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SOCIOECONOMIC, FAMILY, AND MATERNAL INFLUENCES ON BEHAVIOR AND VERBAL ABILITY IN YOUNG JAMAICAN CHILDREN

By

Elizabeth Ansel Kirsch

A DISSERTATION

Submitted to

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ABSTRACT

SOCIOECONOMIC, MATERNAL, AND FAMILY INFLUENCES ON BEHAVIOR AND VERBAL ABILITY IN YOUNG JAMAICAN CHILDREN

By

Elizabeth Ansel Kirsch

For young children, self-regulation and the ability to use language for communication are known to make critical contributions to school success. It is also known that SES, maternal psychopathology, and family cohesion influence the development of these capacities. Virtually all evidence about these relationships, however, comes from research in Western developed countries. Parents and teachers in developing countries, of course, also want to improve early childhood education, but for economic and cultural reasons, there are limits in the extent to which this evidence can be generalized to developing countries. The goal of the current study, therefore, was to determine whether these contributors to child development are similar for Jamaica, a developing country. Jamaica is experiencing serious educational and economic problems but little is known about the development and functioning of its children and families. The current study begins to address this deficit in the knowledge base by focusing on 151 3- to 6-year-olds and their mothers. Based on the Mothers' answers to the Brief Symptom Inventory and the Family Adaptability and cohesion Scale, each mother was rated on information on psychopathology, and each family was rated on family cohesion. Each

mother also provided information on her family's economic resources as well as information about her child's behavior problems for her answers to the Conners Parent Rating Scale. Finally, each child's verbal ability and puzzle-solving skill were assessed by the McCarthy Scales of Children's Abilities, a measure of intelligence that includes subscales such as verbal ability and puzzle-solving. Path analysis revealed that maternal psychopathology was positively related, and family cohesion negatively related, to behavior problems. The analysis also indicated that SES was positively related to puzzle-solving, and negatively related to psychopathology and behavior problems. Although the results showed that Jamaica and developed countries have some paths to child behavior problems, verbal ability, and puzzle-solving in common, they also revealed several differences, thus supporting both the culture-general and culture-specific perspectives. The results thus suggest that any attempt to ameliorate child behavior problems in school or at home must take the relation between family cohesion, maternal psychopathology, and child behavior into consideration.

DEDICATION

This dissertation is lovingly dedicated to

Jean and Irwin Becker,

whose loving support throughout this process was given unconditionally and with a belief that, when finished, despite the obstacles that occurred, I would never regret

any of the effort I put into my education.

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I would, in addition, like to thank Dr. Lauren J. Harris, who, while not officially on my committee, offered counsel, guidance, and support during the writing process.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES (continued)

LIST OF FIGURES

LIST OF FIGURES (CONTINUED)

INTRODUCTION AND LITERATURE REVIEW

Psychologists, educators, clinicians, and policy makers recognize the importance of early childhood (i.e., ages 3–8) as a time for encouraging, building, and strengthening the competencies needed for the child's successful transition from home to school (Pianta, 1999; Stipek, 2001; White, 1995). The ability to regulate one's own behavior, either alone or with the support of others, and the ability to use language to communicate with others are two of the most important contributors to a successful school experience for young children.

Competencies in the developmental areas discussed above help scaffold the child's successful integration into the social world (Richards, 1974; Vygotsky, 1930/1978). Failure, however, to master these skills early in life may be associated with serious behavioral, emotional, and learning difficulties at all stages of life – early childhood, middle and later childhood, adolescence, and adulthood (Committee on Early Childhood Pedagogy, Commission on Behavioral and Social Sciences and Education, & National Research Council, 2001). Three of the factors already generally known to play important roles in the process were chosen for study: socioeconomic status (Keating and Hertzman 1999; Stipek, 2001), maternal psychopathology (Campbell, 1987; Campbell & Ewing, 1990), and family functioning; Campbell & Pierce, 1996; Campbell, Pierce, March & Ewing, 1991, 1994).

Although most research studies on behavior regulation and language ability have been conducted in industrialized nations (Durbrow, 1999) interest in early childhood education extends as well to developing countries (Morrison & Milner, 1995). Indeed, the Committee on Early Childhood Pedagogy and collaborators (2001) has posited that universal early childhood education will be a reality in the not-too-distant future, thus making research in early childhood and its implications for education a topic for universal study.

Jamaica is one example of a developing country that has seen very few empirical studies on children (Lambert, Weisz, & Knight, 1989a). As a result, educators, physicians, psychologists, and others who work with young children rely on research conducted in developed and more economically stable countries (Lambert et al., 1989a). There are limits, however, to the extent to which we can generalize from one country to another, especially from developed to developing countries (Geertz, 1973). The vast differences in economic circumstances exert a powerful effect, both directly and indirectly, on the material, social, educational, and medical resources that are available to the child, and thus have immediate as well as long-term effects on the child's development (Keating and Hertzman 1999). For another example, there are cultural differences in many practices and beliefs that affect the socialization process, including the development and expression of emotion and behavior regulation (Lambert et al., 1989a; Valsiner 1989). Such differences also extend to

rules guiding when and how to express strong feelings (Lambert, Knight, Taylor, & Achenbach, 1994; Ekman & Davidson, 1994), rules governing parent-child interaction (Bronfenbrenner 1986; Durbrow 1999), beliefs about what is most important in the socialization process (Bronfenbrenner 1986; Durbrow 1999), and how to teach children new skills (Rogoff, Mistry, Goncu, & Mosier, 1993).

In Jamaica, there is a serious need for better information. In 1996, for example, the Jamaican Teachers Association asked the Chief Education Officer of the Ministry of Education to help them understand and manage the severe behavior problems that they were experiencing with children in all Jamaican schools (Morrison, Ipsa, & Milner, 1998). On previous occasions the Basic School [non-governmental schools for preschoolers (ages 3-6)] teachers voiced a concern about their children's lack of curiosity and their reluctance to participate in new activities (Morrison et al., 1998). These are especially worrisome inasmuch as curiosity and readiness to participate are normally characteristic of young children and indicate an interest in learning (Committee on Early Childhood Pedagogy et al., 2001).

The current study, therefore, has a two-fold goal. The first goal is to assess the contribution of socioeconomic status, maternal psychopathology, and family functioning to behavior regulation and language ability in young Jamaican children. The second goal is to determine whether the relation among these potential contributors to child

outcome is the same as that reported in the United States, Canada, and Europe.

The second goal is important for two reasons. First, even though the current study will not measure the effects of culture directly, the results can provide insight about the patterns of socioeconomic status, maternal psychopathology, and family functioning on child outcome. The current study, therefore, can contribute to the scientific dialogue on universal versus context-specific aspects of behavior in relation to these particular maternal, family, and socioeconomic variables. Second, by enhancing our understanding of how these influences work in Jamaica, we can begin to build a foundation of knowledge for Jamaican clinicians, educators, and policy makers to draw on as they grapple with the complex social issues in their country and as they plan programs for early childhood education.

The literature review to follow begins with a presentation of theoretical perspectives for the current study. It then reviews theory and research on the influence of culture in psychological research. After that, it examines developmental tasks of early childhood, followed by a discussion of the socialization process and those factors that influence its outcome – socioeconomic status, maternal psychopathology, and family functioning. Special attention is given to a discussion of Jamaican culture and its influence on the expectations, beliefs, values, and practices within the family. Figure 1 presents a model of the relations to be considered.

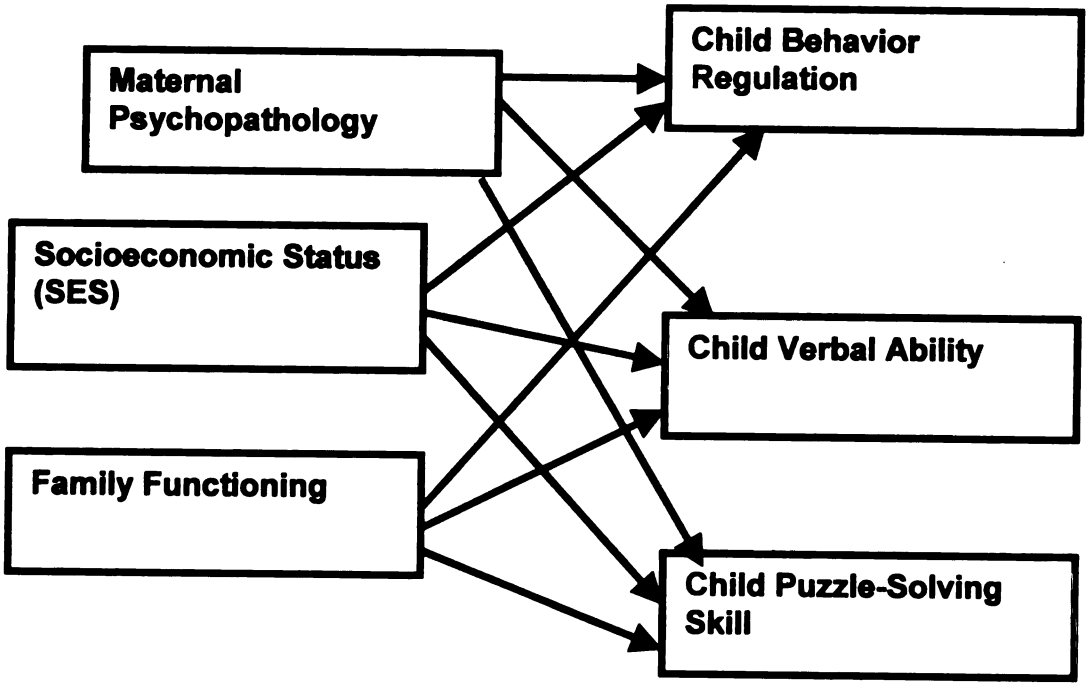


Figure 1: Conceptual Relations Among Variables

Theoretical Perspectives

Socioeconomic Psychosocial Integration

The overall perspective that guides this research is called Socioeconomic Psychosocial Integration, or SEP. SEP is not itself a theory of human development. Rather, it is a call for a new way to study and interpret influences on a call for a new way to study and interpret influences on developmental outcome. It posits that a successful theory must integrate knowledge across many disciplines. For psychology, some of the most important disciplines to integrate include education, sociology, social work, epidemiology, cultural anthropology, neurobiology, and neuroscience. SEP also sees conventional variables such as socioeconomic status to stand for much more than, for example, material resources, and instead to be a marker for highly complex processes that begin before birth and continue across the life-course. These include such identifiable social circumstances as attitudes and beliefs about education and the safety of one's neighborhood and that integrate neurobiological factors with experience [see Keating & Hertzman (1999) for a full discussion].

SEP also incorporates the concept of the "social gradient" to indicate the complex relation between socioeconomic status as it is conventionally understood and the relation between socioeconomic status and its multiple influences on psychosocial functioning [e.g., Case, Griffin, & Kelly (1999, 2001) and Tremblay (1999) for a full discussion]. Countries

or communities may have sharp social gradients indicating extremes of wealth and poverty, such as are found in Jamaica, or smoother gradients indicating less extreme differences. These different gradients can have very different effects on such psychosocial outcomes as maternal psychopathology, family cohesion (e.g., the ability of the family to function harmoniously), and child behavior problems. As statistical indicators, the gradients operate on the population level and not on the individual level so that psychosocial outcomes like those listed above will not necessarily be true for individuals, even though they may describe the population (Keating & Hertzman, 1999).

Social gradients, therefore, affect families at the population level and families are embedded in cultural beliefs and practices that may or may not be influenced by socioeconomic factors (Keating and Hertzman 1999), the next section will discuss theoretical perspectives concerning families and culture.

Culture, Context, and Families

Acknowledging the influence of culture and traditions on family, children, and schooling is important in understanding the relationships and expectancies among parents, family, and children (Durbrow, 1999; Geertz, 1973; Lambert, Knight, Taylor, & Newell, 1993; Rogoff et al., 1993). One theoretical stance taken toward the inclusion of cultural similarities and differences and their influence on child or family outcomes is cultural-

contextual theory (Cole, 1999), a theory that acknowledges the influence and interplay among culture, context, and developmental outcome.

In addition, scholars of the family (Bronfenbrenner 1986) generally acknowledge that families are organized to perform specific tasks and functions as prescribed by cultural and societal norms. One such task is to help integrate the child into the social world (Richards, 1974).

Scholars and researchers also acknowledge the welter of influences on the quality of family functioning and, in particular, childrearing. One of the approaches acknowledging these complexities is family systems theory. There are many such theories. All of them acknowledge the varieties of ways that families may organize, accommodate to its members, and influence child outcome.

According to the structural family systems theory (Minuchin 1992), for the family to fulfill its many obligations, it must form subsystems, each one with its specific role within the overall family organization. The parental subsystem generally assumes the major responsibility for child rearing, including teaching and shaping social behavior. Much of the extant research on child outcome focuses on parent-child interaction, often from the perspective of the nuclear family, found most often in the United States, Canada, and Europe. Families in Jamaica, however, often do not have the same organizational pattern as families in industrialized countries (Durbrow, 1999; Gopaul-McNicol, 1998, 1999), and therefore, may influence children differently.

Culture and the Research Process

As previously stated, the importance of cultural influences on development is now acknowledged in much psychological research. Often, however, the intellectual stance toward the characteristics of culture and their influence on the developmental process is not addressed directly (Durbrow, 1999; Gopaul-McNicol, 1999). Acknowledged in word, but not in content or approach to the research question, the use of culture as a variable can easily become a cliché, while the research process, including questions asked and the interpretation of results continues unchanged or unquestioned (Rogler, 1999).

There are at least two ways that consideration of culture affects the research process. The first addresses the culture-general and culture-specific nature of the research question (Lambert et al., 1989a)(e.g., Do parents in all cultures have the same goals for the socialization of their children?). There is convincing evidence that socialization goals are strongly influenced by cultural values and beliefs. For example, Gonzalez-Ramos, Zayas, and Cohen (1998) found that American mothers placed high value on creativity and independence in the socialization of their preschool children, whereas for Puerto Rican mothers, what was important was loyalty to family and respect for others. From a culture-general perspective, both Puerto Rican and American mothers accepted responsibility for the socialization of their young children, but from a culture-specific perspective, their goals were different and, most likely,

would result in different types of guidance and interaction with their children.

Views about the similarity or differences among cultures also influence the research process itself. One model of cultural influences on the research process posits three ways to conceptualize the influence of culture on development (Bukowski & Sippola, 1998; Geertz, 1973). The first way is the details model, which states that cultures differ only in small details, so that instruments standardized for one culture may be used without modification across cultures and not diminish outcome validity. Much early work in psychology implicitly accepted this stance about cultural influences (Durbrow 1999) and, therefore, made broad generalizations of psychological findings across cultures. This approach can be seen as a 100% culture-general stance.

A second approach, on the other end of the continuum, takes an essentialist perspective. This approach assumes that there are no similarities across cultures, so that assessment instruments cannot be modified in any way but must be created specifically for the population under study. This perspective, if taken to an extreme, does not permit cross-cultural research because nothing from one culture can be generalized to another. It is an extreme case of culture-specificity.

A third model is the local knowledge model, which acknowledges that many commonalities across cultures but posits that local knowledge and belief strongly influence the developmental process (e.g., parent-child

interaction) and, therefore, the developmental outcome. Advocates for this model argue that for validity, information about the population being studied should be incorporated in the assessment instrument. Prior work by Lambert and his colleagues (Lambert et al., 1989a; Lambert et al., 1994; Lambert, Knight, Taylor, & Achenbach, 1996; Lambert & Lyubansky, 1999) draws from existing assessment instruments [e.g., Achenbach's Child Behavior Check List (CBCL)] but modifies the questions based on contributions from clinic referred Jamaican youth, their parents, teachers, other adults who referred them for treatment, and from the contributions of clinicians who treat Jamaican children (Lambert et al., 1989a; Lambert et al., 1994; Lambert et al., 1996; Lambert & Lyubansky, 1999)

The CBCL was then modified to reflect the Jamaican thresholds for problem behaviors as well as behaviors thought to be problematic. For example, for a Jamaican adult, a child who throws stones for any reason has a behavior problem; for an American adult, the same behaviors displayed by a child would not ordinarily be a cause for concern. Although United States and Jamaican parents, therefore, would agree that children have behavior problems, they differ in what constitutes appropriate and inappropriate behavior. The researcher who fails to take these differences into account and generalizes across cultures runs the risk of overlooking or misclassifying psychological difficulties in one culture not so identified in another.

The current study assesses Jamaican children, mothers, and families, and thus is a within-culture study. From a theoretical perspective, however, both culture-general and culture-specific perspectives are taken into account, although no direct cross-cultural comparisons can be made.

The literature review to follow examines research predominantly from the United States, Canada, and Europe, and the question of whether established culture-general results will apply equally well to Jamaica in relation to the effects of maternal psychopathology, family functioning, and child outcome remain to be seen.

Socialization and Developmental Tasks: Early Childhood

Socialization

Socialization has two goals: to teach the child how to function in the home and in the larger community, and second, to teach the child to balance its needs with those of others, whether they are parents, extended family, classmates, or friends. Several skills are needed to achieve these goals, including behavior regulation, emotion regulation, and the use of language to communicate ideas, thoughts, and feelings to others, and mastering them is a complex process (Richards 1974; Rogoff 1990; White 1995). Many factors influence this process (Bronfenbrenner 1986), including, but not limited to, cultural values and beliefs that effect adult expectations of the child's emotion and behavior regulation (Lambert et al., 1989a) and the quality of the parent-child interaction (Bronfenbrenner 1986; Gottman, Katz, & Hooven, 1997; Maccoby 1992).

In early childhood, socialization of behavior regulation, emotion regulation, and language is initially acquired in the family. In the family, the child also learns to use adults as resources for asking questions and problem solving and to use language to express feelings and to communicate ideas (Nelson 1996; Rogoff, Baker-Sennett, Lacasa, & Goldsmith, 1995; White 1995). In addition, the child learns the appropriate ways to inhibit or express behaviors and feelings and how to use this knowledge with family and peers (Maccoby, 1992). Competencies in these areas help to scaffold the child's transition from home to school (Pianta, 1999) and are associated with positive peer and adult relationships and with academic success, beginning in early childhood and continuing through adolescence (Pianta 1999; Stipek 2001). Failure to gain competence may be associated with serious behavioral, emotional, and learning difficulties at later stages in life, from middle and later childhood, to adolescence, to adulthood (Campbell, 1990; Campbell, 1995; Campbell & Pierce, 1996; Caspi, Moffitt, Newman, & Silva, 1997).

Although the skills needed for successful socialization are initially learned and practiced in the family, and although socialization begins in early infancy and early childhood (Keenan and Shaw, 1994; Maccoby, 1992; Richards, 1974) most studies of parental and environmental contributors to child outcome have started in middle childhood [e.g., see Zucker & Gomberg (1986) for a review of the literature on children of alcoholics]. More recent research, however, has begun with preschool-age children

(e.g., Campbell, 1995 for a review; Radke-Yarrow, 1998; Zucker & Fitzgerald, 1991) and is providing substantial evidence that early behavior patterns are related to later developmental outcome.

Campbell and Ewing (1990), for example, found that children who at age three had difficulties with behavior and emotion regulation (e.g., aggressive and impulsive behavior) were significantly more likely than children without these difficulties to have behavior problems at ages 6 and 9. Looking even farther across the life-course, Caspi and his colleagues (Caspi et al., 1997) found that behavior problems in 3-year-old children were associated with later adult psychopathology. These studies provide evidence that behavior problems in early childhood may influence later child and adult outcome, thus highlighting the importance of recognizing and understanding specific influences on the socialization process. Because most learning occurs in a social context, the learning process involves co-participation of the parents and teachers as the child learns emotion regulation, behavior regulation, and language development [for a discussion of co-participation see Lave & Wenger (1991)].

Emotion Regulation. The ability to regulate emotions has antecedents in infancy and toddlerhood (e.g., Field, 1995) but becomes more critical in early childhood as the child's interactions with others, especially peers, increase. As previously stated, there are cultural and family expectations for the appropriate times and ways to express emotions such as anger and sadness (Ekman & Davidson, 1994; Lambert et

al., 1996; Lambert, Lyubansky, & Achenbach, 1998; Lambert et al., 1994; Lambert, Puig, Lyubansky, & Rowan, 2001a;). The socialization of emotion regulation requires at least three skills. The first skill requires the recognition and understanding of one's own internal feelings. The second skill is to learn socially appropriate ways to respond to the experience of emotion (e.g., Gottman et al., 1997). The third skill, which complements the first, is to accurately interpret the emotion responses of another. This is a key component in beginning and maintaining successful peer relationships. Children who have difficulty interpreting others' emotion responses often misinterpret those responses as negative or hostile, and, therefore, are more likely to respond with anger or distress. Studies show that the ability to correctly read the emotion responses of others is a key component in initiating and maintaining successful peer relationships (Crick & Dodge, 1994; Crick & Dodge, 1996).

Behavior Regulation. Behavior regulation is closely related to emotion regulation because behavior regulation often depends on the ability to manage emotion responses in a variety of situations (e.g., at home, at school, playing with peers). Children who can regulate their behavioral responses when working and/or playing with others maintain friendships and have more successful experiences within the peer group than children who have difficulty with these same skills (Crick & Dodge, 1994; Crick & Dodge, 1996). Parents, as co-participants in the process, help their child gain competence in behavior regulation. In addition to

direct instruction (Rogoff et al., 1993), research shows that parental warmth, sensitivity, responsiveness, authoritative child-rearing styles, and child-centered management techniques all help the child to develop behavior and emotion regulation (Gralinski & Kopp, 1993).

In one such study, Gralinski and Kopp (1993) examined middle-class, well-educated parents and their children, and a developmental timetable of parental expectations emerged. For toddlers, parental expectations centered on safety and protection (e.g., "don't put a fork in the electric socket"); for preschoolers, parents formalized expectations for proper behavior at mealtime, self-care (e.g., brushing teeth), and for respecting the person and property of others. As the children grew older, the mothers further elaborated rules and expectations coincided with the child's entrance into school, where expectations of behavior regulation would also come from teachers.

Language Development. The use of language marks a key transition from toddlerhood to early childhood. Whereas toddlers often communicate anger or displeasure with others by physically aggressive means, in early childhood learning to use language to communicate feelings is an important developmental task (e.g.,Gottman et al., 1997). The child is also learning how to use language in formal (e.g., school) and informal (e.g., home) situations, which helps the child modulate emotions and behavior. Difficulty with language and communication in young children is often associated with problems in behavior and emotion regulation (Beitchman,

Wilson, Brownlie, & Waters, 1996; Benasich & Curtiss, 1993; Carson, Klee, Perry, Muskina, & Donagy, 1998). In sum, the core of self-control, defined as the ability to act according to the expectations of the caregiver, even when the caregiver is not present (Gralinski & Kopp, 1993), is the ability to inhibit initial impulses so that a proper form of action can be initiated (Maccoby, 1992). Thus as children learn to regulate emotion and behavior and to use language effectively, their ability to manage aggression, empathize with others, and act appropriately in a variety of settings increases.

Socialization and Developmental Tasks: A Jamaican Perspective

As previously noted, much of a child's early socialization occurs in the family, most often between parent and child. Cultural values and beliefs, therefore, about the appropriate ways to socialize children affect how parents approach this process (Durbrow 1999; Rogoff et al., 1995). Among cultural variations identified in meeting the responsibilities for child rearing are who takes the primary role for day-to-day child-care, what is appropriate discipline, and who disciplines the child, family attitudes toward schooling, including what is valued and what behavior is considered appropriate. Also, the type of family structure adopted in a culture or subculture influences cultural variations in child rearing (Wint & Brown, 1987).

In Jamaica, for example, the mother takes the main responsibility for child rearing. A grandmother or aunt, however, will most likely become the

primary caregiver if the mother is unable to do so. Maternal figures are also directly involved with children regardless of maternal availability. Socialization values for Jamaican children center around obedience, sharing, and respect for others (Durbrow, 1999; Gopaul-McNicol, 1999; Leo-Rhynie, 1993; Morrison & Milner, 1995; Rogoff et al., 1995; Valsiner, 1989). Beginning in early childhood, Jamaican parents, therefore, expect their children to obey and follow their directives (Gopaul-McNicol, 1999; Morrison & Milner, 1995). When children are disobedient, the two most common disciplinary methods are spanking and withdrawal of love (Morrison & Milner, 1995).

Although spanking and love withdrawal are commonly used, Jamaican mothers are also emotionally warm, attentive, and nurturing toward their children (Grant 1974, 1984). Jamaican mothers believe that it is the combination that prevents the child from becoming "spoiled" and that prepares the child for the behavior expected in school. The first school exposure most Jamaicans experience is the "Basic School." This type of education is therefore described next.

Early Childhood Education in Jamaica Basic Schools

Jamaica has several forms of early childhood education (Johnson & Brown, 1995), many of which come under the supervision of the education officers of the Jamaican Ministry of Early Childhood Unit. One such program is basic school, a program for children ages 3- to 6- years old that is financed from small contributions from parents and, more recently, from

government subsidies for accredited schools (Johnson & Brown, 1995). These schools serve 82% of the total population of 4- to 6- year olds, the majority of who are in the low-income strata of society (Johnson & Brown, 1995). In 1985, the Ministry of Education indorsed an eclectic child-centered curriculum that draws from Montessori, Froebel, Piaget, Bruner, and Pestalozzi, the goal of which is to teach the child to work independently and creatively (Johnson & Brown, 1995; Morrison et al., 1998).

Many Basic Schools are understaffed with child-adult ratios that greatly restrict the amount of attention given to any one child. Also, many classrooms do not have enough space to accommodate the number of children who attend (James, 1977; Stebbins, 1973). This also restricts the amount of individual and small group work that can be done (Johnson & Brown, 1995).

Teachers and Children in Basic School. Basic School teachers are para-professionals with low levels of academic preparation and with little or no pre-teaching training. Most of their knowledge about children and curriculum therefore comes from in-service training. This lack of academic preparation, both in curriculum and child development, may, in part, explain the results of two evaluations, one in 1986, the other in 1995, that found that Basic School teachers had difficulty implementing the curriculum endorsed by the Ministry of Education (Johnson & Brown, 1995). Another explanation may be related to the behavioral expectations

for children. Jamaican children are expected to be obedient to authority both at home and at school. This is a value that both parents and teachers hold as important (Morrison et al., 1998). In addition, Jamaican parents place great importance on success in school and therefore expect the child to be obedient, respectful, and cooperative, not only with themselves, as already noted, but also with the teacher and other children. In school, for example, children are expected to have the self-regulation necessary to wait their turn during the school day (Lambert et al., 1996). Jamaican parents also endorse academic learning (i.e., reading, writing, and arithmetic) over other more creative aspects of the curriculum (e.g., painting, playing with blocks). These subjects are taught by rote learning, rather than in an experiential, constructivist manner, methods endorsed by the Ministry of Education. The curriculum, however, encourages creativity and play in the classroom and, therefore, conflict with expectations for obedience, self-regulation, and academic learning may be difficult for the child and the teacher to resolve.

Influences on Socialization Practices

One influence on the context and content of settings is socioeconomic status (Brooks-Gunn, Klebanov, Liaw, & Duncan, 1995; Stipek, 2001; Stipek & Ryan, 1997), the next topic to be discussed.

Socioeconomic Status. As previously discussed, socioeconomic status (SES) is often used to identify an individual's or family's place in the social and economic hierarchy of a community or country (Brooks-Gunn,

Duncan, Britto, 1999; Duncan, Brooks-Gunn, & Klebanov, 1994; Duncan & Yeung, W. J., 1998). In the United States, social class is usually divided into three divisions (upper, middle, and lower), with classification based on a combination of education, occupation, and income. In these respects, SES is also a marker for a variety of associated medical, literacy, and recreation resources and opportunities, as well as associated practices, values, and beliefs (Leo-Rhynie & Hamilton 1993). Low SES also may be a significant indicator of difficulties for the child and for the family as a whole (Tarnowski & Rohrbeck, 1993). In most countries, for example, SES is negatively related to adult psychopathology and positively related to psychological health for children and adults alike (Tarnowski & Rohrbeck, 1993; Dohrenwend, 1990; Dohrenwend, Levav, Shrout, & Schwartz, 1992).

Socioeconomic Status in Jamaica. As previously discussed, in developing countries SES is more difficult to define then it is in the developed countries of the West (Leo-Rhynie and Hamilton, 1993), and, in fact, may not reflect the same factors identified as salient in the developed world. Although Jamaica has many natural resources, it also has serious economic problems marked by 20% unemployment, a heavy foreign debt, and high inflation. Currently, although the economy is growing slowly, inflation is increasing dramatically, thus contributing to a declining standard of living for many.

The measurement of SES is difficult in any developing country in large part because of these kinds of economic problems are common, not

only to Jamaica but also throughout the developing world (Lambert et al., 2001a). The measurement of SES in such countries, therefore, should not rely on income or professional status as proxies (McLoyd & Ceballo, 1998).

In Jamaica, furthermore, the determination of SES from reported individual or family income is still more problematic because many families receive substantial aid in the form of gifts from relatives outside the country. This aid, however, is measurable because it normally is used for the purchase of material possessions for the home (e.g., refrigerator, television, radio).

For these reasons, in Jamaica, instead of using the more conventional economic indices of SES, a better measure is "wealth," defined as the total economic resources available to children and families. As so defined, "wealth," has been shown to be a better predictor of emotional well-being than occupational status or income (McLoyd & Ceballo, 1998). Parental education, whether based on parents' education (Amato, 2000) or only the mother's education (Doucette-Gates, Brooks-Gunn, & Chase-Lansdale, 1998), is also a predictor of well being in children. Recent studies have begun to compare the Hollingshead SES index (Hollingshead, 1975) with measures of wealth (e.g., money, material possessions) as well as availability of services and adequacy of basic and other resources such as food and shelter (Lambert et al., 2001a). These studies, for example, find that these alternative measures are just as good

a predictor of psychopathology as is the Hollingshead index (1975) (e.g., Rose, 1998).

Socioeconomic Status and Child Outcome

For children, low SES is associated with a higher risk for externalizing and internalizing behavior as well as a higher risk for peer rejection (Raver & Leadbeater, 1999). When comparing preschool children from a low and middle SES group, Ramsey (1988) used two procedures to assess peer relationships and problem-solving skill. One asked children to respond to social problem situations; the other used a sociometric assessment of friends in the classroom. The result was that children from the low SES group responded more aggressively when seeking a solution to the problem situations and were also rated by their teachers as less socially competent. In sum, the low SES children had more conflicts over objects, had fewer problem-solving skills, and had more aggressive interaction styles.

In examining longitudinal data from the Infant Health and Development Program for low birth weight babies (N = 895), Duncan, et al., (1994) found that poverty status and family income were strongly related to children's cognitive development and behavior. Children who at age 5 lived in more affluent neighborhoods functioned at higher intellectual levels than those children who remained at or near the poverty level. Stipek (2001) found that poverty in early childhood is associated with poorer performance in adulthood in literacy and other school related skills.

In the longitudinal Mater University Study of Pregnancy, children whose families remained poor across all three assessment periods (antenatal, 6 months postnatal, and 5 years of age) had the highest number of behavior problems. Murphy-Berman, Levesque, and Berman (1996) also found that the caregiving of a mother who was struggling with financial hardship was often like that of a clinically depressed mother. To further understand the relation between SES and maternal depression, the next section will explore the relation between SES and mental health.

Socioeconomic Status, Mental Health, and Family Functioning. A United Nations sponsored epidemiological study found a strong relationship between SES and mental illness (i.e., the lower the level of SES, the higher the incidence of mental illness). This study also identified some risk factors accompanying low SES to be chronic and acute stress, lack of adequate social support, and restricted sense of control of one's life (Murphy-Berman et al., 1996). This finding lends support to Sameroff (1975) who posits that it is not just SES that contributes to problematic outcome but it is also the number of other risk factors that accompany low SES that contribute to the development of mental illness, thus contributing to problems in the individual and the family.

There is also a body of research that suggests that race, especially being of minority status, contributes to poor mental health outcome. To explore this relationship, drawing on epidemiological data from 1,648 American White and 450 Black adults, Biafora (1995) examined the relation

between SES, depression, and race. In the initial analysis, Blacks had higher depression scores than did Whites; however, when SES (occupational status, education level, and income) was partialed out, race was not an independent predictor of depression. SES, not race, thus carried the predictive power for depression.

It is important, therefore, to acknowledge the complexity of examining the effects of SES on child or adult outcome and family functioning. Although the evidence often shows low SES, as defined conventionally, by education, income, and occupation, to be a predictor of child behavior problems and adult psychopathology, recent studies suggest it is not low SES itself but the number of associated risk factors that actually contribute to the problems (McLoyd & Ceballo, 1998; Sameroff, 1975; Sameroff & Seifer, 1990, 1995; Seifer & Sameroff, 1987). And, as previously discussed, Keating and Hertzman (1999) emphasize the influence of the socioeconomic psychological gradient on individual, family, and community outcome. In sum, it is important to acknowledge that SES is often a marker for other difficulties that may confront the individual or family.

Family Functioning

Families are embedded in a larger social system, evolve over time, and vary within and among cultural groups. As previously mentioned, the family provides the early socialization experiences for the child to learn family norms, values, and behavioral expectations. Organization of these

experiences into schemas and scripts helps the child to anticipate and respond to day-to-day expectations of the family.

Because family members relate to one another on a close emotional level such that a change in one person affects the behavior of another, family cohesion, conflict, and adaptability are related, positively or negatively, to child and adult well-being and mental health. Family cohesion is defined as the "emotional bonding that family members have toward one another and the degree of individual autonomy they experience" (Olson, Spenke, and Russell, 1979). Low levels of cohesion thus may have deleterious effects on family members. For example, Gorman-Smith, Tolan, Zelli, & Huesmann (1996) found that families of violent delinquents exhibited less family cohesion and less involvement than parents of non-violent adolescents.

Family adaptability as defined by Olson et al. (1979) is "the ability of the marital or family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress." The hypothesis is that the more adaptable a family is to change, whether positive (e.g., birth of a healthy child) or negative (e.g., loss of substantial family income), the higher its level of functioning. Thus, higher levels of cohesion and adaptability are related to higher levels of positive family functioning.

Family Cohesion and Child Outcome

In a study of American preschool children and their parents, Bullock and Pennington (1988) found that parents' self-perceptions of family cohesion related positively to their child's sense of their own competence, to the quality of the child's friendships, and to the teacher's perception of the child's competence. Lindahl (1998) found that family cohesion was one factor that distinguished progressively among three groups of boys (ages 7-11): one group with attention deficit hyperactivity disorder (ADHD), another with oppositional defiant disorder (ODD), and still another with ADHD and ODD. For both ODD groups, lack of family cohesiveness played an important role in family functioning. The families of boys with no behavior problems (control group) and the families of boys with ADHD had average to above-average family cohesion.

Cole and Jordan (1989), however, have criticized assessment of family cohesion and adaptability as too general, in other words, that some parts of the family (subsystems) may be more cohesive or adaptable than others. Taking a different perspective, however, Johnson, Cowan, and Cowan (1999) have challenged the view that evaluating subsystems (e.g., mother-child, father-child, mother-father) accounts for the variance in the reporting of child behavior problems (e.g. externalizing and internalizing behavior), and that to fully understand child behavior problems, understanding how the family works together is necessary.

Families in Jamaica

The population of Jamaica primarily consists of descendants of "British-owned" slaves from the Ashanti, Yoruba, Ibo, and Fanti tribes of Africa (Brice-Baker, 1996). While ethnic groups from other world regions such as Europe, Asia, and Middle-Eastern nations are represented in the population, their gene pools are often mixed with one another and those of African-Jamaicans. This is reflected in the Jamaican national motto "Out of Many People." Thus, the cultural customs of Jamaica, including family customs primarily reflect African-British ethos (see Lambert & Lyubansky, 1999). For example, the patriarchical family structure where much of the power rests in the father is considered ideal family structure in Jamaica. Nevertheless, the matrifocal structure and its emphasis on the widely extended family within the context of the community that is evident in the tribes from which Jamaican families originate predominates Jamaican family structure (Rutter, Yule, Morton, & Bagley, 1975).

The African legacy and its focus on survival of the group are similar to that found in African-Americans. However, it stands in contrast with European-based U.S. ideals where autonomy and interpersonal competition prevails. Like many African-American families who share the same heritage as Jamaicans (Lambert et al., 1999), this legacy promotes cohesiveness with Jamaican communities and especially in families (see Hohn, 1996). Thus, individuals within most Jamaican family structures strive to maintain cohesiveness and ward off threats to this ideal.

Extremely high family cohesiveness for which most Jamaicans strive may be considered as enmeshed by external observers (Gopaul-McNicol, 1998), but to most Jamaicans this quality is viewed as critical to adequate and ideal family functioning.

Support for this notion is documented in research on Jamaican immigrants where family support, an important aspect of cohesion, was found to buffer the stress associated with migration to, and stress associated with life in the United States (Adams, 1989). This finding was replicated in a recent study, which indicated a positive relationship between Family Cohesion and adequate psychological functioning in immigrant Jamaican children (Hohn, 1996). Furthermore, a recent study on family functioning and child psychological adjustment in Jamaica indicated a positive relationship between cohesion and intellectual development and a negative relationship between this predictor and child psychopathology (Lambert, Schmitt, Samms-Vaughn, Russ, Lewis, Lancaster, & Orellana et al., 2001b).

Parent-Child Interaction

There are many influences on the parent-child interaction within the context of the family. One of the most important is the belief system guiding the socialization process (Hastings & Rubin, 1999). As previously noted, Jamaican parents strongly believe that children should be obedient and not question the authority of parents or teachers. Also, as previously discussed, Jamaican mothers believe that they can best guide their

children's behavior with a combination of physical punishment and high levels of nurturance. Physical punishment, an emphasis on obedience, and an emphasis on not questioning authority are often associated with an authoritarian style of parent-child interaction (Baumrind, 1971). For all these reasons, such children often have difficulty in school. They also show externalizing behavior, which, along with internalizing behavior, is one of the two most common child problems discussed within the context of parent-child interactions. Externalizing behavior is also the most frequently studied child behavior problem (Rothbaum & Weisz, 1994) and its presence is often associated with the following caregiving qualities: absence of approval, absence of guidance, absence of motivational strategies, absence of synchrony, and presence of coercive control. These caregiving qualities are also found in mothers who are depressed (Campbell, 1990) another known risk factor for troubled child outcome.

Maternal Psychopathology

Many research studies have linked maternal psychopathology to child behavior problems (Dodge, 1990), and the most commonly studied form of maternal psychopathology is depression (Rutter, 1995), a mood disorder. Depression is now acknowledged to be heterogeneous and not homogeneous as long supposed.

In Western literature, the common use of the term depression refers to a state of sadness, dejection, or lowering of spirits. Sadness, however, does not necessarily correspond to a clinical diagnosis of depression.

Therefore, before reviewing the literature on maternal depression and child outcome, definitions and descriptions of the types of depression commonly studied are discussed.

Dysphoria. Dysphoria is commonly used to refer to sadness and dejection and is not, according to DSM-IV (1994) criteria, clinically diagnosable as depression but may, nevertheless, interfere with normal day-to-day functioning and social interaction (Field, 1995).

Dysthymia and Major Depressive Disorder. Dysthymia and Major Depressive Disorder are differentiated based on severity, chronicity, and persistence (American Psychiatric Association, 1994). Dysthymia, for example, requires the presence of a depressed mood for more days than not over a period of two years. Major depressive disorder, however, requires that the depressed mood must be present almost every day for two weeks. Differentiating between these two types of depression is complicated (American Psychiatric Association, 1994) because both disorders share many symptoms. Dysthymia is seen as a chronic, less severe depression that lasts over a period of years, whereas major depression is an acute depression that can be distinguished from a person's usual behavior. For a more detailed description of symptoms and differential diagnostic criteria for mood disorders see DSM-IV (American Psychiatric Association, 1994) pages 341-392.

Major Depressive Disorder with Psychotic Symptoms. As discussed above, major depressive disorder requires that the depressed mood must

be present almost every day for two weeks. In Major Depressive Disorder with Psychotic Symptoms, the psychotic symptoms may relate to the mood disorder. Examples of symptoms, drawn from the DSM-IV (American Psychiatric Association, 1994, p. 337) are as follows: delusions of guilt (e.g., feeling guilty over the illness of a loved one), delusions of deserved punishment, delusions of world or personal destruction, somatic delusions, or delusions of poverty (e.g., being bankrupt). If there are accompanying hallucinations, they are usually transient and are often of voices berating the individual.

If the hallucinations are not associated with the depressive mood directly, they may have persecutory themes, delusions of thought insertions, delusions of thought broadcasting, and delusions that one's thoughts are not your own. Major depression with psychotic symptoms has a poorer prognosis than either Dysthymia or Major Depression.

Characteristics of Mothers with Clinically Significant Depression

According to a survey of women in the United States, 8% of mothers are clinically depressed at any given time (Weissman, Gammon, John, & Merikangas, 1987; Weissman & Warner, 1997), thus putting their children at risk for developing behavior problems (Dodge, 1990; Downey & Coyne, 1990; Rutter, 1995). In her studies of depressed mothers, Campbell (1995) found that depressed mothers often show a combination of the following qualities: anger, hostile tone of voice, flat or negative affect, unemotional tone of voice, withdrawal, apathy, anxiety, displeasure, intrusiveness,

disapproval of children, and evidence of behavioral disturbance. Also, Campbell (1995) described additional characteristics of depressed mothers include negative worldview, less engagement with others, and difficulty in engaging in difficult and conflictual conversations. In contrast, non-depressed mothers had the following qualities: kind tone of voice, warm, positive affect, ability to structure the environment for the child, ability to read the child's cues correctly, flexibility, and enjoyment of their interaction with their child (Campbell, 1995).

Interaction Between Depressed Mothers and Their Children

Dix (1991) argues convincingly that emotion is the integrative force that unites context (Darling & Steinberg, 1993) and content for parents as they manage the responsibilities of child rearing, and therefore, according to Dix (1991), parenting is primarily an affective experience. Difficulties with affect, including depression, therefore, would be expected to influence the parent-child relationship. Studies of mother-child interactions support this hypothesis.

Depressed mothers, for example, often have deficits in the kinds of skills that contribute to positive interaction with their children (Hops, 1995). In mother-child interactions, depressed mothers are less positive and more negative (Campbell, Cohn, & Meyers, 1995), less sensitive in understanding and responding to their children's needs, and less comfortable with their child (Teti, Gelfand, Messinger, & Isabella, 1995). Also, when participating in a structured task with their child, depressed mothers do less teaching

and less joint problem solving than do their non-depressed counterparts (Goldsmith & Rogoff, 1995; Goldsmith & Rogoff, 1997). These parenting difficulties are closely associated with children who have troubled behavior.

Characteristics of Children of Depressed Mothers

The qualities that depressed mothers bring to their interactions with their children put their children at significantly higher risk for developing psychopathology compared to children of non-depressed mothers. Billings and Moos (1983, 1986) found that children of depressed parents displayed more physical, psychological, and behavior problems than did children of non-depressed parents, and the more risk factors, such as fewer economic and social resources, the more child behavior problems. Two such problems common for children of depressed mothers are externalizing and internalizing behavior difficulties (Baker & Heller, 1996; Campbell, 1995; Downey & Coyne, 1990; Goodman & Gotlib, 1999; Greenberg, Lengua, Coie, & Pinderhughes, 1999). The focus of this study is on externalizing behavior problems, although it is acknowledged that often children of depressed parents display both externalizing (behavior that is focused outward) and internalizing (behavior that is focused inward) behavior problems.

Externalizing Behavior Problems. The goal of externalizing behavior (i.e., oppositional and aggressive behavior) for the young child may be described as the expression of emotion (either positive or negative) and/or

the desire to attain social goals (i.e., obtaining a desired toy or playing with a specific child or children in a social setting). Before further discussing externalizing behavior, however, it is important to acknowledge that young children often display oppositionality and aggression in their behavior as a normal function of the developmental process (Davies, 1999). The peak of aggressive behavior in young children occurs between the ages of 2 and 4; after the acquisition of language, however, the physically aggressive and oppositional behavior often seen in young children gives way to the use of language as a more appropriate and productive way to express feelings and desires and to make requests (Davies, 1999).

Externalizing behaviors are considered dimensional, that is they have more than one component, and these components may exist on a continuum from mild to very severe. One classification system for externalizing behavior as discussed by Stormshak, Bierman, and colleagues (1998) describes four types of externalizing behaviors in young children. They are 1) oppositional, 2) oppositional/aggressive, 3) hyperactive/attentive, and 4) hyperactive/inattentive and oppositional/aggressive. Each of these types may have different etiologies and different manifestations for home and school behavior. In describing the dimensions of externalizing behavior, the trajectory from oppositional to more aggressive behavior represents a move to more difficult and more intense behavior. This change in intensity may be associated with more

problematic parent-child interactions and/or more exposure to negative circumstances and events (White, 1995).

For some young children, however, behavior that is externalizing continues into early childhood, and, in fact, may become a stable component of the behavioral repertoire (Campbell, 1995; Caspi et al., 1997). Severe behavior difficulties in early childhood may predispose the child to difficulties in adapting to the school environment – both academically and socially. A child manifesting externalizing behaviors in the classroom is less likely to focus on acquisition of skills and knowledge in the classroom, thus compromising school performance (Brigman, Lane, Switzer, Lane, & Lawrence, 1999; Campbell, 1998; Campbell et al., 1991a, 1991b; Campbell & Pierce, 1996; Coolahan, Fantuzzo, Mendez, & McDermott, 2000).

In addition, overly aggressive behavior in early childhood may indicate that the child has difficulties engaging appropriately with peers – both entering groups already involved in activity, or once gaining admission, sustaining positive and appropriate interaction. These group skills are important for developmentally appropriate participation in academic and peer activities (Cummings, Iannotti, & Zahn-Waxler, 1989; Eisert, Walker, Severson, & Block, 1988; Kalpidou, Rothbaum, & Rosen, 1998; Lambert, Weisz, & Thesiger, 1998; Quiggle, Garber, Pnak, & Dodge, 1992; Zahn-Waxler, Cole, Richardson, Friedman, Michel, & Beloud, 1994).

Furthermore, preschool measures of behavior problems and difficulties with language development are among strong predictors of

stable and pervasive antisocial behavior in late childhood and mid-adolescence (Loeber, 1991; Loeber & Dishion, 1983; Loeber & Stouthamer-Loeber, 1998; Moffitt, 1990).

The importance of understanding the contributors to the development, emergence, maintenance, and decline of externalizing behavior is important for the future of young children who may be at risk for its manifestation in their lives.

GOALS

The overall goal of the current study was to better understand how maternal and family functioning and economic conditions influence the cognitive and emotional development of young Jamaican children. The particular maternal and family variables were maternal psychopathology, family cohesion, and socioeconomic status; the child outcome variables were behavior problems, verbal ability, and puzzle-solving skill.

Questions of Interest

Maternal Psychopathology

Maternal psychopathology (dysthymia and major depression with psychotic features) is a known risk factor for troubled child outcome and is often associated with child behavior problems and delayed verbal ability. Mothers who are dysthymic or have major depression with psychotic features also have difficulty positively engaging and sustaining pleasurable interactions with their child. Because this is the first time the influence of these factors on child outcome has been examined in a Jamaican population, no predictions were made about possible differences in the effects of these two kinds of maternal psychopathologies.

Prediction 1. For young Jamaican children, maternal dysthymia and maternal major depression with psychotic features will be associated with more emotional and social immaturity, less verbal ability, less puzzle-solving skill, and less family cohesion.

Prediction 2. For young Jamaican children, maternal psychopathology will mediate the relation between SES and all child outcome measures.

Family Variables

As discussed previously, the Jamaican family plays an especially vital role in the rearing of children. It was therefore, deemed to be important to consider the qualities of the family and how they influenced child outcome and maternal psychopathology. For a well-functioning family, one such quality is cohesion.

Based on evidence about the influence of family cohesion on child outcome; the other about family cohesion as a mediator for the relation between SES and child outcome.

Prediction 3. For young Jamaican children, the less family cohesion, the worse the child outcome, that is the greater number of behavior problems, the less verbal ability, and less developed puzzle-solving skills.

Prediction 4. For young Jamaican children, family cohesion will mediate the effects between SES and all child outcome measures.

Socioeconomic Status

For the current study, the influence of SES was considered in two ways. The first way was to consider SES as a variable that directly influences all other variables in the model (see Fig. 1). The second way was to consider SES influencing only maternal psychopathology and then

to covary SES with other variables as suggested by the modification indices suggested by analysis.

Prediction 5. For young Jamaican children, lower family SES will be associated with poorer performance on all child outcome measures, more maternal psychopathology, and lower family cohesion.

METHOD

Participants

The participants were 151 mothers between the ages of 20and 51 (M = 30.26, SD = 7.10) and 151 children between the ages of 3 to 6 (M = 5.04, SD = .94) who were recruited as part of a larger study (N =521 mothers and 521 children) examining the effect of iron deficiency anemia on the cognitive and behavior development of Jamaican pre-school children (Samms-Vaughn, 1998a, Samms-Vaughn, 1998b). Participants were recruited from six Basic Schools (pre-schools and kindergartens), representative of a typical population of urban Jamaican children. The following three major exclusion criteria were used: 1) children with factors known or suspected to be associated with developmental delay such as low birth weight (< 2,500gms), lead poisoning, malnutrition, previous identified development delay; 2) children with laboratory findings that will complicate interpretations of results; and 3) ethical grounds (e.g., children whose hemoglobin count is less than 8g/dl will require immediate treatment).

Selection of Iron Study Sample

Parents of children from identified basic schools were interviewed to identify those who do not meet study criteria on historical grounds. Following venepuncture and laboratory investigation, those children who did not meet hematological criteria were identified and excluded from further study. The study children were those who met both historical and

laboratory criteria. Based on a 42% prevalence of iron deficiency anemia in Jamaican 2-4 year olds, twice the number of children required for the study sample underwent laboratory investigation to identify an appropriate sample of study children. Table 1 displays the demographic information for the 151 study children and their mothers.

Table 1: Descriptive Statistics

	N	Mean	S.D.	Minimum	Maximum
Mother					
Mother's Age	151	30.87	6.44	19.0	51.0
Mother's Education	151	3.77	0.69	1.0	6.0
Child					
Child's Age	151	5.05	0.19	3.34	6.5
Family					
Socioeconomic Status	151	15.92	2.53	6.0	19.0

Demographic Information

For the sample of participants in the larger study, the following demographic information was available. Table 1 presents demographic characteristics of the study sample.

Household Structure

Ninety-three percent of the children lived with their biological mothers. Where biological mothers were absent, the mother figure was represented by stepmothers, adoptive mothers, or grandmothers. Grandmothers, whether or not they were mother figures, lived in 23% of the homes.

Fathers were present in only 50% of the homes. In 15% of homes, there was a father figure, who commonly was a stepfather or grandfather, and, less commonly, an uncle. Fathers and father figures thus were present in 65% of the homes. Aunts and uncles were present in as many as 41% of the homes, with most homes including one or the other.

Child Rearing

In keeping with the matriarchal household structure just described, 87% of the children were reared by their biological mother, 13% by a grandmother, 3% by a stepmother, and 3% by the biological father.

In more than 90% of cases, the child had lived with the current caretaker for most or all of the child's life. Only 6% of current caretakers reported living little or never with the child in the past.

Living Conditions

Eighty-five percent of the homes had working bathrooms. In 66%, the bathroom was in the home, in 19%, it was outside the home and shared with other families. 15% of the homes had no modern toilet, requiring inhabitants to use a pit latrine.

Ninety-five percent of families had access to running water; the rest used different methods of water catchment from a source. Of those with running water, 66% had pipes in the home, 14% had pipes in the yards, and 17% had pipes outside the yard. In the last two cases, the water supply was shared with other families.

Ninety-five percent of the families had access to electricity; the rest used oil lamps or candlelight at night. Ninety-four percent used gas or electricity to cook and the rest used coal or wool (4%) or kerosene (1%).

Basic Schools

Six Basic Schools within the Kingston and St. Andrew region participated in the current study. To facilitate transportation to and from the Department of Child Health research center at the University of West Indies, schools were chosen for their proximity (within 2 miles) of the center. Participating schools were: 1) Water Commission Basic School, 2) Providence Basic School, 3) August Town Seventh Day Adventist Basic School, 4) Mona Commons Basic School, 5) Hope Valley Experimental Infant School, and 6) Shady Grove Basic School.

Although all schools were classified as Basic Schools, they had different administrative structures. Two schools (Providence and August Town) were affiliated with churches and were located on church property. Two schools were community-based without church affiliation (Mona Commons and Shady Grove), one school was funded by a private organization (Water Commission), and one school was an Infant Department of a Primary School (Hope Valley).

Basic Schools throughout Jamaica chiefly serve lower middle or lower income families. Within this range, there are still noticeable differences. August Town and Mona Commons Basic Schools are in communities with significant social and economic deprivation and

primarily serve the local community. Water Commission, Providence, Hope Valley, and Shady Grove Basic Schools serve families with more economic resources.

Family Measures

Socioeconomic Status

Measures of socioeconomic status (SES), such as income earned and current occupation that are commonly used in North America do not accurately measure SES in developing countries, including Jamaica (Leo-Rhynie & Hamilton, 1993; Samms-Vaughn, 1998a,b). There is, however, no accepted standard for assessing SES in developing countries.

In Jamaica, one method thought to more accurately reflect SES calculates the number of appliances and material goods in the home (e.g., number and quality of toilet facilities, the place where water is obtained, quality of indoor lighting, type of stove). The higher the number and quality of appliances and material goods, the higher the SES score. Rose (1998) found that SES scores computed in this way predicted severity of psychopathology (for both men and women) as measured on the Global Severity Index of the Brief Symptom Inventory (Derogatis, 1992; Derogatis, 1993) as accurately as did other measures of SES in other populations, with lower scores being related to higher psychopathology.

Family Cohesion

To assess family cohesion, The Family Adaptability and Cohesion Environment Scales-II (herein called FACES)(Olson & Russell, 1980; Olson

et al., 1979) was used. The instrument presents 30 descriptions of behaviors and attitudes about families (e.g., family does things together; children have a say in their own discipline; family shares responsibilities; family spends free time together), which the mothers were asked to rate on a 3-point scale as they apply to themselves and their own family (0 = no, 1 = sometimes, 2 = always).

Confirmatory factor analyses revealed that the original scale structure (Olson et al., 1979) did not replicate in the Jamaican sample (Lambert, Samms-Vaughn, Lyubansky, Podolski, Hannah, McCaslin, & Rowan, 1999b). An exploratory factor analysis (EFA), therefore, was performed to determine item loadings on the Jamaican factors. An analysis using principal axis factoring analysis was chosen because the purpose was to find the scale structures that reflect the Jamaican participants' responses (Floyd & Widaman, 1995). Retention of factors, based on an eigenvalue ≥ 1, resulted in two factors, which then were rotated with an oblique promax solution. Items with loadings of $\geq .30$ on each factor were deemed as loading on the respective dimension. The two factors derived from these procedures were labeled *Family Cohesion and Adaptability* (herein called Family Cohesion) and *Diminished Family Cohesion and Adaptability*. Factors, factor loadings, and alphas are listed in Table 2.

Table 2: Faces-II Dimensions

Factor 1: Family Cohesion and Adaptability

Item	Descriptions	Item Loadings Alpha = .7940
7	Family does things together	0.633
13	Family consults about activities	0.577
21	Family members go along with others	0.528
11	Family members know other's close friends	0.496
14	Family members say what they want	0.491
22	Share responsibilities	0.441
23	Spends free time together	0.430
30	Share hobbies	0.425
27	Family approves of other's friends	0.415
8	Family discusses problems	0.375
5	Family gathers together in same room	0.374
6	Children have say in their discipline	0.343
20	Tries new ways of dealing with problems	0.341
10	Shift household chores	0.332
4	Family members have input in decisions	0.327
Eigenvalue		3.821

Factor 2: Family Non-Cohesiveness and Non-Adaptability

Item	Descriptions	Item Loadings Alpha = .7940
15	Difficulty doing things together	0.676
25	Family members avoid each other at home	0.587
19	Feel closer to non-family members	0.581
29	Do things in twos not as whole family	0.516
24	Difficult to get rules changed in family	0.501
12	Hard to know rules changed in family	0.428
1	Family supportive	-0.399
3	Easier to talk outside family	0.347
Eigenvalue		3.286

Maternal Measures

Maternal Psychopathology

Brief Symptom Inventory. The Brief Symptom Inventory (BSI) was used to measure maternal psychopathology. The BSI, which is currently widely used for both research and clinical assessment, is a self-report symptom inventory with 53 items. Each item is rated on a 5-point scale from 0 to 4, where 0 indicates no distress and 4 indicates extreme distress.

The BSI has a total of nine symptom dimensions: Somaticization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Phobic Anxiety, Paranoid Ideation, Psychotism, and Hostility.

The BSI was chosen for the assessment of maternal psychopathology for three reasons. First, it is quick and easy to administer, a necessary criterion for data collection. Second, it has solid psychometric properties. The internal consistency reliability for the nine factors has been found to range from .71 for Psychoticism to .85 for Depression in a sample of 719 psychiatric patients (Derogatis, 1993). Third, it is easily understood by Jamaicans and, therefore, could be given without revision (Rose, 1998).

When Confirmatory Factor Analysis (CFA) was performed on the BSI, the derived indices indicated that the factor structure did not replicate for the Jamaican sample (Lambert et al., 1999). Exploratory Factor Analysis (principal components analysis), therefore, was performed to identify the factor structure for Jamaicans. Six factors were derived: 1) Somatic

Complaints; 2) Paranoia; 3) Hostility; 4) Mild but chronic Depression or Dysthymia; 5) Major Depression with Psychotic Features; and 6) Agoraphobia with Panic Disorder. (For further details of the item loadings, see Lambert et al., 1999).

As noted earlier, although depression is often considered to be a homogeneous disorder, research on the components of maternal psychopathology suggests that is actually heterogeneous (Clayton, 1998). Evidence for this heterogeneity also was revealed in the EFA for the Jamaican sample, which discovered two distinct types of depression: Mild but Chronic Depression (herein called dysthymia) (Scale 4) and Major Depression with Psychotic Features (herein called depression)(Scale 5). Therefore, for the current study both depression scales and Depression were chosen for inclusion in the analyses of paths leading to child outcome, with a separate analysis being performed for each scale. Factor loadings for Scales 4 and 5 are in Table 3.

Child Measures

Child Behavior

Child behavior functioning was measured by the Conners Parent Rating Scale (Goyette, Conners, & Ulrich, 1978). The version used in the current study included 48 statements (e.g., picks at things, sassy to grown-ups) that the mother was instructed to rate, on a 3-point scale, for how well they described her own child (0 = never, 1 = a little, 2 = a whole lot). Confirmatory factor analyses revealed that the original scale structures did

Table 3: BSI Dimensions for Depression

Dimension 4: Mild Depression or Dsythmia

Item Descriptions		Item Loadings Alpha = .7892
14	Feel lonely when with others	0.72
15	Feeling blocked in getting things done	0.54
16	Feeling lonely	0.79
17	Feeling sad	0.79
18	No interest in things	0.50
44	Never feeling close to others	0.40
Eigenvalue		7.53

Dimension 5: Major Depression with Psychotic Features

Item Descriptions		Item Loadings Alpha = .8267
3	Idea that others can control thoughts	0.41
9	Thoughts of ending own life	0.56
22	Feeling inferior to others	0.39
34	Idea that committed sins should be punished for	0.47
35	Hopeless about future	0.60
45	Spells of terror and panic	0.39
50	Feeling worthless	0.67
52	Feelings of guilt	0.42
53	Idea that something is wrong with mind	0.65
Eigenvalue		8.16

not replicate in the Jamaican sample (Lambert et al., 1999). An exploratory factor analysis (EFA), therefore, was performed to determine item loadings on the Jamaican factors. Again, principle factoring axis analysis was chosen in order to find the scale structures that reflect the Jamaican participants' responses (Floyd & Widaman, 1995). Retention of factors, again based on an eigenvalue ≥ 1, resulted in three factors. As before, the factors were rotated with an oblique promax solution. Items with loadings of > .30 on each factor were deemed as loading on the respective dimension. The three factors derived from this procedure were: 1) Child Emotion, and Social Immaturity 2) Somatic Complaints; and 3) Moodiness. The scale used in the current study was the Child Emotion and Social Immaturity Scale (herein called *Child Behavior Problems*), a mix of behavior, emotion, and social difficulties typical of young children. For example, young children are impulsive, cry easily, and often disobedient (Tremblay, 1999). Factor components and factor loadings for the Conners appear in Table 4.

Verbal Ability and Puzzle-Solving

McCarthy Scales of Children's Abilities. The McCarthy Scales of Children's Abilities (Kaufman & Kaufman, 1977) are a well standardized and psychometrically sound measure of the cognitive abilities of children from 2.5 to 8.5 years of age (Sattler, 1992). They are administered by examiners to individuals, and depending on the child's age, take 45 to 60 minutes to administer. According to Sattler (1992), the scales are appropriate for

Table 4: Conners Factors

Item	Descriptions	Item Loadings
Factor 1: Social Immaturity		**Alpha = 0.8251**
14	Destructive	0.683
4	Impulsive	0.606
15	Tells lies	0.585
9	Daydreams	0.579
2	Is sassy to grown-ups	0.534
17	More trouble than others	0.489
29	Cruel	0.451
37	Easily frustrated	0.448
38	Disturbs other children	0.446
5	Wants to run things	0.437
10	Has difficulty learning	0.419
27	Bullies others	0.373
23	Disobedient	0.352
30	Childish	0.343
16	Shy	0.337
3	Has problems with friends	0.332
24	Worries more than others	0.331
28	Engages in repetitive activities	0.306
35	Fights constantly	0.302
7	Cries easily	0.302
Eigenvalue		3.821
Factor 2: Somatic Complaints		**Alpha = 0.6697**
41	Stomach aches	0.627
39	Unhappy	0.479
44	Vomiting	0.475
47	Let's self be pushed around by others	0.443
18	Speaks differently	0.400
48	Bowel problems	0.396
45	Feels cheated	0.387
43	Other aches	0.354
42	Sleep problems	0.329
Eigenvalue		3.784
Factor 3: Moodiness		**Alpha = .5019**
11	Squirmy	0.401
33	Mood changes often	0.387
13	Always up and on the go	0.381
21	Pouts and sulks	0.370
36	Doesn't get along with siblings	0.333
26	Feelings easily hurt	0.319
Eigenvalue		2.851

children with learning problems or other special needs. They reveal a general measure of intellectual functioning called the General Cognitive Index (GCI), which consists of the following Scales: Verbal, Perceptual-Performance, Quantitative, Memory, and Motor.

For the current study, Verbal Ability (full scale) and Puzzle-Solving (a subtest of the Perceptual Performance Scale) were used as measures of verbal ability and non-verbal ability, respectively. Verbal ability, which is highly correlated with success in school (Tremblay, 1999), assesses the ability to understand and process verbal information and to express thoughts in words. It consists of six subscales: pictorial memory, word knowledge, verbal memory, verbal fluency, and opposite analogies. The subscales measure such capacities as short-term memory, attention, verbal expression, verbal comprehension, logical classification, and verbal reasoning and is highly correlated with success in school (Tremblay, 1999).

Puzzle-solving, a skill often called upon in programs in early childhood education, taps the child's abilities in visual perception, non-verbal reasoning, visual-motor coordination, and spatial relations, among others.

Psychometric Properties

Standardization. Standardization of the McCarthy Scales involved 1,032 children between the ages of 2.5 and 8.5. The following variables were included in stratification: age, sex, race, geographic region, father's occupation, and urban-rural residence.

The McCarthy Scales reveal five indices that are reported as standard scores, with M = 50 and SD = 10. The overall General Cognitive Index (GCI) has a M = 100 and SD = 16 and gives an approximation of the child's ability to use acquired knowledge and to adapt that knowledge to new tasks.

Reliabilities for each of the scales are reported for the 10 different age groups included in the standardization sample (Sattler, 1992). The average split-half reliability is for the General Cognitive Index (r_{xx} =.93)and ranges from .79 to .88 for the other five scales.

The McCarthy Scales have acceptable concurrent validity with the Stanford Binet—Form L-M, WISC, WISC-R, WPPSI, K-ABC, and Slosson Intelligence Test used as criteria (Sattler, 1992, p. 298, although for learning disabled children, the concurrent validity is not as acceptable (Sattler, 1992, p. 298).

Scores on the McCarthy Scales are significantly correlated with scores on such standard achievement tests as the Metropolitan Achievement Tests, Peabody Individual Assessment Test, and the Wide-Range Achievement Test, indicating satisfactory predictive validity (Sattler, 1992, p. 298).

RESULTS

Data Analysis

Only observed variables were used in the model. Path modeling is appropriate for analyzing manifest variables because it includes the measurement error of all endogenous variables in the analysis (Klem, 1995). Table 5 presents the bivariate correlations of the variables analyzed in the model.

Amos 4 (Arbuckle & Wothke, 1999) was used to obtain the maximum likelihood estimates of the model coefficients.

Model Fit. The adequacy of fit for the path models was determined by considering the following indices in combination: Chi-Square ($\chi 2$) statistic, Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and Root-Mean-Square Error of Approximation (RMSEA)(for information about these indices, see Hu and Bentler, 1995). In general, a good-fitting model is one with a non-significant Chi-Square, a GFI and CFI of .90 or larger, and a RMSEA of .05 or less.

Path Analysis

The first prediction was that socioeconomic status (herein called SES) would directly predict child outcome including child behavior immaturity, emotion immaturity, and social immaturity (hereafter called "child behavior problems"), child verbal ability, and child puzzle-solving skill. The second prediction, which derived from the first, was that the direct relation between SES and child outcome would be mediated by

Table 5: Bivariate Correlations for all Variables in Models

	1	2	3	4	5	6	7
1. Dysthymia	1.00						
2. Depression	.618*	1.00					
3. Cohesion	-.223**	—	1.00				
4. SES	-.235**	-.355**	.185*	1.00			
5. Behavior Problems	—	—	-.223**	—	1.00		
6. Verbal Ability	—	-.260**	—	.203*	—	1.00	
7. Puzzle-Solving	—	—	—	.247**	—	.419**	1.00

*p < .05
**p > .01

maternal psychopathology and family cohesion. SES was also expected to be negatively related to maternal psychopathology and positively related to family cohesion. Psychopathology, in turn, was expected to be positively related to child behavior problems and negatively related to verbal ability and puzzle-solving. As for cohesion, it was expected to be negatively related to child behavior problems, and positively related to verbal ability and puzzle-solving.

Results for Models 1 and 2: Dysthymia Models

Models 1 and 2, the first two path models to be considered, examined the relation of socioeconomic status, maternal dysthymia, and family cohesion to child outcome. The results are shown in Figures 2 and 3.

Model Fit. Both models partially supported the outcome predictions, that is, had an overall acceptable fit to the data. For Model 1 the chi-square was not significant [$\chi 2(2)$, N = 151)= 2.511, p = 0.285], the GFI was 0.994, the CFI was 0.992, and the RMSEA was .055. Because both models fit the data, the chi-square difference test was conducted to determine whether one model made a better fit than the other. The results revealed that both models fit the data equally well [$\chi 2$Delta(2) = 3.321, N.S.].

Model 1

Socioeconomic Status. The first prediction - that SES would predict child behavior problems, verbal ability, and puzzle-solving skills – was not fully supported in Model 1. SES predicted neither child behavior problems

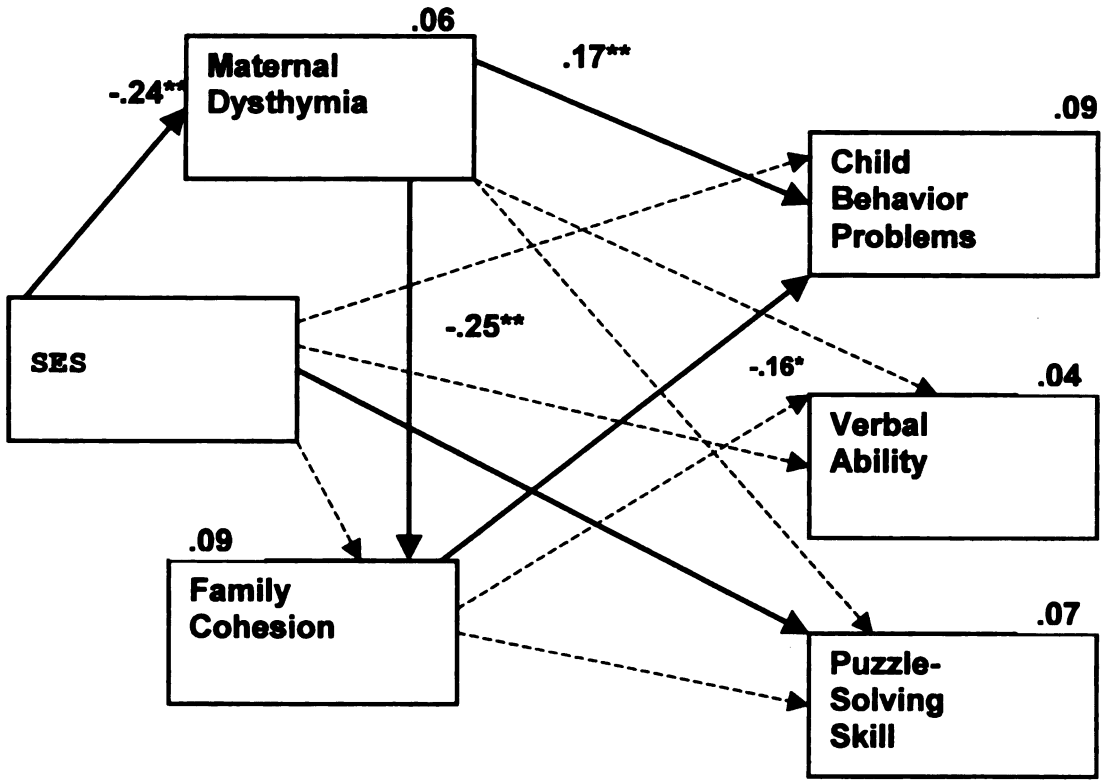


Figure 2. Model 1: Influence of SES, Maternal Dysthymia, and Family Cohesion on Child Outcome

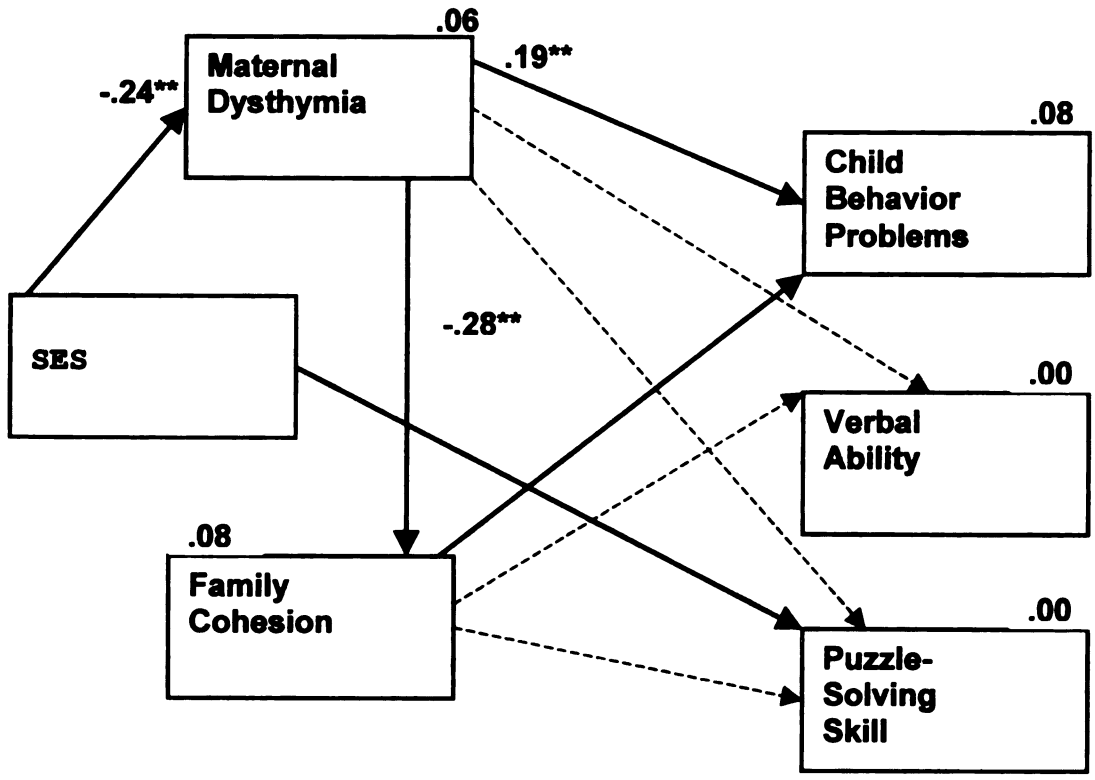


Figure 3. Model 2: Influence of SES, Maternal Dysthymia, and Family Cohesion, and Child Outcome

nor verbal ability, meaning that their predicted mediation by maternal dysthymia and family cohesion also was not supported. SES, however, did predict puzzle-solving although puzzle-solving, contrary to prediction, was not mediated by dysthymia or family cohesion. The results also showed the following direct relations to be significant: a) negative relation between SES and maternal dysthymia (lower levels of SES predicted higher levels of dysthymia); b) positive relation between maternal dysthymia and child behavior problems (the lower dysthymia, the fewer number of problems); c) negative relation between dysthymia and family cohesion (the lower the level of dysthymia, the higher the cohesion); d) and negative relation between family cohesion and child behavior problems (the lower the cohesion, the higher the number of problems).

Although SES did not directly predict child behavior problems, it was involved in two indirect paths: a) from SES to dysthymia and from dysthymia to behavior problems and b) from SES to dysthymia, from dysthymia to cohesion, and from cohesion to behavior problems.

Dysthymia. Maternal dysthymia was negatively and significantly related to family cohesion (the lower the dysthymia, the higher the cohesion) and positively and significantly related to child behavior problems (the higher the dysthymia, the higher the number of problems).

Family Cohesion. Family cohesion was directly and inversely relation to child behavior problems (the lower the cohesion, the higher the number of problems).

Mediation. As previously stated, the original mediation hypothesis was not supported. The results, however, revealed a partial mediation role for cohesion and for the relation between dysthymia and child behavior problems such that the lower the dysthymia, the higher the cohesion, and the higher the cohesion, the lower the number of problems.

Variance. Model 1 accounted for 35% of the variance, divided as follows: 20% for child outcome (9% for behavior problems, 4% for verbal ability, and 7% for puzzle-solving), 6% for dysthymia, and 9% for family cohesion.

Model 2

Socioeconomic Status. In Model 2, SES predicted only dysthymia and covaried with child verbal ability and puzzle-solving skill. The following direct paths were significant: a) negative relation between SES and dysthymia (lower levels of SES predicted higher levels of dysthymia; b) positive relation between dysthymia and child behavior problems (the lower the dysthymia, the lower the number of problems); c) negative relation between dysthymia and cohesion (the lower the level of dysthymia, the higher the cohesion); and d) negative relation between family cohesion and child behavior problems (the lower the cohesion, the higher the number of problems).

Again, although SES did not directly predict child behavior problems, it was involved in two indirect paths: a) from SES to dysthymia

and from dysthymia to behavior problems; and b) from SES to dysthymia, from dysthymia to cohesion, and from cohesion to behavior problems.

Dysthymia. Maternal dysthymia was negatively and significantly related to family cohesion (the lower the dysthymia, the higher the cohesion) and positively and significantly related to child behavior problems (the higher the dysthymia, the higher the number of problems).

Family Cohesion. Family cohesion was directly and inversely related to child behavior problems (the lower the cohesion, the higher the number of problems).

Mediation. As previously stated, the original mediation hypothesis was not supported. The result, however, revealed partial mediation, namely, that cohesion partially mediated the relation between maternal dysthymia and child behavior problems such that the lower the dysthymia, the higher the cohesion, and the higher the cohesion, the lower the number of problems. This is the same partial mediation process that was revealed in Model 1.

Variance. Model 2 accounted for 22% of the variance divided as follows: 8% for child outcome (all for behavior problems), 8% for cohesion, and 6% for maternal dysthymia.

In sum, models 1 and 2 accounted for 26% and 22% of the variance, respectively, leaving a substantial amount unaccounted for in both models.

Results for Models 3 and 4:

Major Depression with Psychotic Features Models

Models 3 and 4, the Major Depression with Psychotic Features Models (herein called the Depression Model), examined the relation of SES, maternal depression, and family cohesion on child outcome. Results of the path analysis for these models are shown in Figures 4 and 5.

Model Fit. As was the case for models 1 and 2, both Models 3 and 4 partially supported the outcome predictions, that is, both had an overall acceptable fit to the data. For Model 3 the chi-square was not significant [$\chi 2(2)$, N = 151) = 2.091, p = 0.352], the GFI was 0.995, the CFI was 0.999, and the RMSEA was 0.017. Likewise, for Model 4 the chi-square was not significant [$\chi 2(4)$, N = 151) = 6.756, p = 0.116], the GFI was .985, the CFI was .976, and the RMSEA was .048. Because both models fit the data, the chi-square difference test was conducted to determine whether one made a better fit than the other. The results revealed that both models fit the data equally well [$\chi 2$Delta(3) = 4.665, N.S.]. Results of the path analysis for these two models can be found in Figures 4 and 5.

Model 3

Socioeconomic status. For Model 3, the first prediction was that SES would predict child behavior problems, verbal ability and puzzle-solving skills. The prediction was partly supported. SES did not predict child behavior problems or verbal ability, which meant that their predicted mediation by maternal depression and family cohesion also was not

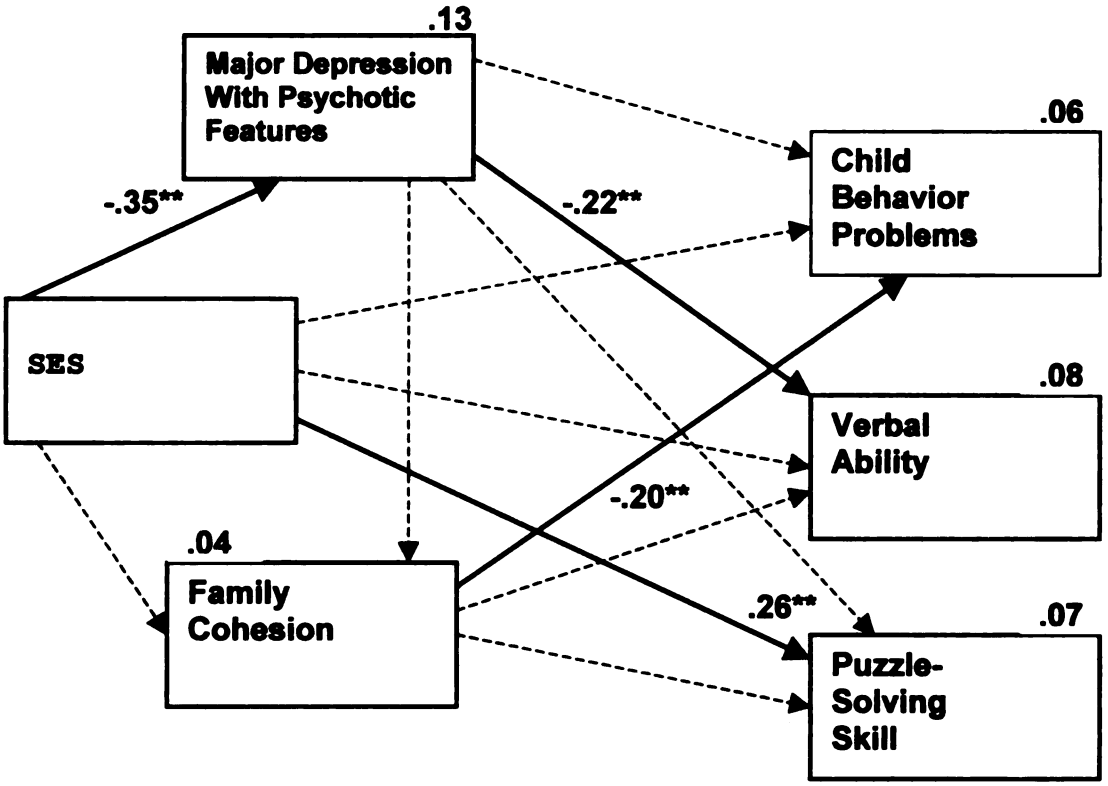
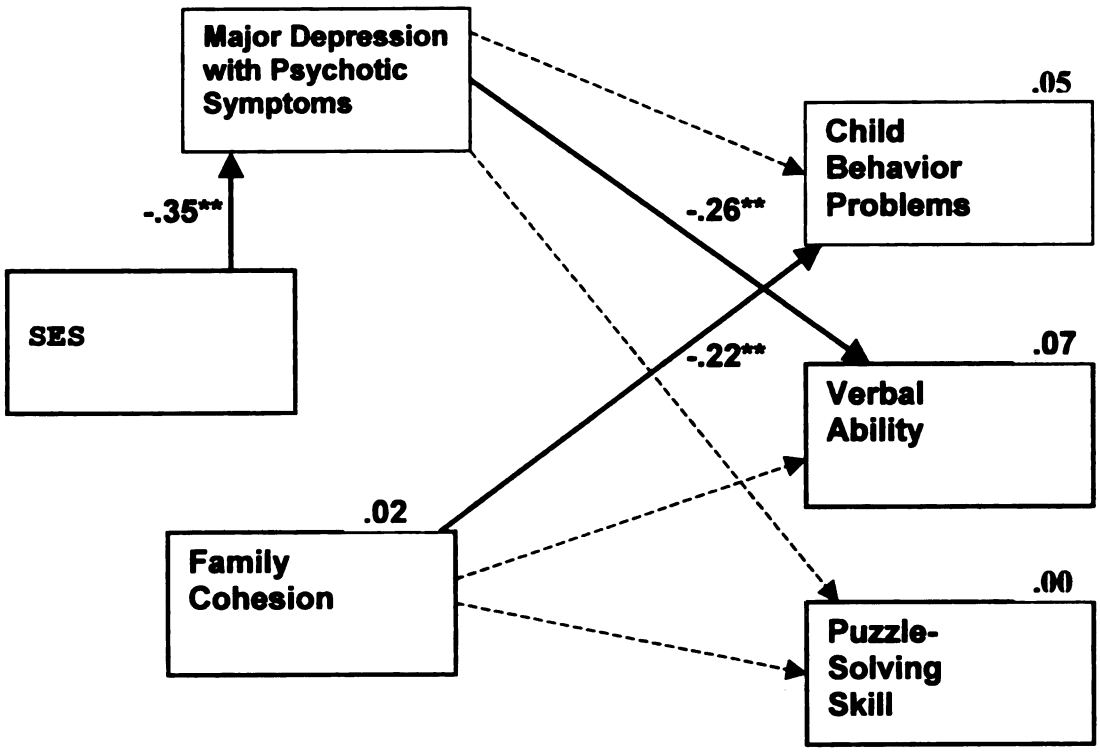


Figure 4. Model 3: Influence of SES, Major Depression with Psychotic Features, and Family Cohesion on Child Outcome



P < .05*
P < .01**

Indicates significant path
Indicates non-significant path

Figure 5. Model 4: Influence of SES, Major Depression with Psychotic Features, and Family Cohesion on Child Outcome

supported. SES, however, did predict puzzle-solving, although puzzle-solving skill was not mediated by depression or family cohesion.

In Model 3, lower SES was negatively and significantly related to levels of maternal depression (the lower the SES, the higher the depression) and positively and significantly related to child puzzle-solving skills (the lower the SES, the lower the skill).

Although SES did not directly predict child behavior problems, the model did reveal one indirect path to child outcome: from SES to maternal depression and from depression to verbal ability.

Depression. Maternal depression was negatively related to SES (the higher the depression, the lower the SES) and negatively related to verbal ability (the higher the depression, the lower the verbal ability). Contrary to prediction, depression was not related, either directly or indirectly, to child behavior problems.

Family Cohesion. Family cohesion was found to be significantly related to child behavior problems but, contrary to prediction, was not related, either directly or indirectly, to maternal depression.

Variance in Model 3. Model 3 accounted for 38% of the variance, divided as follows: 21% for child outcome (6% for behavior problems, 8% for verbal ability, 7% for puzzle-solving skill, 13% for maternal depression, and 4% for family cohesion.

Model 4

Socioeconomic Status. In Model 4, SES predicted only depression and covaried with child verbal ability and puzzle-solving skill. Only one direct path and one indirect path were significant. The direct path was a negative relation between SES and depression (lower levels of SES predicted higher levels of depression).

The indirect path was from SES to depression and from depression to verbal ability.

Depression. Depression was positively related to child verbal ability, but contrary to prediction, depression was not related to family cohesion, either directly or indirectly.

Family Cohesion. Family cohesion was directly and inversely related to child behavior problems (the lower the cohesion, the more the behavior problems), the same pattern as found in previous models.

Mediation. As previously stated, the original mediation hypothesis was not supported, and there were no other mediation paths in this model.

Variance. Model 4 accounted for 25% of the variance divided as follows: 12% for child outcome (5% for behavior problems, 7% for verbal ability) and 13% for maternal depression.

In sum, Models 3 and 4 accounted for 38% and 25% of the variance, respectively, leaving, as was the case for Models 1 and 2, a substantial amount unaccounted for.

DISCUSSION

One specific concern identified by teachers of young children in Jamaica is the emergence of serious behavior problems in the classroom. Thus, this has also become a serious issue for the Jamaican Ministry of Education. This study, undertaken from the perspective of the socioeconomic gradient (Keating & Hertzman, 1999) as a major influence on child outcome, examined family SES, maternal psychopathology, and family cohesion as three of many potential contributors to child outcome: emotion and social behavior, verbal ability, and puzzle-solving skill. The relations that emerged proved to be complex, and, as predicted, strongly influenced by SES.

SES, Maternal Psychopathology, and Family Cohesion

In studies focusing on children from low-income families and their performance in school settings, SES is a salient predictor of outcome (Brooks-Gunn et al., 1999; Stipek, 2001; Stipek & Ryan, 1997). It also proved to be a strong contributor to child outcome in this study. Low family SES, for example, directly predicted low puzzle-solving skill. One straightforward explanation is economic: low SES restricts the family's ability to purchase puzzles and, in addition, many of the Basic Schools, because of their own limited resources, do not have puzzles available either. Thus, the child's opportunity to practice and master that skill is not available. It may be, however, that because Jamaican parents believe that

school, even for young children, should focus on reading and writing that they do not invest limited resources on puzzles and similar materials.

Lower SES is often associated with higher levels of maternal psychopathology. In this study, lower SES made a somewhat larger contribution to major depression with psychotic features than it did to maternal dysthymia. These findings are not unique to Jamaica; in most countries there is an established inverse relation between SES and severity of mental illness in the population (Keating & Hertzman, 1999).

Mothers with low chronic levels of dysthymia often have children with behavior problems (Campbell, 1995; Lang, Field, Pickens, & Martinez, 1996; Stormont, 1998). This may be because dysthymia can restrict an individual's desire to participate in daily activities, and thus, might lower the amount of time the mother spends with the child, or mother-child interaction may be more directive, demanding, or controlling, maternal factors associated with behavior problems in young children (Campbell, 1995).

Higher levels of maternal dysthymia are also reflected in lower levels of family cohesion. Because the majority of Jamaican families are matriarchal, maternal dysthymia may exert an influence over general family functioning. In this study, dysthymia influenced both the family and the child, by contributing to lower levels of functioning for both. Contrary to prediction, dysthymia was not related to the verbal ability of the child, a strong relation found in previous non-Jamaican studies, nor did it

contribute directly to lower puzzle-solving skills; its major influence was behavioral only.

Although major depression with psychotic features is a more serious and debilitating illness than is dysthymia, contrary to prediction, major depression with psychotic features did not directly predict child behavior problems, defined as emotion and social immaturity. At first glance, this seems counter-intuitive. Perhaps it means that mothers with severe psychopathology do not frequently interact with their children because daily monitoring and care are taken on by other family members (Scott-McDonald, 1997). Thus, the disturbed mother does not spend sufficient time with the child to influence its behavior, either positively or negatively. High levels of major depression with psychotic features did, however, predict lower levels of child verbal ability. Because there is less frequent mother-child interaction, there may be overall less conversation and discussion with the child, or the conversation and discussion may reflect the cognitive deficits and distortions that are part of the illness, thus manifesting in lower verbal ability for the child.

Low family cohesion was directly related to a high number of child behavior problems. This finding is similar to those found in the existing literature on family functioning and child outcome (Kupersmidt, J. B., Griesler, P. C., DeRosier, M. E., & Patterson, C. J., 1995; Mathijssen, J.J. P., Koot, H. M., Verhulst, F. C., DeBruyn, E., & Oud, J. H., 1998; Sroufe, L. A. & Fleeson, J. 1988).

Thus, child behavior problems were independently influenced by the level of family cohesion and the level of maternal dysthymia, supporting the hypothesis of the importance and influence of family on child outcome in Jamaican daily life. As also might be expected, family and maternal functioning were also influenced by the level of available economic resources.

The current study has some obvious limitations. One such limitation focuses on sample issues and the ability to generalize from this sample to all Jamaican children in early childhood programs. The sample, which was a recruited and not a random sample, came from one small section of the island (Kingston) where SES is generally within the same low-end range (Grant, 1974). This raises issues of ecological validity and thus the ability to generalize these results across the whole island of Jamaica is limited. Further studies involving samples from a variety of early childhood programs serving the full range of SES across Jamaica would need to be conducted to determine if paths to child outcome, or child outcome itself, remain the same. There is some indication that this may not be the case; that outcome is related to SES and to the socialization of the children as to parental expectations for school performance (Evans, 1989).

A second limitation concerns the source of the data. All data used to assess maternal psychopathology, family cohesion, and child behavior problems came from the mothers, creating a problem with method variance (Pedhazur, 1973). To avoid such problems in the future, information should

ideally come from multiple sources, including other persons who are integral to the household and from persons who interact with the child outside the home, including the child's teacher.

A third limitation, related to the second, is that father or father-figures were not included in the study. It is known that fathers, however, play an important role, whether directly or indirectly, in the socialization of a child (Brown, Newland, Anderson, & Chevannes, 1997; DeKlyen, M., Biernbaum, M. A., Greenberg, M. T., & Speltz, M. L., 1998). This problem could not be avoided in the current study; no fathers were included in the sample. In future studies, every attempt should be made to include fathers.

While the factor structures of the measures were tested and new factors developed, one cannot be certain that the measures held appropriate content and cultural validity for Jamaicans. Research should determine the content structure for constructs addressed in the study.

Because this study was cross-sectional, what is not known is the causal direction between the variables. Lower SES may contribute to higher levels of psychopathology; higher levels of psychopathology may contribute to lower family and individual SES; or the relations may be recursive. Our need for understanding causal direction for these factors calls for future research to consider longitudinal designs (Campbell, 1991; Moffitt, 1990). Longitudinal design provides the only true way to answer the questions about developmental process over time. At this point, very

few, if any, longitudinal studies have been done with Jamaican children and families. This should be a goal for further research.

Implications and Future Directions

Jamaica has made a strong commitment to provide education for young children. For educators who teach young children, school readiness is an important issue and is complex in its definitions and attributes. As previously discussed, three factors, among many, identified as contributing to a positive experience in preschool are behavior regulation, the ability to use language to express feelings, ideas, and to ask questions, and puzzle-solving skills, a proxy for experience with manipulatives and visual problem-solving.

How do the results of this research inform the thinking of the Ministry of Education? As already stated, Jamaica is a developing country with extremes of wealth and poverty, high unemployment, and high inflation and, for many, a declining standard of living (Bartilow, 1997). The stressors, therefore, on families and children are high and are likely to remain so for the foreseeable future. In light of these difficulties, Jamaica's decision to commit itself strongly to education is well-founded inasmuch as an educated citizenry is one of the most effective ways to support social and economic development.

The emergence of serious behavior problems among young children, a factor that can seriously interfere with their learning, therefore, is serious and needs to be addressed. Two avenues of explanation, obviously

interrelated, are possible: contributions of the home may contribute to either or both the child's readiness to learn or the child's lack of readiness to function in the social context of school. Difficulties with either of these factors have been associated with poor school adjustment (Lambert, M. C., Thesiger, C., Overly, K., & Knight, F., 1990). It may be, however, that the school curriculum and teachers are not suited to the needs and capabilities of the child (Johnson & Brown, 1995; Morrison et al., 1998), and the flexibility and skills needed by the teachers and teacher-educators to modify the curriculum may not be available. This may be because of administrative or parental expectations or lack of proper training and support of teachers to meet the expectations, or a combination of factors.

From many teachers' perspectives, problem behaviors and the skills necessary for school success begin at home. There is, of course, much that is true in this supposition (Stipek, 2001), and indeed, in the United States this is a common belief. At the same time, at least some of the difficulties children experience at school, either with learning or behavior, can either begin in school or be exacerbated by experience there. To date, this reciprocal relation is still insufficiently studied and understood (Stipek, 2001). The understanding of what is school readiness is one that is currently under much discussion (Carlton & Winsler, 1999; Crnic & Lamberty, 1994; Holloway, Rambaud, Fuller, & Eggers-Pierola, 1995; May & Kundert, 1997). Although this study did not examine teacher attitudes, beliefs, or components of teacher training, the role of the teacher in

fostering successful and productive classroom experience is well documented (Brookfield, 1995; Rodgers-Jenkins & Chapman, 1990). Research has also heightened our awareness that the influence adults' implicit and tacit beliefs about the nature of the child and the purpose of curriculum are reflected in the way content is presented and expectations for children are defined (Brookfield, 1995). Expectations, for example, from the Ministry of Education support a creative and well-managed early childhood program with many opportunities for individual free-choice activities, and small and large group activities. Expectations, however, from parents stress academic achievement, rote learning, and less creative endeavors as markers of a successful school experience, even for young children (Johnson & Brown, 1995; Morrison et al., 1998). Children may come to school with one set of expectations from their parents and experience another set of expectations from their teachers and not know how to negotiate the territory.

Parental discipline styles may also influence how children are prepared to handle the openness of a more constructivist classroom environment (Lefkowitz, Huesman, Eron, 1978; Portes, Cuentas, & Zady, 2000; Portes, Sandu, Cuentas, & Zady, 1995). Children who have been reared with physical punishment as the primary means of discipline often have difficulties in environments where the emphasis is on choice and cooperative learning (Brenner & Fox, 1998). If this is the case, and the Ministry of Education wants to promote more constructivist forms of early

childhood education, teachers will have to be well-trained in the forms of discipline and guidance that facilitate this type of learning.

To successfully ameliorate this problem, ways to support both the family and school will have to be considered, developed, and implemented. Results of future research can inform policies on mental health in families and its relation to child outcome and suggestions for needed support in light of the many stressors found in Jamaican society. Future research can also inform issues of teacher training so that teachers can successfully meet the expectations of the Ministry of Education and meet the needs of the children they are serving.

APPENDICES

APPENDIX A

Frequency Tables for Variables in Analyzed and Archival Models

Table 6 : Frequency Table of Puzzle Solving Scores from the McCarthy Scales of Child Development

PUZZLE SOLVING

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	24	11	7.3	7.3	7.3
	27	10	6.6	6.6	13.9
	30	15	9.9	9.9	23.8
	36	24	15.9	15.9	39.7
	39	5	3.3	3.3	43.0
	45	12	7.9	7.9	51.0
	48	7	4.6	4.6	55.6
	51	9	6.0	6.0	61.6
	54	10	6.6	6.6	68.2
	57	12	7.9	7.9	76.2
	60	5	3.3	3.3	79.5
	63	9	6.0	6.0	85.4
	64	1	.7	.7	86.1
	66	5	3.3	3.3	89.4
	69	3	2.0	2.0	91.4
	75	3	2.0	2.0	93.4
	81	3	2.0	2.0	95.4
	84	1	.7	.7	96.0
	90	1	.7	.7	96.7
	93	1	.7	.7	97.4
	96	1	.7	.7	98.0
	102	3	2.0	2.0	100.0
	Total	151	100.0	100.0	

Table 7: Frequency Table of Visual Factor Scores from the McCarthy Scales of Child Development

VISUAL FACTOR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	50-59	3	2.1	2.1	2.0
	60-69	13	8.9	8.9	10.6
	70-79	16	10.7	10.7	21.2
	80-89	28	18.5	18.5	39.7
	90-99	34	22.5	22.5	62.3
	100-109	30	19.9	19.9	82.1
	110-119	19	12.6	12.6	94.7
	120-129	4	2.7	2.7	97.4
	130-139	3	2.1	2.1	99.3
	140-144	1	.7	.7	100
Total		151	100	100	

Table 8: Frequency Table of Conceptual Grouping Scores from the McCarthy Scales of Child Development

CONCEPTUAL GROUPING

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	24	1	.7	.7	.7
	27	13	8.6	8.6	9.3
	33	15	9.9	9.9	19.2
	36	12	7.9	7.9	27.2
	42	9	6.0	6.0	33.1
	45	14	9.3	9.3	42.4
	51	11	7.3	7.3	49.7
	57	22	14.6	14.6	64.2
	66	24	15.9	15.9	80.1
	75	11	7.3	7.3	87.4
	96	11	7.3	7.3	94.7
	102	8	5.3	5.3	100.0
	Total	151	100.0	100.0	

Table 9: Frequency Table of Verbal Factor Scores from the McCarthy Scales of Child Development

VERBAL FACTOR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	49-59	5	3.4	3.4	3.3
	60-69	17	11.3	11.3	14.6
	70-79	21	13.8	13.8	28.5
	80-89	29	19.3	19.3	47.7
	90-99	32	21.1	21.1	68.9
	100-109	19	12.6	12.6	81.5
	110-119	15	9.9	9.9	91.4
	120-129	8	5.3	5.3	96.7
	130-139	2	1.4	1.4	98.0
	140-149	3	2.1	2.1	100
Total		151	100	100	

Table 10: Frequency Table of Mothers' Educational Attainment

Mothers education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	did not completed primary/all-age	1	.7	.7	.7
	completed primary	9	6.0	6.3	7.0
	completed all-age	21	13.9	14.7	21.7
	completed secondary/high/technical	105	69.5	73.4	95.1
	completed secreterial/ commercial college	5	3.3	3.5	98.6
	completed university	2	1.3	1.4	100.0
	Total	143	94.7	100.0	
Missing	99	8	5.3		
Total		151	100.0		

Table 11: Frequency Table of Parents' Relationship Status

Parents' relationship

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	married	35	23.2	23.2	23.2
	living together	39	25.8	25.8	49.0
	visiting	13	8.6	8.6	57.6
	separated	53	35.1	35.1	92.7
	none	11	7.3	7.3	100.0
	Total	151	100.0	100.0	

Table 12: Frequency Distribution of Mother's Age

Mother's Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19	1	.7	.7	.7
	20	2	1.3	1.3	2.0
	21	4	2.6	2.6	4.6
	22	4	2.6	2.6	7.3
	23	10	6.6	6.6	13.9
	24	4	2.6	2.6	16.6
	25	3	2.0	2.0	18.5
	26	18	11.9	11.9	30.5
	27	11	7.3	7.3	37.7
	28	6	4.0	4.0	41.7
	29	6	4.0	4.0	45.7
	30	9	6.0	6.0	51.7
	31	7	4.6	4.6	56.3
	32	13	8.6	8.6	64.9
	33	7	4.6	4.6	69.5
	34	4	2.6	2.6	72.2
	35	7	4.6	4.6	76.8
	36	2	1.3	1.3	78.1
	37	3	2.0	2.0	80.1
	38	3	2.0	2.0	82.1
	39	9	6.0	6.0	88.1
	40	6	4.0	4.0	92.1
	41	3	2.0	2.0	94.0
	42	4	2.6	2.6	96.7
	43	2	1.3	1.3	98.0
	45	1	.7	.7	98.7
	46	1	.7	.7	99.3
	51	1	.7	.7	100.0
	Total	151	100.0	100.0	

Table 13: Frequency Table of Child IQ Scores

CHILD`S IQ.		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	60-69	15	10.0	10.0	9.9
	70-79	23	15.2	15.2	25.2
	80-89	34	22.5	22.5	47.7
	90-99	41	27.0	27.0	74.8
	100-109	24	16.0	16.0	90.7
	110-119	10	6.5	6.5	97.4
	120-129	2	1.3	1.3	98.7
	130-139	2	1.4	1.4	100.0
		151	100	100	

Table 14: Frequency Table of Study Children in Six Basic Schools

Schools

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Water Com	30	19.9	19.9	19.9
	Providence	31	20.5	20.5	40.4
	August Twn	15	9.9	9.9	50.3
	Mona Com	13	8.6	8.6	58.9
	Hope Val	31	20.5	20.5	79.5
	Shady Gr	31	20.5	20.5	100.0
	Total	151	100.0	100.0	

Table 15: Frequency Table of Age of Study Children

Child's Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0 – 3.99	26	17.2	17.2	17.2
	4.0 – 4.99	41	27.2	27.2	44.4
	5.0 – 5.99	52	34.4	34.4	78.8
	6.0 – 6.99	32	21.2	21.2	100.0
Total		151	100	100	

Table 16: Frequency Table of Total Socioeconomic Status of Families of Study Children

totalses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6.00	1	.7	.7	.7
	9.00	2	1.3	1.3	2.0
	10.00	3	2.0	2.0	4.0
	11.00	4	2.6	2.6	6.6
	12.00	8	5.3	5.3	11.9
	13.00	8	5.3	5.3	17.2
	14.00	10	6.6	6.6	23.8
	15.00	15	9.9	9.9	33.8
	16.00	24	15.9	15.9	49.7
	17.00	25	16.6	16.6	66.2
	18.00	37	24.5	24.5	90.7
	19.00	14	9.3	9.3	100.0
	Total	151	100.0	100.0	

Table 17: Frequency Table of Immaturity Scores from the Conners Behavioral Scales

Immaturity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	4	2.6	2.6	2.6
	1.00	7	4.6	4.6	7.3
	2.00	6	4.0	4.0	11.3
	3.00	12	7.9	7.9	19.2
	4.00	8	5.3	5.3	24.5
	5.00	14	9.3	9.3	33.8
	6.00	12	7.9	7.9	41.7
	7.00	9	6.0	6.0	47.7
	8.00	13	8.6	8.6	56.3
	9.00	13	8.6	8.6	64.9
	10.00	7	4.6	4.6	69.5
	11.00	9	6.0	6.0	75.5
	12.00	2	1.3	1.3	76.8
	13.00	5	3.3	3.3	80.1
	14.00	8	5.3	5.3	85.4
	15.00	2	1.3	1.3	86.8
	16.00	5	3.3	3.3	90.1
	17.00	4	2.6	2.6	92.7
	18.00	1	.7	.7	93.4
	19.00	2	1.3	1.3	94.7
	20.00	2	1.3	1.3	96.0
	22.00	1	.7	.7	96.7
	23.00	1	.7	.7	97.4
	25.00	2	1.3	1.3	98.7
	26.00	1	.7	.7	99.3
	34.00	1	.7	.7	100.0
	Total	151	100.0	100.0	

Table 18: Frequency Table of Hyperactivity Scale from the Conners Behavioral Scale

Hyperactivity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	1.3	1.3	1.3
	3.00	2	1.3	1.3	2.6
	4.00	3	2.0	2.0	4.6
	5.00	4	2.6	2.6	7.3
	6.00	1	.7	.7	7.9
	7.00	9	6.0	6.0	13.9
	8.00	4	2.6	2.6	16.6
	9.00	14	9.3	9.3	25.8
	10.00	6	4.0	4.0	29.8
	11.00	11	7.3	7.3	37.1
	12.00	13	8.6	8.6	45.7
	13.00	8	5.3	5.3	51.0
	14.00	11	7.3	7.3	58.3
	15.00	5	3.3	3.3	61.6
	16.00	11	7.3	7.3	68.9
	17.00	5	3.3	3.3	72.2
	18.00	10	6.6	6.6	78.8
	19.00	2	1.3	1.3	80.1
	20.00	6	4.0	4.0	84.1
	21.00	3	2.0	2.0	86.1
	22.00	4	2.6	2.6	88.7
	23.00	5	3.3	3.3	92.1
	24.00	4	2.6	2.6	94.7
	25.00	3	2.0	2.0	96.7
	26.00	3	2.0	2.0	98.7
	27.00	1	.7	.7	99.3
	29.00	1	.7	.7	100.0
	Total	151	100.0	100.0	

Table 19: Frequency Table of Family Cohesion Factor on the FACES

Family Cohesion Score

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10.00	1	.7	.7	.7
	11.00	2	1.3	1.3	2.0
	12.00	1	.7	.7	2.6
	13.00	2	1.3	1.3	4.0
	14.00	2	1.3	1.3	5.3
	16.00	8	5.3	5.3	10.6
	17.00	3	2.0	2.0	12.6
	19.00	3	2.0	2.0	14.6
	20.00	6	4.0	4.0	18.5
	21.00	6	4.0	4.0	22.5
	22.00	4	2.6	2.6	25.2
	23.00	5	3.3	3.3	28.5
	24.00	6	4.0	4.0	32.5
	25.00	8	5.3	5.3	37.7
	26.00	16	10.6	10.6	48.3
	27.00	10	6.6	6.6	55.0
	28.00	13	8.6	8.6	63.6
	29.00	13	8.6	8.6	72.2
	30.00	10	6.6	6.6	78.8
	31.00	8	5.3	5.3	84.1
	32.00	7	4.6	4.6	88.7
	33.00	5	3.3	3.3	92.1
	34.00	8	5.3	5.3	97.4
	35.00	2	1.3	1.3	98.7
	36.00	2	1.3	1.3	100.0
	Total	151	100.0	100.0	

Table 20: Frequency Table of the Dysthymia Scores on the Brief Symptom Inventory

Dysthymia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	39	25.8	25.8	25.8
	1.00	23	15.2	15.2	41.1
	2.00	10	6.6	6.6	47.7
	3.00	15	9.9	9.9	57.6
	4.00	9	6.0	6.0	63.6
	5.00	8	5.3	5.3	68.9
	6.00	13	8.6	8.6	77.5
	7.00	7	4.6	4.6	82.1
	8.00	5	3.3	3.3	85.4
	9.00	1	.7	.7	86.1
	10.00	2	1.3	1.3	87.4
	11.00	4	2.6	2.6	90.1
	12.00	4	2.6	2.6	92.7
	13.00	3	2.0	2.0	94.7
	14.00	4	2.6	2.6	97.4
	15.00	1	.7	.7	98.0
	16.00	1	.7	.7	98.7
	17.00	2	1.3	1.3	100.0
	Total	151	100.0	100.0	

Table 21: Frequency Table of Psychotic Scores on the Brief Symptom Inventory

Psychotic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	63	41.7	41.7	41.7
	1.00	20	13.2	13.2	55.0
	2.00	21	13.9	13.9	68.9
	3.00	13	8.6	8.6	77.5
	4.00	7	4.6	4.6	82.1
	5.00	4	2.6	2.6	84.8
	6.00	5	3.3	3.3	88.1
	7.00	5	3.3	3.3	91.4
	8.00	1	.7	.7	92.1
	9.00	2	1.3	1.3	93.4
	10.00	2	1.3	1.3	94.7
	11.00	2	1.3	1.3	96.0
	12.00	1	.7	.7	96.7
	15.00	1	.7	.7	97.4
	18.00	1	.7	.7	98.0
	19.00	1	.7	.7	98.7
	22.00	2	1.3	1.3	100.0
	Total	151	100.0	100.0	

APPENDIX B

Frequency Distributions for Variables in Analyzed and Archival Models

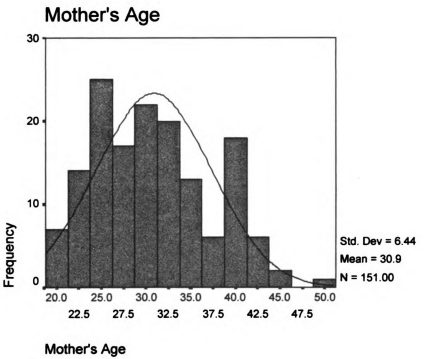


Figure 6: Frequency Distribution of Mothers' Age

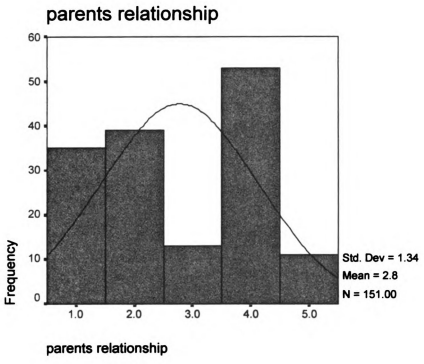


Figure 7: Frequency Distribution of Parents' Relationship

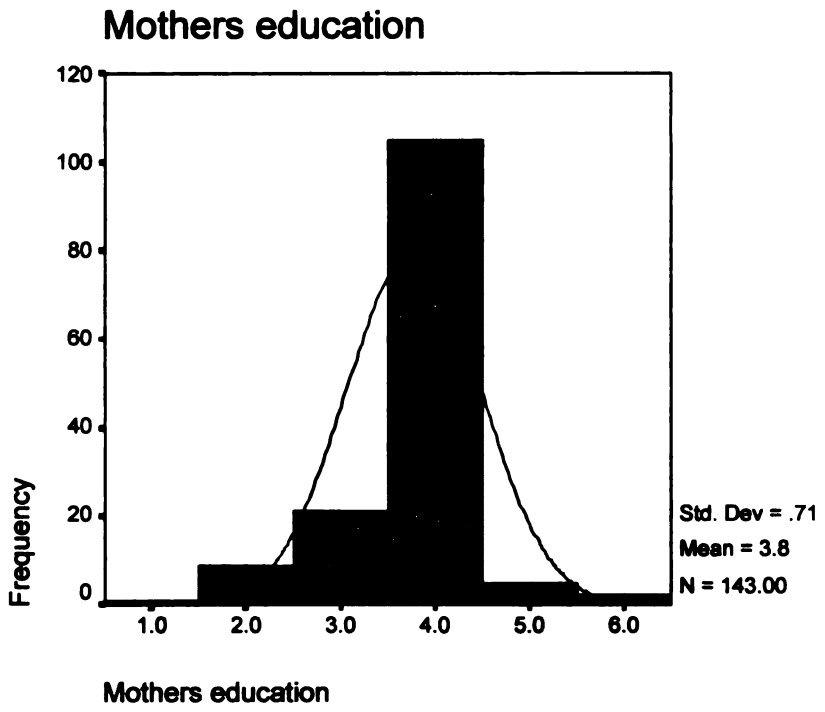


Figure 8: Frequency Distribution of Mothers' Education

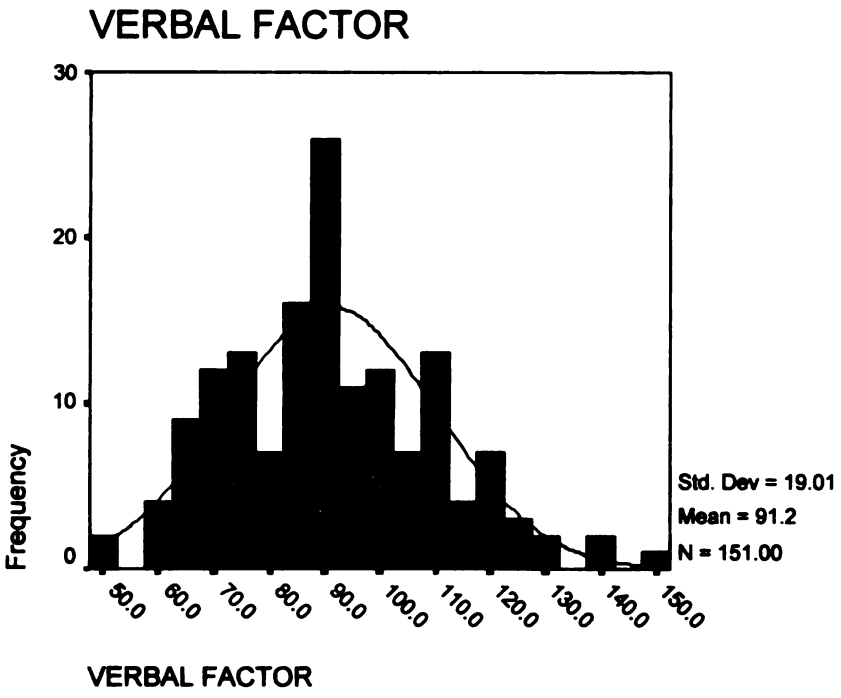


Figure 9: Frequency Distribution of Verbal Factor Scores from the McCarthy Scales of Child Development

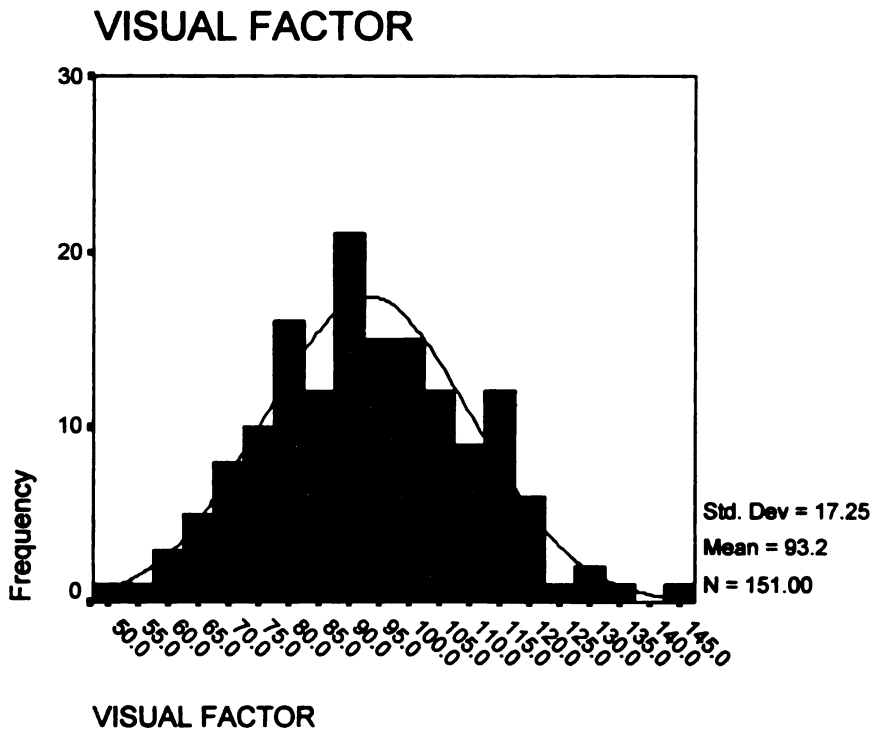


Figure 10: Frequency Distribution of Visual Factor Scores from the McCarthy Scales of Child Development

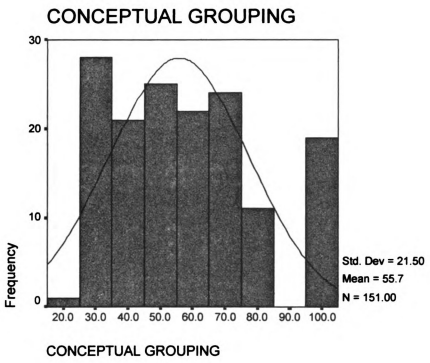
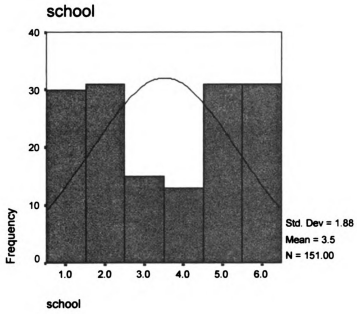


Figure 11: Frequency Distribution of Conceptual Grouping Scores from the McCarthy Scales of Child Development



School 1	**Water Commission**
School 2	**Providence**
School 3	**August Township**
School 4	**Mona Commission**
School 5	**Hope Valley**
School 6	**Shady Grove**

Figure 12: **Frequency Distribution of Study Children at Basic Schools**

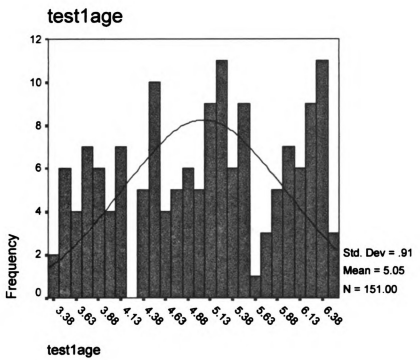


Figure 13: Frequency Distribution of Age of Study Children

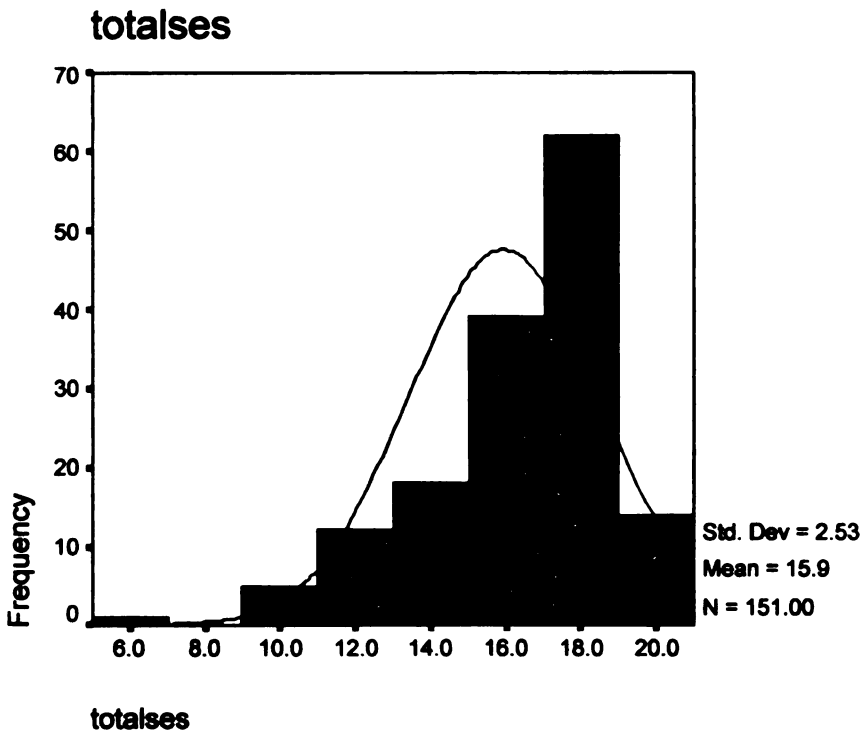


Figure 14: Frequency Distribution of Total Socioeconomic Status of Families of Study Children

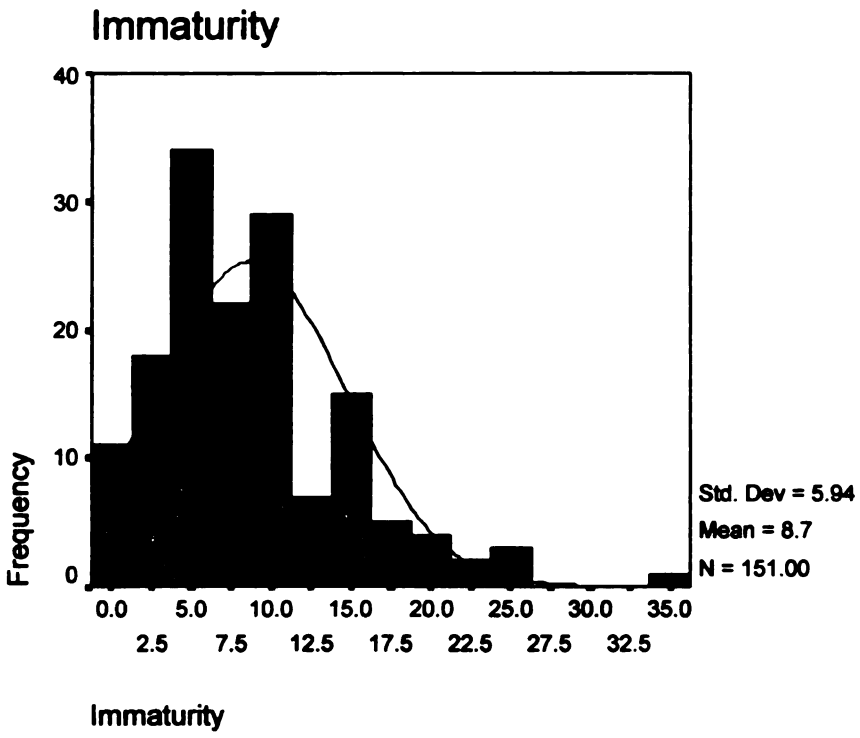


Figure 15: Frequency Distribution of Immaturity Scores from the Conners Behavioral Scales

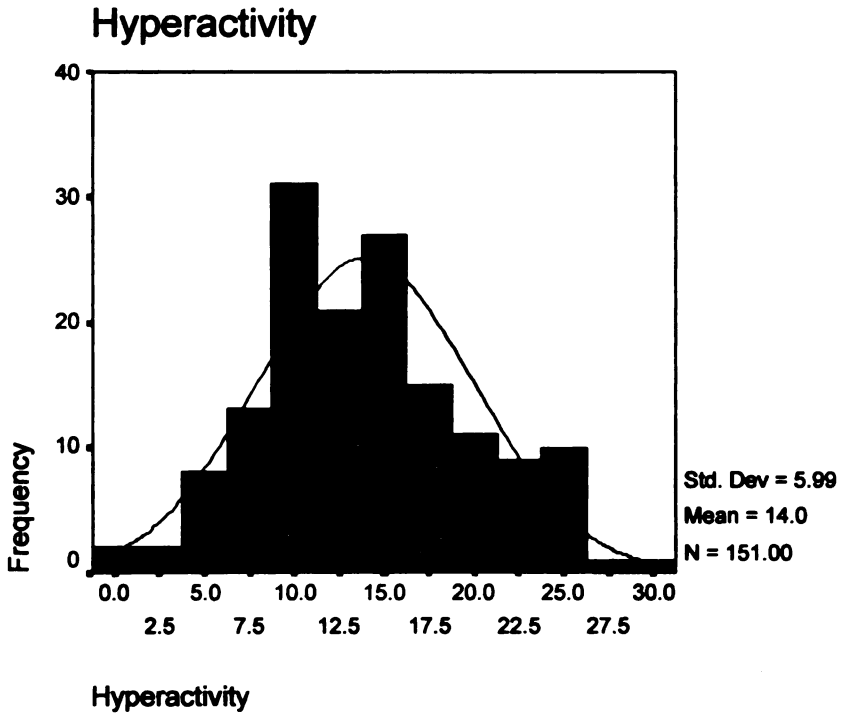


Figure 16: Frequency Distribution of Hyperactivity Factor Scores from the Conners Behavioral Scale

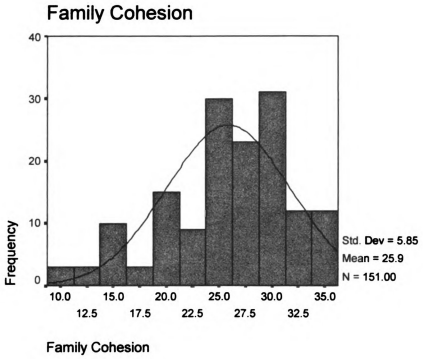


Figure 17: Frequency Distribution of Family Cohesion Factor Scores on the FACES

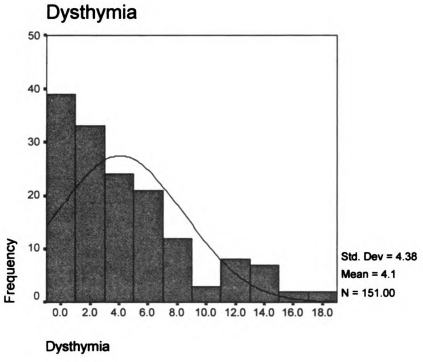


Figure 18: Frequency Distribution of Dysthymia Factor Scores on the Brief Symptom Inventory

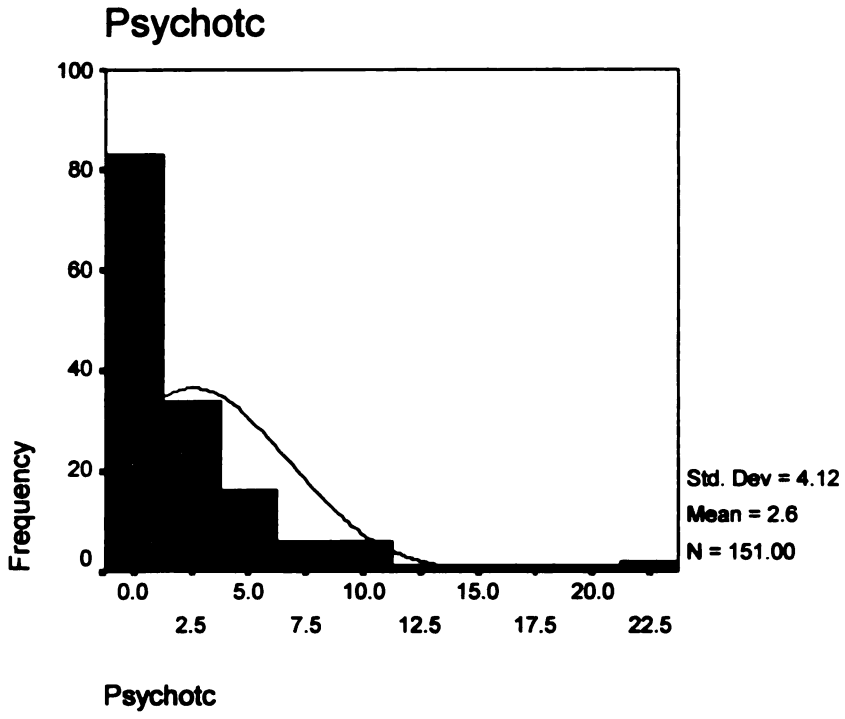
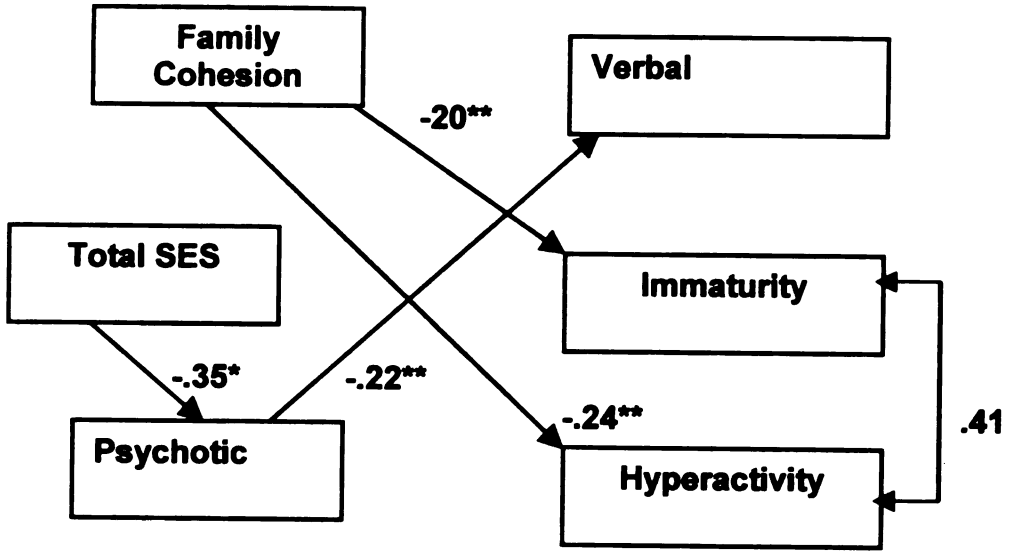


Figure 19: Frequency Distribution of Psychotic Factor Scores on the Brief Symptom Inventory

APPENDIX C

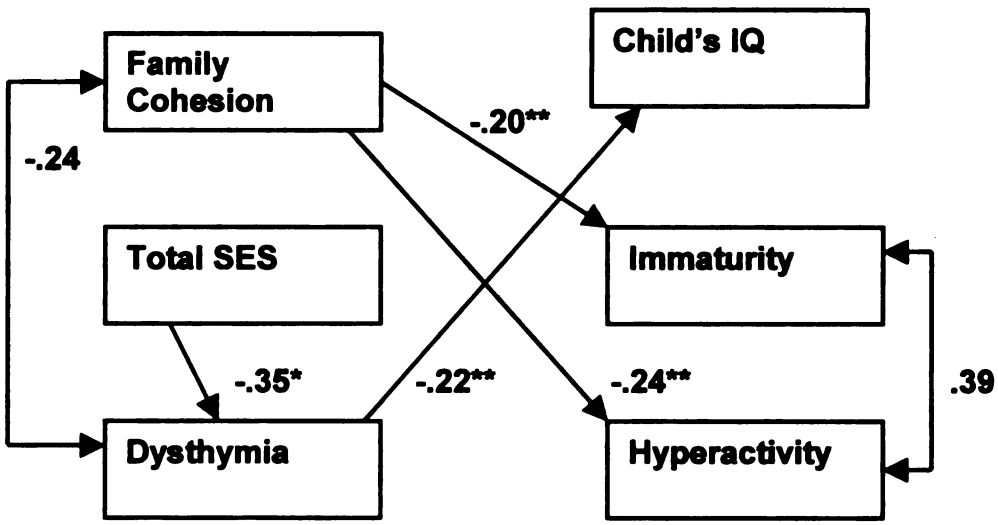
ARCHIVAL MODELS



* = p < .05
** = p < .01

X^2 = 2.963
DF = 3
P = 0.397

Figure 20: **Archival Model: Influence of SES, Maternal Psychotic Behavior, and Family Cohesion on Child Outcome**



* = p < .05
** = p < .01

X^2 = 7.116
DF = 6
P = 3.310

Figure 21: Archival Model: Influence of SES, Maternal Dysthymia, and Family Cohesion on Child Outcome

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