of age, child care history, and number of extracurricular activities. A significant difference was found for the number of hours of

extracurricular activities that children participate in weekly ($F= 4.68, p< .05$).

Children in the DIP group spend slightly more time in extracurricular activities than children in the DAP group do. Due to this significant difference, hours of extracurricular activities was controlled in later analysis on the relationship between classroom practices and children's stress behaviors.

Table 2

Child Characteristics by DAP and DIP Group (N=145)

Variables	DAP group (N=82)	DIP group (N=63)
Boys	48	39
Girls	34	24
Age range of child	48-60 months	48-61 months
Average age of child	53.57 months	53.95 months
Total amount of child care center	23.05 months	19.85 months
Amount of current child care center	13.72 months	14.05 months
Number of extracurricular activities	1.37	1.75
Hours of extracurricular activities *	1.52 hrs/week	2.47hrs/week

* $p< .05$.

The children in both groups were primarily from middle-high class households. Eighty-three percent of fathers and 75% of mothers were college-educated or above. Almost half of the families (47%) earned over \$51,000 a year,

with the average annual income of households in Korea reported as \$36,000 (Korea National Statistical Office, 2006). Children who had no older siblings reached 55.2%; twenty percent were only children. There were no significant differences between the DAP and the DIP groups on family demographic variables, except for mother's education ($F=7.48, p< .01$). Mothers of children in the DAP group had higher education levels than mothers of children in the DIP group. Because of this significant difference, mother's education was controlled in later analysis. Parental demographic information by group is found in Table 3.

Table 3

Parent Characteristics by DAP and DIP Group (N=145)

Variables	DAP group (N=82)	DIP group (N=63)
Mother's age	35.41 years	35.43 years
Father's age	37.90 years	37.79 years
Mother's education *		
Some middle school	0 (0%)	0 (0%)
High school diploma	14 (17%)	22 (35%)
Bachelor's degree	56 (68%)	37 (59%)
Master's degree or above	12 (15%)	4 (6%)
Father's education		
Some middle school	0 (0%)	0 (0%)
High school diploma	11 (13%)	14 (22%)
Bachelor's degree	54 (66%)	41 (65%)
Master's degree or above	17 (21%)	8 (13%)
Family annual income		
\$13,000-\$25,000	9 (11%)	9 (14%)
\$25,000-\$38,000	14 (17%)	13 (21%)
\$38,000-\$51,000	16 (20%)	16 (25%)
over \$51,000	43 (52%)	25 (40%)

* $p < .01$.

Information about teachers of target classrooms was collected as supplementary data. There were no significant differences between the DAP and the DIP groups on child care center structural variables such as teacher's age, education,

and teaching experience as well as teacher/ child ratio (Table 4). The teachers in both groups of this study were highly qualified. The *Child Care Act* of 2005 establishes the qualification of child care teacher into three levels, based on education and experience; a high school diploma and a certificate from accredited institution of child care teacher program for level 3, a baccalaureate degree from college or university and completion of child care related coursework in university for level 2, and a master's degree in child care related major and over one year teaching experience in child care program for level 1. All teachers in this study were categorized into level 2 or 1, which reflected that high quality of child care programs were included in this study.

Table 4

Teacher Characteristics by DAP and DIP Classroom (N=10)

Variables	DAP group (N=5)	DIP group (N=5)
Teacher/ child ratio	1:15	1:16.8
Age of teacher	27.0 moths	27.6 moths
Education of teacher		
Bachelor's degree	4 (75%)	4 (75%)
Master's degree or above	1 (25%)	1 (25%)
Amount of teaching experience	47.6 months	55.4 months
Amount of teaching experience in current center	39.8 months	53.0 months

Comparison between the DAP and the DIP groups

To detect differences between the two classroom practice groups, correlations and MANOVA were conducted on three types of variables; classroom, child, and parents. For classroom variables, the scores of the ECERS-R and the CPI were analyzed, and the TRS and the PSI-SF scores of each group were examined to compare child and parental characteristics.

Classroom Comparison

To verify that there was no significant difference in overall classroom quality for the two groups, the total and sub scores of the ECERS-R were analyzed. Although all ten classrooms met the criteria for high quality, a significant difference was found for the ECERS-R total score between the DAP and the DIP groups ($F=45.69, p< .001$). For subscales, there were significant differences between the two groups in Language-Reasoning ($F=8.13, p< .05$), Activities ($F=35.12, p< .001$), Interaction ($F=7.96, p< .05$), and Program Structure ($F=152.38, p< .001$). These results are detailed in Table 5.

Table 5

ECERS-R Total and Sub Scores by DAP and DIP Classroom (N=10)

ECERS-R	DAP classroom (N=5) M (SD)	DIP classroom (N=5) M (SD)
Total ECERS-R ^{**}	250.40 (7.23)	215.80 (8.87)
Space and Furnishings	49.20 (0.84)	47.40 (2.07)
Personal Care Routines	36.20 (2.68)	35.80 (1.30)
Language-Reasoning [*]	22.80 (2.17)	17.00 (4.00)
Activities ^{**}	53.00 (3.67)	41.00 (2.65)
Interaction [*]	32.00 (1.87)	27.40 (3.13)
Program Structure ^{**}	19.60 (0.55)	11.60 (1.34)
Parents and Staff	37.60 (0.89)	35.60 (2.88)

* $p < .05$. ** $p < .001$.

This significant difference between the two groups was due to the fact that there were several subscales of the ECERS-R that were highly correlated to the CPI total scores. The ECERS-R is an instrument to assess the overall quality of classroom and includes similar constructs with the CPI such as teacher-child interaction or program structure. In the analysis on the ten classrooms in this study, high correlations were found among the CPI score and the sub scores of Language-Reasoning, Activities, Interaction, and Program Structure of the ECERS-R (Table 6).

Table 6

Correlations among the CPI Total Scores and Total and Sub Scores of the ECERS-R (N=10)

Variables	1	2	3	4	5	6	7	8	9
1. Total CPI	—								
2. Space and Furnishings	.33	—							
3. Personal Care Routines	.25	.85**	—						
4. Language-Reasoning	.75**	.53	.46	—					
5. Activities	.79**	.66*	.57	.75**	—				
6. Interaction	.66*	.70*	.71*	.78**	.66*	—			
7. Program Structure	.95**	.49	.38	.84**	.90**	.67*	—		
8. Parents and Staff	.44	.76**	.55	.36	.43	.69*	.44	—	
9. Total ECERS-R	.72**	.87**	.78**	.81**	.89**	.88**	.83**	.71*	—

* $p < .05$. ** $p < .01$.

Given these results, these four subscales that correlated to the CPI scores were dropped from the subsequent analysis. The other subscales of Space and Furnishings, Personal Care Routines, and Parents and Staff were used to compare the difference between the DAP and the DIP classrooms. The results of MANOVA for scores on the three subscales of the ECERS-R showed that there were no significant differences in child care classroom quality between the two groups, presented in Table 7.

Table 7

Three Sub Scores of the ECERS-R by DAP and DIP Classroom (N=10)

ECERS-R	DAP classroom (N=5) M (SD)	DIP classroom (N=5) M (SD)
Sum of the three subscales	123.00 (2.35)	118.80 (3.77)
Space and Furnishings	49.20 (0.84)	47.40 (2.07)
Personal Care Routines	36.20 (2.68)	35.80 (1.30)
Parents and Staff	37.60 (0.89)	35.60 (2.88)

To determine if the two groups were significantly different in terms of classroom practices, the CPI total and sub scores were analyzed (Table 8). There were highly significant differences in total scores ($F=705.14$, $p < .001$) and sub scores: Appropriate Program ($F=223.26$, $p < .001$), Inappropriate Program ($F=850.51$, $p < .001$), Total Program ($F=688.99$, $p < .001$), and Emotional Climate ($F=96.80$, $p < .001$). These results indicated that DAP classrooms scored higher on

developmentally appropriate practice items than DIP classrooms. In summary, all of the classrooms in this study were of high quality in terms of structural variables, and each group fairly represented the different classroom practices in terms of developmental appropriateness.

Table 8

CPI Total and Sub Scores by DAP and DIP Classroom (N=10)

CPI	DAP classroom (N=5) M (SD)	DIP classroom (N=5) M (SD)
CPI total scores *	114.20 (2.28)	57.00 (4.24)
Appropriate Program *	43.80 (2.59)	19.80 (2.49)
Inappropriate Program *	44.80 (1.48)	20.40 (1.14)
Total Program *	88.60 (3.05)	40.20 (2.78)
Emotional Climate *	25.60 (1.24)	16.80 (1.64)

* $p < .001$.

Child and Parent Comparison on Study Variables

Comparisons between the two groups on child and parent variables were explored for child temperament and maternal parenting stress using MANOVA. Table 9 and 10 present means and standard deviations for the DAP and the DIP groups. There were no significant differences between the two groups for five subscale scores of the TRS, and total and three subscale scores of the PSI-SF. In summary, participants in the two groups were homogeneous samples in terms of child temperament and maternal parenting stress.

Table 9

Sub Scores of the TRS by DAP and DIP Group (N=145)

TRS	DAP group (N=82) M (SD)	DIP group (N=63) M (SD)
Adaptability	28.01 (3.98)	28.78 (4.68)
Activity	23.99 (3.53)	24.57 (3.33)
Physiological Rhythmicity	12.07 (2.08)	12.49 (1.87)
Reactivity	19.00 (2.24)	18.62 (2.35)
Emotionality	9.32 (1.69)	9.76 (1.48)

Table 10

Total and Sub Scores of the PSI-SF by DAP and DIP Group (N=145)

PSI-SF	DAP group (N=82) M (SD)	DIP group (N=63) M (SD)
Total score	83.74 (14.46)	84.02 (15.64)
Parental Distress	30.20 (6.72)	30.08 (6.41)
Parent-Child Dysfunctional Interaction	24.15 (5.63)	25.10 (6.12)
Difficult Child	29.39 (7.25)	28.84 (7.67)

Predictors of Children's Stress Behaviors

Research Question 1: Classroom practices and children's stress behaviors

To test Research Question 1, the relationship between classroom practices and children's stress behaviors was examined. Table 11 presents means of proportional stress scores for the total and subscales of the CCSBI by classroom practices, and the results of the MANOVA. There were significant differences in the total scores and sub scores for Active Stress. Children in DIP classrooms showed more stress behaviors than children in DAP classrooms ($F=11.92, p< .01$). Differences for Active Stress scores ($F=44.19, p< .001$) were primarily due to the highly significant difference for Self with Self behavior ($F=79.87, p< .001$). Children in DIP classrooms showed much more stress behaviors toward themselves such as repetitive movement (e.g. rocking), self destructive action (e.g. slapping self), and automanipulation (e.g. twisting or biting clothes). In addition, the difference between the two groups was significant in the sub score for Self with Objects ($F=4.11, p< .05$). Children in the DIP group showed more stressful behaviors toward objects both in destructive (e.g. destroying worksheet) and nondestructive (e.g. doodling on paper) ways.

Table 11

Total and Sub Scores of the CCSBI by DAP and DIP Group (N=145)

CCSBI	DAP group (N=82) M (SD)	DIP group (N=63) M (SD)	F
Total stress behavior	.136 (.09)	.188 (.09)	11.92**
Passive Stress behavior	.086 (.07)	.084 (.05)	0.01
Active Stress behavior	.050 (.04)	.104 (.06)	44.19***
Self with Self	.022 (.02)	.066 (.04)	79.87***
Self with Others	.021 (.02)	.026 (.03)	1.01
Self with Objects	.007 (.01)	.013 (.02)	4.11*
Total number of observations	87.99 (26.47)	83.02 (24.52)	1.16

* $p < .05$. ** $p < .01$. *** $p < .001$.

Research Question 2: Child and family variables and children's stress behaviors

In the Research Question 2, statistical analyses were conducted to determine if gender and temperament of the child and parenting stress of the mother were related to children's stress behaviors. First, MANOVA was computed on the total score and sub scores of the CCSBI by gender. The results are detailed in Table 12. Consistent with prior research, boys showed significantly higher stress behaviors than girls ($F= 5.71, p< .05$). There was a significant difference for Active Stress scores ($F=9.21, p< .01$), which were primarily due to the highly significant difference for Self with Others sub scores ($F= 6.80, p< .01$). Boys expressed their stress toward others in more inappropriate behaviors (e.g. touching others inappropriate times/ways,

physical hostility) than did girls. There was also a significant difference for Self with Objects sub scores ($F= 4.44, p< .05$), indicating that boys exhibited more stressful behaviors toward objects (e.g. destroys toys and games, pencil tapping) than did girls.

Table 12

Total and Sub Scores of the CCSBI by Gender (N=145)

CCSBI	boys (N=87) M (SD)	girls (N=58) M (SD)	F
Total stress behavior	.174 (.10)	.136 (.09)	5.71*
Passive Stress behavior	.089 (.06)	.079 (.07)	.87
Active Stress behavior	.085 (.06)	.057 (.05)	9.21**
Self with Self	.045 (.04)	.035 (.03)	3.13
Self with Others	.027 (.03)	.017 (.02)	6.80**
Self with Objects	.012 (.02)	.006 (.01)	4.44*

* $p < .05$. ** $p < .01$.

Linear regression analyses were conducted to explore the prediction of children's stress behaviors from child temperament. Table 13 presents the results of the linear regression models examining the TRS subscales as predictors of children's stress behaviors. There were significant relationships between children's stress behaviors and the TRS subscales; Activity ($\beta = .164, p < .05$) and Reactivity ($\beta = -.164, p < .05$). The amount of variance accounted for by each subscale on children's stress behaviors were 27%, respectively. Children who were identified as more physically

active and less reactive to stimulation by their mothers were observed to have more stress behaviors in the classrooms.

Table 13

Children's Stress Behaviors Regressed on Child Temperament (N=145)

TRS	<i>B</i>	<i>SE</i>	β	R^2
Adaptability	5.93E-04	.002	.027	.001
Activity	4.46E-03	.002	.164	.027*
Physiological Rhythmicity	-3.78E-03	.004	-.081	.006
Reactivity	-6.72E-03	.003	-.164	.027*
Emotionality	8.61E-03	.005	.148	.022

* $p < .05$.

Finally, the effect of maternal parenting stress on children's stress behaviors was explored by linear regression analysis. Table 14 presents the results of the linear regression analyses examining the PSI-SF total and its sub scores as predictors of children's stress behaviors. In accordance with prior research, children whose mothers experience higher levels of parenting stress tended to exhibit more stressful behaviors. Approximately 6% of the variance of children's stress behaviors was accounted for by its relationship with total maternal parenting stress ($\beta = .237, p < .01$). The subscales were also significant predictors of children's stress behaviors. Simple linear regression revealed significant relationships between children's stress behaviors and the PSI-SF subscales; Parent-Child Dysfunctional Interaction ($\beta = .335, p < .001$) and

Difficult Child ($\beta = .170, p < .05$).

Table 14

Children's Stress Behaviors Regressed on Maternal Parenting Stress (N=145)

PSI-SF	B	SE	β	R^2
PSI-SF total score	1.49E-03	.001	.237	.056**
Parental Distress sub score	7.01E-04	.001	.049	.002
Parent-Child Dysfunctional Interaction sub score	5.36E-03	.001	.335	.112***
Difficult Child sub score	2.14E-03	.001	.170	.029*

* $p < .05$, ** $p < .01$, *** $p < .001$.

Research Question 3: Children's stress behaviors and study variables

Correlations among the study variables were computed to select predictive variables of children's stress behaviors, including child and family variables as well as classroom practices (Table 15). Gender was significantly correlated with children's stress behaviors ($r = -.196, p < .05$), indicating more stress behaviors for boys.

Children's stress behaviors were also significantly related to two subscales of the temperament; Activity ($r = .164, p < .05$), and Reactivity ($r = -.164, p < .05$). Results indicated that parenting stress had significant positive associations with children's stress behaviors; Dysfunctional Interaction ($r = .335, p < .01$), and Difficult Child ($r = .170, p < .05$).

Table 15

Correlations among Study Variables (N=145)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Gender	—										
2. Adaptability	-.079	—									
3. Activity	-.250**	.120	—								
4. Physiological Rhythmicity	.058	.190*	-.123	—							
5. Reactivity	.282**	.185*	.052	.143	—						
6. Emotionality	-.145	.410**	-.049	.130	-.143	—					
7. Parental Distress	-.122	-.079	.193*	.054	.115	-.123	—				
8. Dysfunctional Interaction	-.041	-.245**	.263**	-.224**	-.189*	-.078	.293**	—			
9. Difficult Child	-.002	-.163	.282**	-.360**	.072	-.323**	.240**	.516**	—		
10. DAP/DIP	-.034	.089	.084	.104	-.083	.137	-.010	.082	-.037	—	
11. Children's stress behavior	-.196*	.027	.164*	-.081	-.164*	.148	.049	.335**	.170*	.277**	—

* $p < .05$. ** $p < .01$.

To determine the independent contribution of classroom practices to the prediction of children's stress behaviors, a hierarchical multiple regression analysis was conducted. In the first block of variables, demographic variables of mother's education and hours of extracurricular activities were entered into the regression equation, as there were significant differences between DAP and DIP groups in those variables. In the second block, child and family factors significantly correlated to children's stress were entered as predictors. These were gender, two subscales of temperament; Activity and Reactivity, and two subscales of parenting stress; Parent-Child Dysfunctional Interaction and Difficult Child. In the third block, classroom practice, DAP and DIP was entered. The results of the hierarchical regression analysis are detailed in Table 16.

The results showed that mother's education was a significant predictor of children's stress behaviors ($\beta = -.338, p < .001$), and demographic variables explained approximately 12% of the variance in children's stress behaviors ($p < .001$). Among child and family variables, gender ($\beta = -.166, p < .05$) and Parent-Child Dysfunctional Interaction subscale of parenting stress ($\beta = .192, p < .05$) made contributions to the prediction, adding an additional 11% of the variance ($p < .01$). Classroom practice also added significantly to the prediction of children's stress behaviors once other variables had been controlled ($\beta = .206, p < .01$). The full regression model accounted for approximately 26% of the total variance in children's stress behaviors ($p < .001$). The overall models evaluated in this analysis indicated that classroom practice was a significant predictor of children's stress behaviors in the classrooms once other significant variables had been controlled.

Table 16

Summary of Hierarchical Regression Analyses for Variables Predicting Children's Stress Behaviors (N=145)

Variables	<i>B</i>	<i>SE</i>	β
Step 1			
Mother's education	-5.40E-02	.013	-.338***
Extracurricular activities	-1.01E-03	.003	-.029
Step 2			
Mother's education	-4.48E-02	.013	-.281**
Extracurricular activities	-2.91E-04	.003	-.008
Gender	-3.19E-02	.016	-.166*
Activity	3.30E-04	.002	.012
Reactivity	-3.61E-03	.003	-.088
Dysfunctional Interaction	3.07E-03	.002	.192*
Difficult Child	8.45E-04	.001	.067
Step 3			
Mother's education	-3.65E-02	.013	-.229**
Extracurricular activities	-2.09E-03	.003	-.059
Gender	-3.26E-02	.015	-.170*
Activity	-1.42E-04	.002	-.005
Reactivity	-2.88E-03	.003	-.070
Dysfunctional Interaction	3.01E-03	.002	.188*
Difficult Child	9.12E-04	.001	.072
DAP/ DIP	3.89E-02	.015	.206**

Note. $R^2 = .119$ for Step 1 ($ps < .001$); $\Delta R^2 = .106$ for Step 2 ($ps < .01$); $\Delta R^2 = .037$ for Step 3 ($ps < .01$).

* $p < .05$, ** $p < .01$, *** $p < .001$.

CHAPTER V: DISCUSSION

This study examines the effect of classroom practices, Developmentally Appropriate Practice (DAP) and Developmentally Inappropriate Practice (DIP), on children's stress in Korean child care centers. Other variables associated with children's stress were taken into account, including the gender and temperament of the child, maternal parenting stress, and the overall quality of the classroom.

Of the many studies that have documented the negative impact of inappropriate classroom practice on child development, few have focused on children's stress. And of those that do, it is difficult to find studies that include child and family variables. This research, then, uniquely provides an opportunity to explore the relationship between classroom practices and children's stress behaviors in child care centers in the context of overall classroom quality and the characteristics of children and families.

Following the studies of Burts and her colleagues (1990; 1992; 1998) on classroom practices and children's stress behaviors, this study applied research documenting the relationship between DAP and children's stress in the U.S. to the Korean early educational setting. This study also includes several important child and family variables exploring the relationship between classroom practices and children's stress behaviors. By considering child temperament and parenting stress, the independent effect of classroom practices is clearly demonstrated.

In this chapter three results related to the research questions of this study will be discussed. I will first discuss the relationship between classroom practices and

children's stress behaviors. Secondly, the impact on children's stress behaviors of child and family variables will be discussed, including gender, temperament, and maternal parenting stress. Finally, the independent effect of classroom practices on children's stress behaviors after controlling for child and family variables will be summarized.

Based on these findings, several implications for early childhood educators and policy makers will be suggested. Some limitations in interpreting the results of this study will be addressed, followed by suggestions for future research.

Classroom Practices and Children's Stress Behaviors

A major purpose of this study was to explore the effect of classroom practices on children's stress in Korean early childhood educational settings. Children in DAP classrooms were expected to exhibit less stress behaviors than children in DIP classrooms, just as in the U.S. Consistent with expectations, classroom practice had a significant effect on children's stress behaviors both for overall stress as well as specific active stress behaviors. Children's stress behaviors were significantly less in DAP than in DIP settings. Current results support previous findings about the inverse relationship between DAP and children's stress behaviors among U.S. samples (e.g. Burts, et al., 1990; Burts, et al, 1992; Hart, et al., 1998; Ruckman, et al., 1999).

These results demonstrate the applicability of the U.S. research results to Korean settings. Parents in Korea place a high value on, and have high expectations for, the academic achievement of their children. Because of these expectations, most children begin academic-oriented, structured activities at an early age (Cho, 2004;

Kim, 2006). Academically focused programs and extracurricular activities in the early years have predominated, and preschool children are expected to get used to the use of direct instruction for specific academic skills. In most kindergartens, children are taught to master reading and basic arithmetic such as addition and subtraction, and even to memorize multiplication tables (Park, 2007). Most parents are convinced of the benefit of an early start for academic-oriented instruction, and most parents believe that an early start can bring later academic success. A recent research study of 2,137 parents (Lee, et al., 2002) found that 66% of parents think the proper starting period for teaching lessons to children is before 24 months. Most parents (91%) responded that children should start formal learning before 36 months and 78% of 4 year olds actually take extracurricular lessons. In the educational environment of Korea, the negative effect of DIP was expected to be somewhat different from that of the U.S. In Korea, formal tutorial learning usually starts even before preschool and children get used to highly academic focused activities and directed instruction from an early age. It was expected that this early experience might reduce the negative effect of DIP on children's stress as children are used to such an educational environment. Current results showed, however the effect of classroom practices on children's stress behaviors was similar to the U.S., suggesting a negative effect of DIP on children's stress.

This influence of classroom practices on children's stress behaviors may be explained in several ways. First, differences in activities between the DAP and the DIP classrooms may affect children's behaviors. Based on the NAEYC guidelines and the CPI scores used to identify the DAP and the DIP classrooms, there is an

assumption of more center activities or group story activities in the DAP classroom, and more whole group, teacher-directed small groups, and workbook activities in the DIP classroom. The differences in activities between the two classrooms were actually demonstrated in the sub scores of the ECERS-R in the current study. For example, if there are differences between the two classrooms in the length of time children spend for center activities in which children are participating in different activities around the classroom and free to select activities they wish to engage in, it might have a differential effect on children's stress behaviors.

Another reason for the effect of classroom practices might be found in the role of teachers and the interaction between teachers and children in the classroom. Teaching practices based on the NAEYC guidelines are different from DIP classrooms in which teachers strictly define what and how to learn, and emphasize rote learning and whole-group instruction on narrowly defined academic skills (Bredekamp & Copple, 1997). On the other hand, the DAP classrooms encourage children to construct their own understandings through meaningful learning experiences, and to participate in learning centers in which they work independently or collaboratively to solve problems that integrate various curricular areas. Teachers in DAP settings are responsible for creating learning environments and interacting with children to motivate them to actively construct new knowledge, and interactions between teachers and children are also more flexible and positive. In the DIP classroom, in contrast, teachers are more directed and less responsive to children's reactions, which might be one of the reasons for more children's stress behaviors.

Young children are exposed to a variety of stressors outside the school, and

additional stress in the classroom might have serious consequences. Children in child care programs spend most of their day with adults other than their parents, thus making it particularly important to understand the nature of this relationship. These results suggest that early education curricula should be planned to provide a setting that is developmentally appropriate, which can reduce children's stress in educational settings.

Child and Family Variables and Children's Stress Behaviors

Gender and child temperament, and maternal parenting stress were selected due to the evidence that differences among these variables are related to children's stress.

Gender and Children's Stress Behaviors

Consistent with previous studies (e.g. Burts, et al., 1990; Hart, et al., 1998; Pianta & Egeland, 1990; Pryor-Brown, et al., 1986; Stormont, 2002), children's stress was differentiated by gender. The results of gender difference are also consistent with prior research in Korea (e.g. An, 1995; Yang & Jung, 1999). Boys exhibited more stress behaviors than girls regardless of classroom practices, showing significantly higher levels of stress behaviors toward others.

The significant gender difference supports the literature which indicates that boys are more vulnerable than girls to stress and that certain stressors may affect boys differently than girls (Abidin, et al., 1992; Humphrey, 1998). This may be due to inherent difference between the genders, or the effects of environmental and cultural expectations. Research has shown the gender difference in play preference (Anselmo,

1987; Fortis-Diaz, 1997; Liss, 1986). While girls prefer to play with scissors and paper, paints, and chalkboards, boys tend to enjoy playing with blocks, tools, cars, and trucks. For this reason, paper-pencil activities which are dominant in the DIP classrooms might increase stress behaviors for boys.

Social and cultural expectations might also be a reason for gender difference. In Korea, boys are traditionally treated as superior to girls. While girls are expected to be more passive and obedient, boys are encouraged to be more aggressive, brave, and strong (Korea Ministry of Gender Equality, 2004b; 2005; Park, Kim, Cho, & Choi, 2005). Some aggressive behaviors which might be harmful to others are more acceptable for boys than for girls. As boys are used to this environment in Korea, more rigid and didactic activities requiring passive reactions, prevalent in the DIP classrooms, might be more stressful for boys. Teachers should be aware of this gender difference when planning programs in the classroom.

Temperament and Children's Stress Behaviors

Children's temperament was expected to be associated with stress. Levels of activity and reactivity of children in this study were significantly related to stress behaviors. However, the effects of temperament on children's stress behaviors were relatively weak compared to other study variables. One possible explanation of this weak effect may relate to the temperament measure. Considering that children's stress behaviors were observed in child care classrooms by student observers and child temperament was assessed by the mother, the difference in informants and settings may produce a response bias that could deflate associations between two outcomes.

Current results support previous findings linking the temperament of the

child to children's stress among samples in the U.S. and Korea (e.g. Jewett & Karen, 2002; Koh, 1998; Lee, 1996; Won, 1990). Although temperament has been conceptualized in different ways by different theorists (Goldsmith et al., 1987), most approaches to temperament include common dimensions of interest. Several temperament traits such as negative mood, low adaptability, high activity, inhibition, and high intensity have been regarded as associated with children's behavioral problems and stress (Guerin, Gottfried, & Thomas, 1997; Hagekull, 1994; Kagan & Snidman, 1999; Maziade, et al., 1990). Research has shown that certain temperamental traits are likely to create discord and excessive stress that leads to children's behavioral problems.

The problem, however, is not that the behavioral style is abnormal but, rather, that it is a poor-fit or an incompatible relationship between the temperament of the child and the parent's or teacher's values and expectations (Carey, 1998). There are children with a variety of temperaments and behaviors in every early education classroom. To handle certain children, teachers need to make some alterations that will promote the fit of the social situation to the behavioral style of the child (Carey & McDevitt, 1995). Relatively fixed programs such as DIP classrooms can be rearranged to a small degree to fit the special needs and learning styles of individual children, which might produce more stress for children.

Maternal Parenting Stress and Children's Stress Behaviors

As a family variable, maternal parenting stress was included in this study and higher levels of maternal stress were expected to be a significant predictor of children's stress. Consistent with previous studies in the U.S. (e.g. Anthony et al.,

2005; Danseco & Holden, 1998; Goldberg et al., 1997; Stormont, 1998), maternal parenting stress was related to children's behavior problems in this Korean sample. Children showed more stress behaviors if their mothers reported higher levels of stress.

Previous studies suggest that parenting stress strongly affects parenting behavior and children's development. Although the construct of parenting stress was originally developed for clinical use for high-risk families (Abidin, Flens, & Austin, 2006), parenting stress is also prevalent among families who may not be in need of clinical intervention. In recent studies on daily parenting stress with families not receiving clinical support, maternal stress related to the role of parenting significantly predicted child behavioral problems (e.g. Anthony, et al., 2005; Crnic & Low, 2002; Crnic, et al., 2005). Three possible explanations may be considered for this influence of parenting stress on the child.

First, maternal stress could be directly transferred to children through the overall affective context in the family. In a family with a stressed and distressed mother, children can experience an emotional environment filled with reduced responsiveness, inconsistent emotional expression, or hostile interaction. Such a negative affective climate can result in children who are overly sensitive and who exhibit stress-related classroom behaviors (Denham et al., 1997).

Second, parenting behavior may mediate the linkage of parenting stress and children's stress. Deater-Deckard (1998) addressed hypotheses regarding the role of parenting stress on children's development. Parenting stress influences parenting behavior with more stress associated with poorer parenting behavior. Research has

shown that parents with greater levels of parenting stress tend to have more authoritarian parenting styles, more negative interactions with their children, and less involved and responsive behaviors (e.g. Belsky, Woodworth, & Crnic, 1996; Deater-Deckard & Scarr, 1996; Stoiber & Houghton, 1994). Previous literatures have also shown the relationship between parenting behaviors and children's outcomes (e.g. Baumrind, 1993; Maccoby & Martin, 1983). Children's problematic behaviors are likely to be associated with harsh, negative, and inconsistent parenting, and warm and involved parenting relates to positive outcomes for children. High levels of parenting stress are related to more negative parenting behaviors, which might be in turn related to negative children's outcomes.

Finally, the same stressors of the mother might also affect the child as well. Same stress events or stress factors could produce similar stress reaction in both the mother and the child. These stressors can be chronic adversity such as poverty or life events such as moving.

Parenting stress in this study was measured by the PSI-SF, which consists of three subscales; Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. In further analyses on parenting stress subscales, Parent-Child Dysfunctional Interaction appeared to be the strongest predictor of children's stress behaviors. This result is somewhat different from previous studies in the U.S. that showed a strong association between children's behavior and the parental distress domain subscale (e.g. Anthony, et al., 2005; Benzies, et al, 2004; Matthew, 2006). In this Korean sample, dyadic interaction between mother and child is a more powerful predictor of children's stress behaviors than individual characteristics of each mother

and child, such as mother's distress and the child's temperamental difficulty. The Parent-Child Dysfunctional Interaction subscale refers to parent's expectations and satisfactions with their child, measuring if a child fails to meet parents' expectations and if interactions with child are not reinforcing. One possible explanation for the high prediction of this subscale could reflect mother's unrealistic or excessive expectations for her child, which is consistent with Korean educational expectations. The mother who has expectations for her child that are not developmentally appropriate might experience stress, which acts to negatively influence parenting behaviors such as harsh discipline and eventually may have deleterious effects on children's behaviors (Deater-Deckard & Scarr, 1996).

Determinants of Children's Stress Behaviors

A major purpose of this study was to examine the independent effect of classroom practices on children's stress behaviors after controlling for other relevant variables. Among all of the variables including child and family factors, classroom practice was expected to have the most significant influence on children's stress behaviors. As expected, results demonstrated the independent effect of classroom practices on children's stress behaviors. Classroom practice was a significant predictor after controlling for other variables, including overall classroom quality, gender and temperament of the child, and parenting stress of the mother. Considering that prior research has focused only on the relationship between classroom practices and children's stress behaviors both in the U.S. and Korea (e.g. Burts et al., 1990; 1992; 1998; Kim, 2001), current findings provided a unique opportunity to explore

the relationship in the context of overall quality of classroom and child and family variables. As the serial studies of Burts and her colleagues on classroom practices and children's stress behaviors did not include environmental variables, it was difficult to know if the classroom practice effect was confounded by other variables. In this study, because the contributions of other stress related factors were also examined, this conclusion is more definitive.

In the results of the hierarchical multiple regression analysis, gender and maternal parenting stress were the predictors of children's stress behaviors of child and family variables. Child temperament was not a significant predictor of children's stress behaviors in the classroom. Considering that parenting stress was reported by mothers and that children's stress behaviors were assessed in the classroom by observers, this linkage between the two outcomes is notable. Maternal parenting stress affects children's outcomes in the classroom setting as well as in the home. Clearly this implicates the important role and effect of mothers on children's development even outside the home. Therefore, family variables should be taken into account in the study design although the main focus is on educational variables outside of the home.

In this study, child and family variables were included not as main variables but as control variables to verify the independent effect of classroom practices on children's stress. They were chosen due to the evidence, replicated in this study, that differences among these variables are related to children's stress. Despite this, most studies on DAP and children's development have explored the effects of DAP in isolation (Van Horn, Karlin, Ramey, Aldridge, & Snyder, 2005). This study suggests

that there is a role for family and child variables in children's stress outside of the classroom; and, therefore, the implication is that the effects of classroom practices should be examined in relation to other nonschool variables to gain the most complete understanding of all relevant influence.

Implications

The findings of this study have implications for early childhood educators and policy makers as well as parents. It suggests that classroom practice is an important predictive variable of children's stress behaviors in Korea. Children in the DIP classrooms exhibited much more stress behaviors than children in the DAP classrooms. These results have many implications under the current environment of increased pressure on young children for formal academic achievement.

The concept of Developmentally Appropriate Practice, originally published in 1987 and revised in 1997 by NAEYC, has changed the thinking and discourse about practices in early childhood programs, and has been adopted extensively by educators, policy makers, and businesses (Raines & Johnston, 2003). Although a large body of research has demonstrated the positive effect of DAP on a variety of children's outcomes such as cognitive and social development (e.g. Bryant, et al., 1994; Burts, et al., 1993; Frede & Barnett, 1992; Gelzheiser, Griesemer, Pruzek, & Meyers, 2000; Huffman & Speer, 2000), studies on the relationship between DAP and emotional aspects of children are relatively few. This study adds to the body of existing literature and understanding of how DAP influences on children's emotional outcomes by taking into consideration children's stress.

NCLB has put pressure on schools to improve their students' academic achievement, and to demonstrate progress through an annual assessment system. Children's achievement in reading and mathematics has been assessed and reported from grade 3 through grade 8 (US Department of Education, 2007). Although most states do not test children below grade 3, the U.S. Department of Health and Human Services has begun a testing program, the National Reporting System (NRS) for Head Start children at the age of 4 and 5 to assess program quality (The Commission on No Child Left Behind, 2007). In addition, *NCLB* provides grants to literacy programs in private pre-K programs through Early Reading First. States and districts are encouraged to link their pre-K programs to elementary programs under *NCLB* and create a continuous pre-K through grade 3 system (The Commission on No Child Left Behind, 2007). The current *NCLB* era of increased pressure to demonstrate increased performance might lead to a rise in expectations for the basic skills of younger children and the emphasis on formal and academic focused directed approaches to the detriment of children's well being. Current findings showing the negative effect of DIP on children's stress in Korea where academic focused directed practice in education is already predominant, can be a caution for the U.S.

Although there is no comparable educational law in Korea, it is a society that places a high value on academic achievement traditionally and an academically focused program for the early years has predominated. The pressure resulting from the emphasis on academic achievement and the educationally competitive environment has been pushed down to younger children. Children in Korea today experience academic pressure and much stress in and out of school. Parents and

educators keep pushing young children toward academic success without considering their emotional development and needs. Indeed, many clinical cases of excessive stress due to excessively formal academic instruction have been reported in Korea (Lee, 2006). As young children today are exposed to multiple stressors outside the school, additional stress from an inappropriate curriculum and academic focused formal instruction may leave children even more vulnerable and unable to cope effectively. The result of negative effect of DIP on children's stress in this study is a caution for the academically focused educational environment of Korea. It suggests that classroom practice in child care centers should provide a setting that is developmentally appropriate and reduce children's stress.

It is also notable that the results of the relationship between DAP and children's stress behaviors in the U.S. was replicated in Korea despite the cultural difference with the U.S. Since the publication of the 1987 DAP guidelines, the applicability of DAP to children from diverse cultures was questioned (Charlesworth, 1998a, 1998b; Lubeck, 1998a, 1998b). The current study suggests the possibility of generalization of DAP ideas to various cultures and nations as well as the U.S. Although the DAP guidelines was originally developed to support program accreditation for early childhood programs, it has provided guidance for teachers, administrators, and policy makers to work on early childhood curriculum content and standards, evaluation and accountability, and teacher education. Current results add an understanding of how DAP influences on children's development to the body of existing literature. More importantly, this study explored this relationship for Korean children.

Many behavioral problems of children begin to emerge in the preschool period, and tend to be less responsive to interventions as they grow older and dysfunctional patterns become well established (Benzies, et al., 2004; Stormont, 2002; Webster-Stratton, 1997). Identification of factors that predict stress during the early years would facilitate early intervention to assist families with children at risk of stress and behavior problems. DAP, which is based on the needs of young children and how to learn, must be the approach that would produce a low-stress classroom environment for young children.

Consistent with the literature (Beck, et al., 2004; Crnic, et al., 2005; Crnic & Low, 2002), maternal parenting stress was revealed to be strongly associated with children's negative outcomes in this study. Considering that the current study was focused on classroom practices and settings, this maternal stress on children's stress behaviors in classroom is notable. Although the direction or causality of the effects cannot be identified in this study, the relationship between maternal parenting stress and children's stress is clearly demonstrated, which implies that family variables should be taken into account even though a study focuses on educational settings. Most of previous research on DAP has examined the effects of DAP in isolation. These findings, showing the effects of family and child variables, and DAP on children's stress, could be an important step in seeking a more ecological understanding (Bronfenbrenner, 1979) of DAP's effects on children. Based on these results, several important variables that affect children's stress should be explored, focusing on the effects both of classrooms and of other variables outside school within an ecological framework.

This result also has implications for intervention programs. Interventions for the purpose of reducing children's stress may be more effective with efforts to reduce parents' stress. Interventions for children should be considered in the larger context in which children live, including the stress of their parents.

In Korea, it was only recently that researchers became interested in parenting stress and its effect on children. Studies of parenting stress have mainly focused either on factors that predict parenting stress (e.g. Kang & Cho, 1999; Kim & Cho, 2000; Moon, 2004) or address the relationship of parenting stress, parenting behaviors, and parenting efficacy (e.g. Kim & Do, 2004; Suh, et al., 2003). Relatively little attention has been given to parenting stress that may affect children's outcomes. Current results show that parenting stress should be explored in the larger context.

It is also important to note that dysfunctional interaction between mother and child was a significant predictor of children's stress behaviors. This Parent-Child Dysfunctional Interaction subscale refers to parent's expectations and interactions with their child. Children were more likely to exhibit stress behaviors if their mothers reported lower levels of positive interaction and satisfaction with their children. This could be due to unrealistic or excessive academic expectations for her child on the part of Korean mother which may affect children's stress behaviors in the classroom. This results also suggests that dyadic interaction has more important effects rather than separate characteristics of mother and child on children's development, implying the importance of the larger contexts in which children and parents exist in research and interventions with young children's development.

Limitations

In interpreting the findings of this study, there are several limitations that should be made explicit. First, the findings have limited generalizability because of the representativeness of the sample. The findings, therefore, should be treated with caution until they are replicated with more representative samples of child care programs and children. As high quality of child care classrooms were selected for this study, we are unable to say if this result of relationship between classroom practices and children's stress would apply to average and low quality child care classrooms in the same manners. It is also likely that families in this study are from more advantaged backgrounds, considering parental education levels and family income. Given these problems and the relatively small sample size, it is unlikely that the sample can be considered representative.

Second, this study does not establish causal relations among variables. Although mainly focused on the effect of study variables on children's stress behaviors, this study was based on correlation and limited to identification of the direction of the relationship. For example, the supposition that parenting stress affected children's stress was based on the literature; however, we are unable to say whether parenting stress precedes children's stress or whether children's stress contributes to parenting stress. Longitudinal designs or studies on the effect of intervention programs would allow for better understanding of any possible causal pathways among these variables.

Third, there are likely to be other variables not measured here that affect children's stress or mediate the relationship between classroom practices and

children's stress. There has been research that addressed the effects of family variables like family income, parental education, marital quality, and paternal parenting stress on children's problematic behavior and stress (e.g. Baker et al., 2002; Benzies, et al., 2004; Burts, et al., 1992; Hart, et al., 1998). It would provide a more clear understanding of the relationship between classroom practices and children's stress if a variety of relevant factors is considered in broader context.

The last limitation relates to measurement. In this study, child temperament was reported by the mother, which could produce a relatively low relationship between child temperament and stress behaviors in the classroom. It is likely that if we had used a teacher's rating of child temperament instead of maternal rating, the strength of the relationship between the two variables might have been different. Using only the mother as the informant may also result in response bias that could either deflate or inflate the relationship between the two variables. As for assessing children's stress, a multi-informant approach such as teacher's report might also improve the validity. For measuring children's stress behaviors, there was another limitation; validity of the measure. Without report about validity such as might be obtained through a factor analysis on the CCSBI, we cannot assure that the measure would fairly assess the construct of children's stress behaviors in the classroom.

Suggestions for Future Research

The current findings suggest the effect of classroom practices on children's stress behaviors. Family and child variables, gender and temperament of child, and parenting stress of mother were also related to children's stress. Although they were

included in this study to verify the independent effect of classroom practices, family and child variables should become the main variables in future research. Assessment of these variables in isolation is not sufficient to examine their relations to children's stress. It is necessary to consider family, child, and school together to better understand children's stress. This study demonstrates the independent effects of several variables on children's stress behaviors. Future studies should expand on these findings and focus on the effects both of classrooms and of other variables outside school in a theoretical framework of ecological theory.

Ecological theory (Bronfenbrenner, 1979) provides a framework for understanding how child and environmental factors impact children's behaviors. In the view of ecological theory, development is always embedded in and expressed through behavior in one's environment. Children are surrounded by a complex environment, four levels of interdependent structures including the microsystem, the mesosystem, the exosystem, and the macrosystem. Just like children, classrooms exist within a context of the school and community within which they reside. Children and classrooms do not exist in a vacuum. To understand the effect of classroom practices on children clearly, research is needed to go beyond simplistic models focusing on the effect of a single variable, like DAP, and consider broader characteristics of the child, classroom, teacher, school, and community as well as classroom practice. Research in an ecological framework would provide a more clear understanding of the effect of classroom practices on children and what educators can do to help them.

Finally, this study was based on correlations, which have limited capacity to identify causality among variables. Future studies should seek to replicate the present

findings with longitudinal designs, and to investigate causal models of the effects of family, child, and classroom variables on children's stress. Current findings should also be replicated in further more representative samples. As child care classrooms in this study were limited to those of high quality, it is necessary to explore the effect of classroom practices on children's stress in broader samples of child care classrooms.

Conclusion

Within the theoretical framework that developmentally appropriate practice would be beneficial to children's stress based on constructivism, this study explored the relationship between classroom practices and children's stress behaviors in Korea. The results showed that classroom practice was a significant predictor of children's stress behaviors in Korean child care, consistent with those of the U.S. Children in DAP classrooms exhibited less stress behaviors than children in DIP classrooms. Family and child variables, gender and child temperament and maternal parenting stress were also related to children's stress behaviors.

During the past 20 years, many researchers have explored teacher, principal, and parent beliefs about DAP (Van Horn, et al., 2005; Zeng & Zeng, 2005), and relatively few have focused on the effects of DAP on children's development and stress. This study suggests that DAP, which is based on the needs of young children and their learning, is the approach that produces a low-stress classroom environment. Furthermore, the evidence of the roles of family and child variables in children's stress contributes to the existing research. Under the current environment of increased pressure for greater formal and academic achievement on the part of young children,

the effect of classroom practices on children's development should continue to be explored in a broader context including family and child variables.

APPENDIX A: Early Childhood Environment Rating Scale

ECERS-R Profile

Center/School: _____ Observation 1: $\frac{m}{m} - \frac{d}{d} / \frac{y}{y} - \frac{y}{y}$ Observer: _____
 Teacher(s)/Classroom _____ Observation 2: $\frac{m}{m} - \frac{d}{d} / \frac{y}{y} - \frac{y}{y}$ Observer: _____

	1	2	3	4	5	6	7	
I. Space & Furnishings (1-8)								1. Indoor space
Obs. 1 <input type="text"/> Obs. 2 <input type="text"/>								2. Furn. for routine care, play, & learning
average subscale score <input type="text"/>								3. Furn. for relaxation
								4. Room arrangement for play
								5. Space for privacy
								6. Child-related display
								7. Space for gross motor
								8. Gross motor equipment
II. Personal Care Routines (9-14)								9. Greeting/departing
<input type="text"/> <input type="text"/>								10. Meals/snacks
								11. Nap/rest
								12. Toileting/diapering
								13. Health practices
								14. Safety practices
III. Language-Reasoning (15-18)								15. Books and pictures
<input type="text"/> <input type="text"/>								16. Encouraging children to communicate
								17. Using language to develop reasoning skills
								18. Informal use of language
IV. Activities (19-28)								19. Fine motor
<input type="text"/> <input type="text"/>								20. Art
								21. Music/movement
								22. Blocks
								23. Sand/water
								24. Dramatic play
								25. Nature/science
								26. Math/number
								27. Use of TV, video, and/or computers
								28. Promoting acceptance of diversity
V. Interaction (29-33)								29. Supervision of gross motor activities
<input type="text"/> <input type="text"/>								30. General supervision of children
								31. Discipline
								32. Staff-child interactions
								33. Interactions among children
VI. Program Structure (34 - 37)								34. Schedule
<input type="text"/> <input type="text"/>								35. Free play
								36. Group time
								37. Provisions for children with disabilities
VII. Parents and Staff (38-43)								38. Provisions for parents
<input type="text"/> <input type="text"/>								39. Provisions for personal needs of staff
								40. Provisions for professional needs of staff
								41. Staff interaction and cooperation
								42. Supervision and evaluation of staff
								43. Opportunities for professional growth
Average Subscale Scores								SPACE & FURNISHINGS
								PERSONAL CARE
								LANGUAGE-REASONING
								ACTIVITIES
								INTERACTION
								PROGRAM STRUCTURE
								PARENTS & STAFF

APPENDIX B: Classroom Practices Inventory

Rating Scale:

- 1=not at all like this classroom
2=very little like this classroom
3=somewhat like this classroom
4=much like this classroom
5=very much like this classroom

Part 1: Program/ Activity Focus

- | | | | | | |
|--|---|---|---|---|---|
| 1. Children select their own activities from a variety of learning areas the teacher prepares, including dramatic play, blocks, science, math, games and puzzles, books, recordings, art, and music. | 1 | 2 | 3 | 4 | 5 |
| 2. Large group, teacher directed instruction is used most of the time. Children are doing the same things at the same time. | 1 | 2 | 3 | 4 | 5 |
| 3. Children are involved in concrete, three-dimensional learning activities, with materials closely related to children's daily life experiences. | 1 | 2 | 3 | 4 | 5 |
| 4. The teacher tells the children exactly what they will do and when. The teacher expects the children to follow her plans. | 1 | 2 | 3 | 4 | 5 |
| 5. Children are physically active in the classroom, choosing from activities the teacher has set up and spontaneously initiating many of their own activities. | 1 | 2 | 3 | 4 | 5 |
| 6. Children work individually or in small, child-chosen groups most of the time. Different children are doing different things. | 1 | 2 | 3 | 4 | 5 |
| 7. Children use workbooks, ditto sheets, flashcards, and other abstract or two-dimensional learning materials. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|---|---|---|---|---|---|
| 8. Teachers ask questions that encourage children to give more than one right answer. | 1 | 2 | 3 | 4 | 5 |
| 9. Teachers expect children to sit down, watch, be quiet, and listen, or do paper and pencil tasks for major periods of time. | 1 | 2 | 3 | 4 | 5 |
| 10. Reading and writing instruction emphasizes direct teaching of letter recognition, reciting the alphabet, coloring within the lines, and being instructed in the correct formation of letters. | 1 | 2 | 3 | 4 | 5 |
| 11. Teachers use activities such as block building, measuring ingredients for cooking, woodworking, and drawing to help children learn concepts in math, science, and social studies. | 1 | 2 | 3 | 4 | 5 |
| 12. Children have planned lessons in writing with pencils, coloring predrawn forms, tracing, or correct use of scissors. | 1 | 2 | 3 | 4 | 5 |
| 13. Children use a variety of art media, including easel and finger painting, and clay, in ways of their choosing. | 1 | 2 | 3 | 4 | 5 |
| 14. Teachers expect children to respond correctly with one right answer. Memorization and drill are emphasized. | 1 | 2 | 3 | 4 | 5 |
| 15. When teachers try to get children involved in activities, they do so by stimulating children's natural curiosity and interest. | 1 | 2 | 3 | 4 | 5 |
| 16. The classroom environment encourages children to listen to and read stories, dictate stories, notice print in use in the classroom, engage in dramatic play, experiment with writing by drawing, copying, and inventing their own spelling. | 1 | 2 | 3 | 4 | 5 |
| 17. Art projects involve copying an adult-made model, coloring predrawn forms, finishing a project the teacher has started, or following other adult directions. | 1 | 2 | 3 | 4 | 5 |
| 18. Separate times or periods are set aside to learn material in specific content areas such as math, science, or social studies. | 1 | 2 | 3 | 4 | 5 |
| 19. Children have daily opportunities to use pegboards, puzzles, legos, markers, scissors or other similar materials in ways the children choose. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|--|---|---|---|---|---|
| 20. When teachers try to get children involved in activities, they do so by requiring their participation, giving rewards, disapproving of failure to participate. | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|

Part 2: Emotional Climate

- | | | | | | |
|--|---|---|---|---|---|
| 1. Teachers show affection by smiling, touching, holding, and speaking to children at their eye level throughout the day, but especially at arrival and departure times. | 1 | 2 | 3 | 4 | 5 |
| 2. The sound of the environment is marked by pleasant conversation, spontaneous laughter, and exclamations of excitement. | 1 | 2 | 3 | 4 | 5 |
| 3. Teachers use competition, comparison, or criticism as guidance or discipline techniques. | 1 | 2 | 3 | 4 | 5 |
| 4. Teachers talk about feelings. They encourage children to put their emotions (positive and negative) and ideas into words. | 1 | 2 | 3 | 4 | 5 |
| 5. The sound of the environment is characterized either by harsh noise or enforced quiet. | 1 | 2 | 3 | 4 | 5 |
| 6. Teachers use redirection, positive reinforcement, and encouragement as guidance or discipline techniques. | 1 | 2 | 3 | 4 | 5 |

APPENDIX C: Classroom Child Stress Behavior Instrument

MANNERISMS CODES / CLASSROOM OBSERVATION

<PASSIVE>

1. Physically

- a. withdrawn
(physically removing self from group activity, appears to be doing nothing)
- b. excessive fatigue (e.g. dozes, complains of tiredness)
- c. wanders aimlessly
- d. head on desk, slumping, lying down
- e. sitting inappropriately in chair
- f. standing at inappropriate times
- g. yawning &/or stretching

2. Facially

- a. frowning, scowling, pouting, sulking, worried look
- b. has blank dull vacant expression / daydreaming
- c. gazing / looking around the room

3. Non-responsive/Negative

- a. refused to do work, gives up
- b. ignores friendly overtures from others

4. Onlooking

(alone, stepping back from activity, watching others' activity)

<ACTIVE>

(Self with Self)

5. Automanipulation

- a. hand / hand manipulation
- b. nose picking

- c. mouth manipulation
- d. plays with / sucks hair
- e. masturbation / playing with self / exposing self
- f. ear pulling
- g. clothing manipulation(twisting, biting)
- h. scratching
- i. rubbing / picking body parts

6. Repetitive / Restricted Movement

- a. rocking
- b. repetitive leg and arm movement
- c. shuffling (repetitive foot movement while standing)
- d. facial twitches
- e. hand tremors

7. Wiggles / Squirms

8. Self Destructive

(head banging, slapping self, biting self, self name-calling)

9. Removes Self From Mainstream

- a. runs away, hiding, sneaking
- b. slump or fetal position as a means of removal

10. Physiological Reactions

- a. temper tantrums
- b. wets or soils clothes
- c. throws up
- d. cries, near tears
- e. complains of feeling sick (stomachache)

11. Unusual Noises, Heavy Sighing

(Self with Others)

12. Hostile / Aggressive

- a. sassy/back talk
- b. verbal hostility, disruptive

- c. bullying or threatening children
- d. physical hostility, fights, pushes
- e. argues
- f. instigating others to gang up on other children
- g. making fun of other children

13. Dependency

- a. stretching and leans in order to see other students' work during specified independent work
- b. whines or asks for mother
- c. teacher attention seeking

14. Verbal Dysfunctions

- a. refuses to talk in group
- b. talking at inappropriate time
- c. nervous inappropriate laughter
- d. talks fast
- e. compulsive talking
- f. stutters

15. Touching Others at Inappropriate Times/Ways

(Self with Object)

16. Destructive

- a. destroy toys and games
- b. destroys worksheet or workbook
- c. doodling on desk

17. Nondestructive

- a. playing with toy/object at inappropriate time & inappropriate way
- b. doodling on paper
- c. pencil tapping
- d. clumsy or fumbling behavior
- e. sucking/biting object

APPENDIX D: Temperament Rating Scale

Instructions: Please read carefully before starting:

On the next pages you will see a set of statements that describe children's reactions in every day life situations. We would like you to tell us what your child's reaction is likely to be in those situations. Please read each statement and decide whether it is a "true" or "untrue" description of your child's reaction. Use the following scale to indicate how well a statement describes your child:

- | Circle # | If the statement is: |
|----------|--------------------------------|
| 1 | extremely untrue of your child |
| 2 | slightly untrue of your child |
| 3 | slightly true of your child |
| 4 | extremely true of your child |

If you cannot answer one of the items because you have never seen the child in that situation, for example, if the statement is about the child's reaction to your singing and you have never sung to your child, then circle NA (not applicable).

Please be sure to circle a number or NA for every item.

1	2	3	4	NA
extremely	slightly	slightly	extremely	not
untrue	untrue	true	true	applicable

My child:

1. actively plays in the water when taking a bath
1 2 3 4 NA
2. actively moves about (runs around, climbs up the slide) in the playground.
1 2 3 4 NA
3. appears to feel cramped and walks back and forth, if the weather is bad and he/she must stay indoors,
1 2 3 4 NA
4. enjoys physical activities which uses his/her arms and legs.
1 2 3 4 NA
5. is able to distinguish unusual odor and expresses it.
1 2 3 4 NA
6. is sensitive to different color (e.g. he/she may say that certain colors are pretty or ugly)
1 2 3 4 NA
7. comments on changes in parents' appearance, such as changing hair style and new clothes.
1 2 3 4 NA
8. will look for another toy or do something else (show other behaviors), after playing with a certain toy for a while.
1 2 3 4 NA
9. The time it takes for the child to fall asleep after getting into bed is not consistent.
1 2 3 4 NA
10. moves around a lot when he/she is being dressed.
1 2 3 4 NA
11. moves his/her body excessively (e.g. kicking his/her legs or moving his/her upper body) while eating.
1 2 3 4 NA

1	2	3	4	NA
extremely	slightly	slightly	extremely	not
untrue	untrue	true	true	applicable

My child:

12. is engaged more in quiet activities such as making things or reading picture books.

1 2 3 4 NA

13. seldom moves around when he/she is riding in the car.

1 2 3 4 NA

14. strongly expresses whether he/she likes (e.g. by making a loud noise) or dislikes a new toy.

1 2 3 4 NA

15. does not express whether he/she likes being bathed.

1 2 3 4 NA

16. immediately notices if the food tastes different from what he/she has had before.

1 2 3 4 NA

17. does not show special reaction when he/she bumps into something or when he/she is lightly pinched.

1 2 3 4 NA

18. shows discomfort and constantly whines, when he/she is sick.

1 2 3 4 NA

19. appears to be fine and does not cry when left alone.

1 2 3 4 NA

20. usually gets along well with them after the first or second visit, when he/she visits other homes.

1 2 3 4 NA

21. quickly overcomes tension and shyness towards adult strangers (within 10 minutes).

1 2 3 4 NA

22. quickly adapts to new schedule when there is a change in his/her routine schedule (e.g. he/she cannot go to the child care)

1 2 3 4 NA

23. gets at ease with the strange place within 10 minutes.

1 2 3 4 NA

1	2	3	4	NA
extremely	slightly	slightly	extremely	not
untrue	untrue	true	true	applicable

My child:

24. will fall asleep without much difficulty within the next day or two, if he/she must go to bed in a different place.

1 2 3 4 NA

25. dislikes or cries when he/she must go to bed in a strange place.

1 2 3 4 NA

26. approaches other children and plays with them, when playing in the park or visiting other homes.

1 2 3 4 NA

27. is able to relax in the strange environment, when he/she goes on vacation.

1 2 3 4 NA

28. is able to approach and easily become friendly with new adult visitors in his/her home.

1 2 3 4 NA

29. does not get nervous when he/she visits a strange place.

1 2 3 4 NA

30. will easily accede to things that he/she does not like (clipping nails or combing hair) if you make it enjoyable

1 2 3 4 NA

31. gets up around the same time on weekends (within 1 hours) as he/she does on weekdays.

1 2 3 4 NA

32. usually goes to bed around the same time every day.

1 2 3 4 NA

33. usually gets up around the same time every day.

1 2 3 4 NA

Please check back to make sure you have completed all items by marking a number or "NA".

Thank you very much for your help!

APPENDIX E: Parenting Stress Index-Short Form

Instructions:

This questionnaire contains 36 statements. Read each statement carefully. For each statement, please focus on the child attending this child care center, and circle the response that best represents your opinion.

Circle the SA if you strongly agree with the statement.

Circle the A if you agree with the statement.

Circle the NS if you are not sure.

Circle the D if you disagree with the statement.

Circle the SD if you strongly disagree with the statement.

While you may not find a response that exactly states your feelings, please circle the response that comes closest to describing how you feel. **YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.**

Circle only one response for each statement, and respond to all statements.

SA	A	NS	D	SD
strongly agree	agree	not sure	disagree	strongly disagree

- I often have the feeling that I cannot handle things very well.
SA A NS D SD
- I find myself giving up more of my life to meet my children's needs than I ever expected.
SA A NS D SD
- I feel trapped by my responsibilities as a parent.
SA A NS D SD
- Since having this child, I have been unable to do new and different things.
SA A NS D SD
- Since having a child, I feel that I am almost never able to do things that I like to do.
SA A NS D SD
- I am unhappy with the last purchase of clothing I made for myself.
SA A NS D SD
- There are quite a few things that bother me about my life.
SA A NS D SD
- Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend).
SA A NS D SD
- I feel alone and without friends.
SA A NS D SD
- When I go to a party, I usually expect not to enjoy myself.
SA A NS D SD
- I am not as interested in people as I used to be.
SA A NS D SD
- I don't enjoy things as I used to.
SA A NS D SD
- My child rarely does things for me that make me feel good.
SA A NS D SD

SA	A	NS	D	SD
strongly agree	agree	not sure	disagree	strongly disagree

14. Sometimes I feel my child doesn't like me and doesn't want to be close to me.

SA A NS D SD

15. My child smiles at me much less than I expected.

SA A NS D SD

16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.

SA A NS D SD

17. When playing, my child doesn't often giggle or laugh.

SA A NS D SD

18. My child doesn't seem to learn as quickly as most children.

SA A NS D SD

19. My child doesn't seem to smile as much as most children.

SA A NS D SD

20. My child is not able to do as much as I expected.

SA A NS D SD

21. It takes a long time and it is very hard for my child to get used to new things.

SA A NS D SD

For the next statement, choose your response from the choices "1" to "5" below.

22. I feel that I am:

1. not very good at being a parent.
2. a person who has some trouble being a parent
3. an average parent.
4. a better than average parent
5. a very good parent

23. I expected to have closer and warmer feelings for my child than I do and this bothers me.

SA A NS D SD

24. Sometimes my child does things that bother me just to be mean.

SA A NS D SD

25. My child seems to cry or fuss more often than most children.

SA A NS D SD

SA	A	NS	D	SD
strongly agree	agree	not sure	disagree	strongly disagree

26. My child generally wakes up in a bad mood.

SA A NS D SD

27. I feel that my child is very moody and easily upset.

SA A NS D SD

28. My child does a few things which bother me a great deal.

SA A NS D SD

29. My child reacts very strongly when something happens that my child doesn't like.

SA A NS D SD

30. My child gets upset easily over the smallest thing.

SA A NS D SD

31. My child's sleeping or eating schedule was much harder to establish than I expected.

SA A NS D SD

For the next statement, choose your response from the choices "1" to "5" below.

32. I have found that getting my child to do something or stop doing something is

1. much harder than I expected.
2. somewhat harder than I expected.
3. about as hard as I expected.
4. somewhat easier than I expected.
5. much easier than I expected.

For the next statement, choose your response from the choices "10+" to "1-3."

33. Think carefully and count the number of things which your child does that bother you. (For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.)

10+ 8-9 6-7 4-5 1-3

34. There are some things my child does that really bother me a lot.

SA A NS D SD

35. My child turned out to be more of a problem than I had expected.

SA A NS D SD

36. My child makes more demands on me than most children.

SA A NS D SD

APPENDIX F: Demographic Questionnaire

Please Print

Child's Name _____ Date of Birth _____.

Are you the mother or father of above child? Mother / Father

Age of Mother _____ Age of Father _____.

Education of Mother:

Some middle school	_____.
High school diploma	_____.
Bachelor's degree	_____.
Master's degree or above	_____.

Education of Father:

Some middle school	_____.
High school diploma	_____.
Bachelor's degree	_____.
Master's degree or above	_____.

Annual family income:

\$13,000 - \$25,000	_____.
\$25,000 - \$38,000	_____.
\$38,000 - \$51,000	_____.
Over \$51,000	_____.

When did your child start THIS child care center?

From _____ (Month/Year) to present

Was your child's first child care experience at this center? If not, please identify the length of time of other child care centers.

From _____ (Month/Year) to _____ (Month/Year)

From _____ (Month/Year) to _____ (Month/Year)

Siblings and birth order

Number of brothers _____.

Number of sisters _____.

This child is the _____ oldest child in birth order.

My child takes the extracurricular lesson(s) such as the following (Check all that apply)

Korean _____.

Math _____.

English _____.

Art _____.

Music _____.

Sports _____.

Other activities (describe) _____.

Approximately how many hours a week does your child participate in these activities?

_____ Hours per week

Thank you for your time in completing this questionnaire.

APPENDIX G: Teacher Questionnaire

Please print

Your Age: _____ years old

Your Education:

Child care teacher certificate _____.

Some college _____.

College graduate _____.

Higher degree _____.

How long have you been at THIS child care?

From _____ (Month/Year) to present

Have you worked at other child care centers or preschools? Please provide approximate length of time worked at other centers.

From _____ (Month/Year) to _____ (Month/Year)

From _____ (Month/Year) to _____ (Month/Year)

Name of your classroom and center: _____ class at _____ center

Number of children in your classroom: _____ children

Number of teachers in your classroom: _____ teachers

Thank you for your time in completing this questionnaire.

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