# RELATIONSHIP OF HIGH SCHOOL STUDENTS' KNOWLEDGE OF CHILD DEVELOPMENT TO POTENTIAL

FOR CHILD ABUSE

By

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1985

Submitted to the Faculty of the Graduate College of the Oklahoma State University in partial fulfillment of the requirements for the Degree of MASTER OF SCIENCE December, 1987

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### ACKNOWLEDGMENTS

The writer wishes to express her appreciation to all who have contributed to make this study possible.

To my major adviser, Dr. Arlene M. Fulton, goes sincere thanks for her tremendous guidance and unselfish donation of time throughout this research.

Special thanks goes to Dr. Sarah Anderson for her critical reading of the manuscript and her valuable suggestions.

Many thanks are extended to Dr. Kathryn Castle and Mona Lane for their encouragement and much-needed moral support.

Gratitude is extended to the administration, faculty, and senior students of Bartlesville High School for their participation and cooperation in this study.

Endless appreciation is expressed to my friends, the Gillispies, for the unlimited use of their computer.

Finally, the writer wishes to express gratitude and love to her parents, whose many sacrifices made a college career possible.

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Relationship of High School Students' Knowledge of Child Development to Potential

for Child Abuse

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#### Abstract

This study was conducted to determine how much high school seniors know about children's normative development and whether this knowledge is correlated with a potential to The Knowledge Inventory of Child Development and abuse. Behavior: Infancy to School-Age (KIDS) and the Child Abuse Potential Inventory (CAP) were administered to 233 high school seniors (150 females and 83 males). The results indicated that high school seniors scored only 57% correct on the measure of child development knowledge. High school senior males knew less than high school senior females. The negative correlation between potential for abuse and total child development knowledge proved to be highly significant, F(1, 231) = 12.01, g(.0006. These findings suggest a need for parent education, which includes education for childhood development, in order to minimize the effects that limited knowledge may have on potential for abuse.

# RELATIONSHIP OF HIGH SCHOOL STUDENTS' KNOWLEDGE OF CHILD DEVELOPMENT TO POTENTIAL

### FOR CHILD ABUSE

Recent research has indicated that parents who are knowledgeable about how children grow and develop are better able to establish healthy relationships with their own children. Moxley-Haegert and Serbin (1983) studied the effects of developmental education on parental motivation and children's development in families with developmentally delayed infants. They found in a one-year follow-up that parents who had received developmental education continued to participate more than other parents in their child's treatment program. Developmental education appeared to enable the parents to discriminate small developmental gains, which facilitated the intrinsic motivation involved in working with their children.

Stevens (1984) examined the relationship between parents' knowledge of child development and their ability to design a quality home learning environment. Two hundred and forty-three mothers of infants were administered measures of child development knowledge and parenting skill. In the final analysis, parents who knew more about critical environmental factors and infant normative development scored higher on the parenting skill measure.

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According to a study done by Twentyman and Plotkin in 1982, knowledge of child development seemed to reduce the chance for child abuse. When Twentyman and Plotkin (1982) examined levels of child development knowledge in both abusive and nonabusive parents, they found that parents who had abused or neglected their children were less knowledgeable about children's developmental processes.

DeLissovoy (1973) came to a similar conclusion when he studied 48 couples of adolescent parents. The young parents in the study found parenting to be a trying experience and were "prone to use physical punishment with their children" (p. 22). DeLissovoy (1973) contended that the restrictive and sometimes punitive behavior of the parents could be credited in part to their unrealistic developmental and behavioral expectations of their children, which were generated by a lack of child development and childrearing knowledge.

Johnson, Loxterkamp and Albanese (1982) used the Iowa Child Development Test to study high school students' knowledge of child development in relation to the effects on their disciplinary approaches. Results of the study indicated a relationship between the lack of child development knowledge and abusive approaches to discipline problems. Data further revealed that the males in the study had selected harsh disciplinary responses more frequently than the females.

Showers and Johnson (1984) conducted a study of college students' knowledge of child development and found similar results. The Iowa Child Development Test was utilized with this college sample as well. The results of the study suggested that not only did the college students have inadequate knowledge concerning child development, but that the students who were least knowledgeable about child development were those that chose harsh disciplinary methods most frequently.

In a later study by Showers and Johnson (1985), the Iowa Child Development Test was administered to a sample of urban adolescents to determine their knowledge of child development and child health and its relationship to disciplinary approaches in child rearing. Again the researchers found there was a relationship between lack of knowledge of child health and development and frequency with which punitive responses were selected in simulated child discipline situations. The males in this study also exhibited a poorer performance in scoring than females.

In our society today, no preparation or training is required in order to become parents. Roehl, Herr, and Applehaus (1985) have emphasized that parenting is a highly significant task for which systematic instruction is received by only a few adults. Thus, they have contended that many parenting techniques are simply survival strategies. Larsen and Juhasz (1985) contended that two false assumptions have pervaded American

attitudes toward families and child rearing: (1) that the ability to raise children wisely is a natural talent possessed by most parents, and (2) that child rearing is always a joyful, positive experience. In actuality, parenting is a complex and difficult task that does not always develop naturally and is not always a happy experience.

The difficulty of parenting does not take away its importance. Steinhauer (1983) maintained that "all children need a family that is both caring and able to provide the quality and continuity of parenting that will foster optimal development" (p. 468). Parents, in order to meet the needs of children and provide this optimal development, need to be knowledgeable about child growth and development. Larsen and Juhasz (1985) have maintained that social and emotional maturity, as well as some knowledge of child development, are prerequisites for effective, responsible parenting.

The responsibilities and skills required to guide a child in our society from helpless infancy to mature adulthood are unrelenting and challenging to even the most mature adult (Larsen and Juhasz, 1985). Larsen and Juhasz (1985) additionally stated "the complexities of parenting are even greater for teenage parents who are generally less able financially, emotionally, and cognitively than adults to nurture and care for their children" (p. 823-824). Markham and Jacobsen (1976) found that most teenage

girls in the United States were not prepared to cope with the day-to-day needs of a baby. Unfortunately, the incidence of teenage childbearing is quite high. In 1978 over 1.1 million teenage pregnancies resulted in about 550,000 live births, which constituted approximately one sixth of all U.S. births for that year (Alan Guttmacher Institute, 1981). In 1984, the state of Oklahoma was reported to have a teenage fertility rate that was 28.9% higher than the national teenage fertility rate (<u>Oklahoma</u> Teenage Fertility Fact Sheet, 1986).

In cognition of the fact that in our society today teenagers are at a high risk for parenthood, and thus perhaps a high risk for child abuse, there exists a need to carefully examine the level of child development knowledge that adolescents possess. The present study was designed to examine the level of child development knowledge of high school seniors and its relationship to potential child abuse. The following hypotheses were formulated in relation to the study: (1) male high school seniors are less knowledgeable about child development than are female high school seniors; (2) high school seniors who originate from large families will be more knowledgeable about child development than their classmates who originate from smaller families; (3) high school seniors who have younger siblings will be more knowledgeable about child development than their classmates who are the youngest child or are only

children; and (4) high school seniors whose knowledge of child development is low tend to score higher on a measure of child abuse potential.

#### Method

#### Subjects

The subjects were high school seniors enrolled in Family Living Classes at Bartlesville High School in Bartlesville, Oklahoma. Included in the final analysis were responses of 233 high school students who ranged in age from 16 to 19 years (all but five were 17 or 18 years). Responses were collected from 150 females and 83 males.

### **Instruments**

Two questionnaires were utilized in gathering the data. The Knowledge Inventory of Child Development and Behavior: Infancy to School-Age (KIDS) (Anderson and Fulton, 1986) was utilized to gather students' knowledge of child development. The Child Abuse Potential Inventory (CAP) (Milner, 1980) was used to identify each student's potential toward abusive interactions with children.

Anderson and Fulton (1986) developed the KIDS Inventory in order to assess levels of child development knowledge. The KIDS Inventory is composed of 48 items, which describe characteristics of children at different ages. Subjects are asked to think about the age at which they would expect a child to be when he/she first exhibits the behavior described. A key is provided for use when thinking about their answers. After thoughtful consideration, the subjects are instructed to circle the age at which they think <u>most</u> children are when they <u>first</u> exhibit the behavior described. Responses for the described behaviors are:

I = Infancy (birth to 12 months)

T = Toddler (1 and 2 year olds)

P = Preschooler (3 through 5 years)

S = School-age (6 through 12 years)

A total of five scores are calculated by the researcher: the total score plus four subscale scores. The subscale scores measure knowledge of infant development, knowledge of toddler development, knowledge of preschool development, and knowledge of school-age development. Content validity was determined by submitting the instrument to a panel of five authorities in the field of child development. Reliability of .8309 was found, using Cronback's alpha coefficient of internal consistency, with the high school seniors in this study. (See Appendix B).

The CAP Inventory was developed by Milner (1980) in order to assess a person's child abuse potential. The CAP Inventory requires subjects to simply agree or disagree with 160 different statements concerning themselves, their feelings, and their relations with family and others. Scores are weighted and can range from 0 to 486. The higher the score, the greater the potential is for the subject to abuse. Six subscale scores are calculated:

(1) distress score, (2) rigidity score, (3) unhappiness score, (4) problems with child and self score, (5) problems with family score, and (6) problems with others The scores of these six subscales are added score. together to determine the abuse score of the subject. The CAP has shown a 94% correct classification of abusing versus nonabusing subjects. Milner and colleagues (cited in Milner, 1980) reported split-half and KR-20 reliability coefficients for the CAP ranging from .92 to .98 for abuse, high risk, and control groups. An 18-item Lie scale is included in the CAP in order to isolate those individuals who attempt to "look good," "look bad," or who are confused. The scores in the Lie subscale can range from 0 to 18. However, a nonsignificant relationship was found between CAP abuse and lie scores in previous studies conducted by Ellis and Milner (cited in Milner, 1980). (See Appendix B).

# Procedure

The data was collected in March of 1987. The subjects were given advance notice that the questionnaires would be administered. The researcher, assisted by the three Family Living Teachers, administered the questionnaires during six regularly scheduled class periods. Stapled together with one copy of each questionnaire was a personal data sheet for each of the 239 subjects. (See Appendix B). The responses of six subjects were excluded from analysis because the personal

data sheets, or one of the two questionnaires, were improperly completed. The instructions concerning the completion of the instruments appeared on the instruments themselves. In addition, the researcher orally outlined the instructions prior to the administration of the instruments to the subjects. No student was required to participate in the study. The subjects were given the entire 55-minute class period to complete the two questionnaires and the demographic information sheet.

Following the completion of the instruments and demographic information sheet, the subjects were asked to turn the questionnaires over at their seats. The teachers assisting the researcher then collected the completed questionnaires and placed them in a box at the front of the classroom. After all questionnaires had been completed in each Family Living Class, the researcher randomly assigned a number to each questionnaire for coding purposes. The numbers were used exclusively for statistical analysis.

### Results

For the 233 high school seniors surveyed in this study, the mean score for total child development knowledge was 27.14 out of a possible 48 points. In examining the subscales on the KIDS Inventory, the mean scores for the subjects were 5.6 (possible 13) on infancy development, 5.9 (possible 11) on toddler development, 7.3 (possible 12) on preschool development, and 8.4 (possible

12) on school-age development. Student scores on the total KIDS Inventory averaged 57% correct. Subscale scores averaged 43% correct on infancy development, 54% correct on toddler development, 60% correct on preschool development, and 69% correct on school-age development. Although the percentage correct on the two latter subscales indicated a higher level of knowledge concerning child development in the later childhood years, the overall knowledge for child development was low. Mean scores do indicate a limited amount of child development knowledge among high school seniors.

In examining the first hypothesis, the t-test was used to compare the mean level of knowledge between the sexes on the KIDS total score and each of the four subscales. The t-test revealed significant differences between the sexes in three of the five scores. High school senior girls scored significantly higher than their male counterparts on knowledge of infancy development E(142,77) = 1.18, p(.0001, toddler development E(142,77) =1.03, p(.0001, and total score E(77,142) = 1.56, p(.0001. No significant difference was found between the sexes on the knowledge of preschool or school-age development. Thus, the hypothesis that males would be less knowledgeable about child development was only partially substantiated.

A second hypothesis in this study examined the relationship of number of children in the family to level of child development knowledge on the KIDS Inventory. Subjects (n=222) were placed in four mutually exclusive categories based on one, two-three, four-five, or six-ormore children in the family. Eleven subjects were excluded from analysis in this category due to missing variable information. A one-way analysis of variance was used to determine the difference between the means of the four groups. Of the 222 high school seniors, 6.9% were the only child, 73% were from families with 2 or 3 children, 15.8% from families with 4 or 5 children, and 4.3% were from families with 6 or more children. Thus, 93.17 should have had some experience dealing with siblings. However, data analysis revealed that no significant difference was found relating number of siblings with knowledge of child development. The second hypothesis, therefore, was not supported by the data.

A third hypothesis examined the relationship between ordinal position and level of child development knowledge. Students (n=222) were placed in six mutually exclusive categories based on whether they were an only child, first born, second born, third born, fourth born, or fifth born or greater. The percentage of subjects that were either the youngest child in the family or an only child was 44.2. This indicates that 55.8% should have had some experience dealing with <u>younger</u> siblings at home.

However, when a one-way analysis of variance was done, the birth position was unrelated to knowledge of child development at any level on the KIDS. Therefore, the third hypothesis was not supported by the data.

The fourth hypothesis in the study examined the relationship between abuse score and level of child development knowledge. The high school seniors in this study had a mean abuse score of 141.9, which is lower than the mean abuse score that was reported for high school students (188.6) by Harris and Milner (cited in Milner, 1980). Pearson Product Correlations were used to individually compare each of the abuse scores with the total score on the KIDS and each of the KIDS subscale These correlations revealed whether the scores. calculated abuse potential of each subject related to his/her score on the measure of child development knowledge (KIDS Inventory). Highly significant correlations were found on three scales of the KIDS Inventory. The correlation between potential abuse and total child development knowledge proved to be highly significant, F(1,231) = 12.01, p(.0006. The correlation between potential abuse and infancy development yielded a high level of significance, E(1, 231) = 9.62, g(.0022. When the abuse score was correlated with the toddler development score, it proved to be significant, F(1, 231) =5.82, g (.0166. In these instances, the fourth hypothesis was substantiated. For each of these instances, when the

score on the measure of child development knowledge was low the the abuse score that was reported was high. However, when abuse scores were correlated with preschool and school-age development, no observed level of significance was found.

### Discussion

The results obtained in this study support previous research that suggests that high school students have inadequate knowledge of child development. This study confirms the earlier findings of Johnson, Loxterkamp and Albanese (1982) and Showers and Johnson (1985). The adolescents in this study scored 3%-9% higher than those tested in the two previously mentioned studies; however, they scored 57%--not even a "passing grade" according to high school grading standards (Teacher's Handbook, 1986). It is interesting to note that the high school students' mean scores were higher for preschool and school-age development than for infancy and toddler development. This higher mean score may be due to the fact that they were able to remember their own experiences at these ages. A similar finding, in which 78% of adolescents surveyed identified normal abilities of a six year old, has been noted by Showers and Johnson (1985).

Since the safety of these adolescents' future children is at stake, the finding that lack of child development knowledge existed among high school students is of concern to educators. Lack of knowledge about child development is related to unrealistic developmental expectations of children (DeLissovoy, 1973), which are associated with child abuse (Bamford, 1981). Analysis of the data revealed that as the abuse score increased in subjects, the mean score for child development knowledge decreased. Those high school seniors who were most knowledgeable about child development were least likely to have a high abuse score. These results were similar to those found by Johnson et al. (1982), Showers and Johnson (1984), and Showers and Johnson (1985). The results of this study should be examined with the idea that correlational analyses that were used for this part of the study allow for the explanation of degree of relationship, but do not allow for substantiation of cause-effect relationships.

Although the mean abuse score of these high school seniors is lower than that reported by Harris and Milner (cited in Milner, 1980), it is still higher than that reported by college students (Milner, 1980). This sample included only high school seniors and the other sample that was studied by Harris and Milner (cited in Milner, 1980) included high school students from various grade levels. The higher level of education could account for the lower mean abuse score. If this supposition were true, then it is understandable that these high school seniors did have a lower mean abuse score than the reported college students. Johnson et al. (1982) found

that the percentage of abuse responses selected by both high school boys and girls declined as grade level increased. This finding lends support to the idea that higher education could be related to a smaller potential for abuse.

The poorer performance of males on the measure of child development knowledge is worthy of concern and examination. When analysis of scores between the sexes was completed, the scores of the boys were lower on infant and toddler development, as well as total child development. No difference was found between male and female scores on the measures of preschool and school-age knowledge. Although it is encouraging to note that there was an improvement in knowledge with an increase in age of child, it is disheartening to learn that one of the prime caretakers of a child would have such inadequate knowledge about the child's first years of growth and development.

The lack of a relationship, between family size or ordinal position and child development knowledge, that was found in this study could lead to the assumption that amount of child development knowledge gained within families is the same. Perhaps this knowledge that is learned within the family is inadequate to meet the needs of a child in these changing times. Johnson et al. (1982) and Showers and Johnson (1984) both found that students indicated most of their knowledge of children and child raising came from their families. Yet the students in

those studies were found to have limited knowledge of child development as well.

Clearly, knowledge of how a child develops must be learned through another medium besides the family. Since knowledge of child development has been associated with healthier parent-child relationships, a parent education program that incorporated education for normative child development would be optimal. A prime mechanism for teaching parenthood education to adolescents would be the schools since a majority of adolescents attend the institution. However, the education for parenthood should be integrated into classes that require both male and female participation. Such a maneuver would insure that girls would be educated for motherhood and boys would be educated for fatherhood. Community health programs that offered parent education classes could reach those adolescents who might not receive the needed education in the schools. Of utmost importance, however, is that exposure to parenting, and child development knowledge, occurs prior to the time that these adolescents actually become parents.

This early preparation, however, does not guarantee a lifetime of preparation. Children do not live a lifetime as an infant, or a toddler, or a preschooler. They grow from one stage of childhood into another. In order for parents to meet the needs of children at these different stages, they need to be educated about them. This education would be most effective if it were taught at "the most teachable moment"--the point in time when parents need it the most. Education for infant development would be optimal for those parents with infants. Education for toddler development would be optimal for those parents with toddlers. In summary, parent education needs to be a continuous process that meets the needs of both parents and children at each stage of their development.

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<u>Literature Review</u>

# RELATIONSHIP OF HIGH SCHOOL STUDENTS' KNOWLEDGE

# OF CHILD DEVELOPMENT TO POTENTIAL

# FOR CHILD ABUSE

The present research will identify what high school seniors know about the development of a child, and whether this knowledge, or the lack of it, could indicate a potential for later child abuse. Two broad areas of literature have a bearing on this work: child abuse studies that deal with unrealistic parental expectations and lack of child development knowledge as causative factors, and literature that studies the lack of training that is required to parent, both for adults and teenagers or adolescents. The literature relative to child abuse will be presented first followed by a discussion of parenting and teenage or adolescent parenting.

# Unrealistic Parental Expectations as Associated

# With Child Abuse

Child abuse is acknowledged by our society today to be a serious problem. Children, after all, are the future of our society. When this "future," or these children, are put in jeopardy, society considers it a problem. Kempe and Helfer (1980) have reported that an estimated 1.7 million children are physically abused by their parents in a year. Each year increased numbers of cases of child abuse are reported. Kempe and Helfer (1980) have confirmed this statement:

One and one-half percent of the children in the

United States are reported annually to protective service units as victims of suspected abuse and neglect. The important word in the previous sentence is <u>annually</u>. Every year another one and one-half percent is added to the toll (p. xiii). Martin (1980) has stated that "at least one of every 100 children in the United States is significantly mistreated through physical abuse or neglect" (p. 347). The statistics concerning child abuse <u>are</u> alarming.

The results of child abuse are just as alarming. In 1981, 2,000 children were reported to have died as a direct result of parental abuse and neglect in the United States (Newberger, 1982). Victims of child abuse possess serious developmental deficits in comparison with nonabused peers. Hoffman-Plotkin and Twentyman (1984) reported that abused and neglected children had significant cognitive deficits and exhibited less readiness to learn. Social and emotional deficits have been noted in maltreated children. Hoffman-Plotkin and Twentyman (1984) reported that abused children experienced a fewer number of interactions with both peers and adults. Schneider-Rosen and Cicchetti (1984) found that abused infants formed a significantly greater proportion of insecure attachments than nonmaltreated infants. Hoffman-Plotkin and Twentyman (1984) also reported that children who experienced abuse at home were more physically and verbally aggressive and exhibited less

social maturity. These serious deficits in abused children may last a lifetime.

Research has been conducted that focuses on the multiple determinants of child abuse. One important determinant involves unrealistic parental expectations of appropriate child behavior. Alford, Martin, and Martin (1985) reported of abusing parents that "in many cases. . .parents tended to set unreasonable standards for their child's behavior, expecting the child to perform tasks inconsistent with normal development" (p. 145). Pollock and Steele (1972) discovered from direct observations of parents with children, as well as parental descriptions of how they dealt with their children, that abusive parents viewed infants and children as if they were much older than their chronological age, and as if they possessed much greater intellectual development and physical ability than they actually did.

Research in the area of unrealistic parental expectations in child abusers suggests that these unrealistic expectations stem from a lack of child development knowledge. Helfer and Kempe (1976) reported that quite frequently abusive parents were simply ignorant of what constituted appropriate behavior in relation to normal development. Twentyman and Plotkin (1982) found in their study that parents who had abused or neglected their children were less knowledgeable about children's developmental processes than were matched controls.

#### Parenting

In the literature relating to child abuse, it was noted that abusive parents who developed unrealistic expectations for their children were lacking in knowledge of how a child develops. This section of the literature review on parenting explores how this lack of child development knowledge might have evolved, and the implications it might have for parents today.

In society today, there seems to be a pervasive assumption that parenting skills develop naturally as people become parents. Larsen and Juhasz (1985) affirmed that specifically two false assumptions have pervaded American attitudes toward families and child rearing: (1) that the ability to raise children wisely is a natural talent possessed by most parents, and (2) that child rearing is always a joyful, positive experience. In the past, there may have been some truth to these suppositions.

Traditionally, the means for developing parenting skills in American society was diffusion (Roehl, Herr, & Applehaus, 1985). From older generations within the family unit, younger generations of parents gathered knowledge of children and childrearing techniques, which they invariably passed on to still younger generations. Since people grouped together and lived in extended families, sometimes for several generations, this mode of diffusive education was possible (Roehl, Herr, &

Applehaus, 1985). The solidity and stability of yesteryear's extended family allowed "transference" to be the major means of parent education. However, time has brought changes to both society and parent education. The valuable source of the family is no longer available to a great number of parents. A decrease in family size, an increase in working mothers and single-parent families, and less family members living together in a centralized location has caused intergenerational knowledge of child development, childrearing, and parenting that was once learned in the home to abate considerably (Roehl, Herr, & Applehaus, 1985). Swick (1985) has stated that today's parent functions in a socially complex situation with few supports and more demands within the family and the community. In addition, Strom (1985) has noted that more and faster cultural change means that more and more children's experiences were not encountered by preceding generations; therefore, parents cannot continue to rely on memories of growing up as a sufficient base for providing quidance to their children. Thus, it seems that the examples of parenting that youth <u>do</u> witness may not teach them valuable child development knowledge, childrearing techniques, or parenting skills at all.

Rheingold (1973), in regard to rearing a child, stated that " . . .children are our greatest natural resource. Yet, the world behaves as though they were no resource at all" (p. 45). The world, or society, fails to

recognize the importance of how a child is raised, or reared. Rheingold (1973) continued:

The most difficult, the most important task in the world--the rearing of a child--at the present time is judged by our society to require no training at all. We behave as though the ability to conceive and bear a child, as though the acts of conception and birth, automatically confer on a mother, or a father, knowledge on how to rear that child (p. 45).

Roehl, Herr, and Applehaus (1985) emphasized that parenting is a highly significant task, yet systematic instruction for the task is received by only a few adults. They elaborated ". . . Most parents undertake the duty with limited knowledge of child development; consequently, many of their parenting techniques are simply survival strategies" (p. 20). Parents need to have more than just survival strategies to raise the world's "greatest natural resource." White (1975) found that the direct or indirect actions of a mother with her child of one to three years had the most significant effect on the development of that child during the preschool years. Steinhauer (1983) has maintained that "all children need a family that is both caring and able to provide the quality and continuity of parenting that will foster optimal development" (p. 468). In order to meet the needs of children and provide this optimal development, parents need to be knowledgeable about child growth and

development. However, Larsen and Juhasz (1985) have stated that knowledge alone is not sufficient to ensure effective parenting:

A person also must be socially and emotionally mature enough to center on another person and be emphatically aware of and sensitive to the needs of that person. These are prerequisites for effective, responsible parenting (p. 824).

Parenting, effective or otherwise, is not an easy task. Hoff (1978) has stated that parenthood places continuous demands on a person from the time of an infant's conception until at least the child's eighteenth birthday. Parenting requires the constant giving of self and should not be entered into lightly (Ford, Massey, and Hyde, 1986). Roehl, Herr, and Applehaus (1985) have contended that parenting is a demanding job that requires considerable knowledge and preparation.

# Teenagers' Knowledge of Child Development/Parenting

The task of parenting is not an easy one. The responsibilities and skills required to guide a child in our society from helpless infancy to mature adulthood are unrelenting and challenging to even the most mature adult (Larsen and Juhasz, 1985). Children require a great deal of nurturance and care. In order for parents to cope with raising a child, they must have a solid foundation from which to work cognitively, emotionally, and financially. Otherwise, stress and frustration can result.

For teenage parents, the task is even more difficult due to the fact that their foundational abilities have not yet reached maturity. Most teenage girls in the United States are not prepared to cope with the day-to-day needs of a baby (Markham and Jacobsen, 1976). In addition, teenage parents of today's society are lacking in child development knowledge (DeLissovoy, 1973; Field, Widmayer, Stringer & Ignatoff, 1980; Roosa & Vaughan, 1984; Gullo, 1985).

In a classic study on child care by adolescent parents, DeLissovoy (1973) noted that caring for their children proved to be a trying experience for the teen parents in the majority of the 48 couples. In addition, the author stated:

I found the young parents in this study to be, with a few notable exceptions, an intolerant group--impatient, insensitive, irritable and prone to use physical punishment with their children (p. 22).

DeLissovoy's (1973) contention was that the restrictive and sometimes punitive behavior of the young parents in the study was due in part to the unrealistic developmental and behavioral expectations of children, which were generated by a lack of child development and childrearing knowledge.
Research done by Field, Widmayer, Stringer, and Ignatoff (1980) yielded similar results. The researchers investigated developmental expectations and child-rearing attitudes of both teenage mothers with infants and adult mothers with infants. Results of the study indicated that the teenage mothers showed less realistic developmental expectations and less desirable or more punitive childrearing attitudes than did the adult mothers.

Showers and Johnson(1984) conducted a study of college students' knowledge of child development and found similar results. In the study, the Iowa Child Development Test (ICDT) was administered to 299 college students in order to determine their knowledge of child health and child development in relation to the effects on their disciplinary approaches. The results of the study suggested that not only do college students have inadequate knowledge concerning child development, but that the students who were least knowledgeable about child development were those that chose harsh disciplinary methods most frequently.

Johnson, Loxterkamp, and Albanese (1982) administered the Iowa Child Development Test (ICDT) to a sample of high school students in rural Iowa during an earlier study. Results of that study also indicated a relationship between the lack of child development knowledge and abusive approaches to discipline problems. In this study, just as in the college study conducted by Showers and

Johnson (1984), males selected harsh disciplinary responses more frequently than females.

In a later study by Showers and Johnson (1985), the ICDT was administered to a representative sample of urban adolescents from one major city in Ohio. The study was undertaken to determine urban adolescents' knowledge of child development and child health and its relationship to disciplinary approaches in child rearing. Results of this study confirmed what was found in the two previous studies utilizing the ICDT. The researchers found there was a relationship between lack of knowledge of child health and development and frequency with which punitive and abusive responses were selected in simulated child discipline situations. Once again male adolescents exhibited a poorer performance in scoring than females. Showers and Johnson (1985) found this general lack of child development knowledge among adolescents to be alarming since the selected test was designed to measure acquisition of minimal basic knowledge.

Anderson and Fulton (1986) administered the ICDT to 194 undergraduate students enrolled in courses in the Department of Family Relations and Child Development at Oklahoma State University. Findings of this study indicated that a lack of adequate child development and health maintenance existed among these young, adult undergraduate students. Additionally, the females in the study tended to score higher than the males.

In a study done by Roosa and Vaughan (1984), teenage mothers' knowledge of child development was compared to that of older mothers. The results of this study indicated that teenage parents were less knowledgeable in the area of child development than older mothers. The researchers stated:

It would appear that the teenage mothers would be slightly less likely than older mothers to know appropriate developmental schedules, to know the types and amounts of stimulation a child of a particular age needs, or to know how to respond appropriately to the child's behavior at various ages (p. 263).

Gullo (1985) conducted a study that compared knowledge of infant development of adolescent mothers, older mothers, and never pregnant teenagers. The subjects (40 never pregnant teenagers, 20 adolescent mothers, and 20 older mothers) were administered a 56-item questionnaire concerning infant's development of motor skills, language skills, cognitive skills, and social skills. The results of the study indicated that the older mothers more accurately predicted the emergence of infant behaviors than either of the other groups.

Shaner, Peterson, and Roscoe (1985) designed a study to further investigate different age groups' knowledge of developmental norms of children, focusing on older adolescent female university students. Results of the

study indicated that knowledge of normal development was both over-and under-estimated regardless of age of student or year in school. In conslusion, the researchers stated:

. . .knowledge of child development, and hence the potential well-being of young children, is being left to trial-and-error learning that may occur too late (p. 58).

Several research studies have found that adolescents and adolescent parents lack knowledge of when certain developmental milestones occur (DeLissovoy, 1973; Field, Widmayr, Stringer, and Ingatoff, 1981; Gullo, 1985; Roosa and Vaughan, 1984; and Showers and Johnson, 1985). This lack of child development knowledge among adolescents and adolescent parents causes not only stress and frustration, but the development of unrealistic expectations for children. An inability to develop realistic expectations for children is believed to be a contributory factor in child abuse (Bamford, 1981).

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Appendix B

<u>Instruments</u>

### Instrument Reliability

### KIDS Inventory

The Knowledge Inventory of Child Development and Behavior: Infancy to School-Age (Anderson & Fulton, 1986) uses five scales (four subscales plus one total scale) to assess levels of child development knowledge. For each childhood behavior listed on the inventory, the subject is asked to find the age at which that behavior would be displayed. (See pp. 42-43 for questionnaire). Five authorities in the field of child development found the validity of the KIDS to be very good. In previous work with the KIDS Inventory, reliability for a young, adult population was obtained using Cronbach's alpha coefficient of internal consistency. In April, 1987, reliability analysis, with n=83, resulted in the following reliability: .7021 for the total test, .7559 for the infancy subscale, .5070 for the toddler subscale, .3282 for the preschool subscale, and .5649 for the school-age subscale. The present study was used to determine KIDS reliability for a younger population. Cronbach's alpha coefficient was again used to determine reliability. Results indicated higher reliability with the younger population: .8309 for the total test, .6721 for the toddler subscale, .6564 for the preschool subscale, and .6388 for the school-age subscale. The reliability for the infancy subscale was found to be .6949, which is lower than the infancy subscale reliability for the older group.

•	KIDS
(1	Knowledge Inventory of Development and
	Benavior: Infancy to School-age)
INSTRUCTIONS: KIDS	S describes the characteristics of children at different ages.
behavior described. Use	t would expect a child to be when he or she first shows the this key when thinking about your answers:
	· ····· ··· · ···· ···················
•	I = Infancy (birth to 12 months)
	I = I  oddler (I  and  2  year olds) P = Preschooler (I a through 5 years)
	S = School-age (6 through 12 years)
	_ · · <b>·</b> · · ·
Circle the age to the rig	ht which you think MOST children are at when they FIRST

### At which age would you first expect most children to

1.	cut most of their permanent teethI	т	Ρ	S
2.	boast or brag about what they can doI	Т	Ρ	S
3.	feed themselves with a spoonI	Т	Ρ	S
4.	attempt to imitate sounds made by peopleI	Т	Ρ	S
5.	identify and name basic shapes (circle, square, etc.)	Т	Ρ	S
6.	like being played with, talked to and heidI	т	Ρ	S
7.	play games that require following rules and taking turns			
	(checkers, monopoly, team sports, etc.)	т	Ρ	S
8.	pull themselves to a standing positionI	Т	Ρ	S
9.	use scissors to cut paper	Т	Ρ	S
10.	use the toilet with little adult assistance	Т	Ρ	S
11.	be able to pick up small objects (raisins, beads, dimes, etc) I	Т	Ρ	S
12	enjoy pushing large objects, such as boxes, across the floor I	т	Ρ	S
13.	want to play almost exclusively with children their own sex	т	Р	s
14.	hold and drink from their own cup or glass	т	P	ŝ
15.	want to do things by themselves even though they	-	-	-
	aren't vet canable of doing the task on their own	т	Р	S
16.	develop an interest in collections and clubs	Ť	P	Š
17.	learn to ride a bicycle (two wheeler without training wheels)I	Ť	P	ŝ
18.	point to their nose when asked to do so	Ť	P	Š
	F	-	-	_

I = Infancy (birth to 12 months) T = Toddler (1 and 2 year olds) P = Preschooler (3 through 5 years) S = School-age (6 through 12 years)

### At which age would you first expect most children to

19.	know that they are a boy or a girl	Т	Р	S
20.	imitate grownup roles in their play (firefighter, teacher, etc.)	Т	Ρ	S
21	practice simple skills with objects (dropping and throwing			-
	opening and closing putting together and taking apart etc.)	т	Р	S
~~	enjou plauing saos other shildren even though they have	•	1	J
<i>22</i> .	d'éférentes mist servertier and charier	т	n	c
	difficulty with cooperating and sharing	1	P	3
23.	enjoy telling jokes and riddles	Г	Р	S
24.	usually understand what is being said to them even though they			
	don't always do as requestedI	Т	Ρ	S
	,			
25.	develop the skills needed to play ordinary games (ball.			
	honscotch, tag, jump rone, etc.)	т	Р	S
26	touch handle and taste everything within reach	Ť	P	š
20.	be concerned about what others think of them	÷	L D	5
47. 10		÷	г П	5
28.		1 -	P	2
29.	have strong teelings about being treated tair	1	P	2
30.	run to adults with complaints about other childrenI	Т	Р	S
31.	show fear or cry when a stranger approachesI	Т	Р	S
32.	put two or three words together in a sentence	Т	Ρ	S
33.	be concerned with gaining approval from their friendsI	Т	Ρ	S
34	cut their first tooth	т	Р	S
35	scribble when given a cravon or pencil	Ť	P	ŝ
36	scribble when give a crayon of pener	Ť	1 D	ç
50.	cry of be startied by strange objects of four sounds and voices	. 1	r	2
77	do anote work with each that require some skill and manipulation			
57.	do craft work with tools that require some skill and manipulation	Ŧ	-	~
• •	(making potholders, needlework, model airplanes, etc.)	1	P	2
38.	pick out the larger of two circles when asked, "which is bigger?" I	Т	Р	S
39.	identify and name pictures of familiar objects			
	(ball, truck, doll, etc.)I	Т	Р	S
40.	object when mother leaves and squeal with joy when she returns	Т	Ρ	S
41.	be eager to help around the house	Т	Ρ	S
42.	sit aloneI	Т	Р	S
43	sleen through most nights without wetting	т	Р	S
14	recognize and respond to familiar people (mother	•	•	0
<b>-</b> .	father sister brother etc.)	т	D	ç
15	hanner, sister, utullier, etc./	- -	ר	ے د
43.	be able to cooperate and share with other children as they play	1 -	r	3
40.	Irequently say 'NO!' to questions or requests	1	Р	2
47.	imitate simple movements such as clapping hands	Ţ	Ρ	S
48	understand that 10 pennies is the same as one dime	Т	P	2

# **CAP INVENTORY FORM VI**

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**INSTRUCTIONS:** The following questionnaire includes a series of statements which may be applied to yourself. Read each of the statements and determine if you **AGREE** or **DISAGREE** with the statement. If you agree with a statement, circle **A** for agree. If you disagree with a statement, circle **DA** for disagree. Be honest when giving your answers. Remember to read each statement; it is important not to skip any statement.

0000

1. 2. 3. 4. 5.	I never feel sorry for others I enjoy having pets I have always been strong and healthy I like most people I am a confused person	A A A A	DA DA DA DA DA
6. 7. 8. 9. 10.	I do not trust most people People expect too much from me Children should never be bad I am often mixed up Spanking that only bruises a child is okay	A A A A	DA DA DA DA DA
11. 12. 13. 14. 15.	I always try to check on my child when it's crying I sometimes act without thinking You cannot depend on others I am a happy person I like to do things with my family	A A A A	DA DA DA DA DA
16. 17. 18. 19. 20.	Teenage girls need to be protected I am often angry inside Sometimes I feel all alone in the world Everything in a home should always be in its place I sometimes worry that I cannot meet the needs of a child	A A A A	DA DA DA DA DA
21. 22. 23. 24. 25.	Knives are dangerous for children I often feel rejected I am often lonely inside Little boys should never learn sissy games I often feel very frustrated	A A A A A	DA DA DA DA DA

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# **0●00**

26		•	<b>D</b> 4
20.	Children should never disobey	A	DA
27.	l love all children	А	DA
28.	Sometimes I fear that I will lose control of myself	А	DA
29.	I sometimes wish that my father would have loved me more	А	DA
30	L have a child who is clumey	^	
50.	nave a ching who is clumsy	~	UA
31.	I know what is the right and wrong way to act	А	DA
32.	My telephone number is unlisted	А	DA
33	The birth of a child will usually cause problems in a marriage	Δ	
24		~	
34.		A	DA
35.	I never worry about my health	А	DA
36.	sometimes worry that I will not have enough to eat	Δ	
37	base never wanted to burt someone else	^	
57.	Thave never wanted to hult someone else	A	DA
38.	I am an uniucky person	А	DA
39.	l am usually a quiet person	А	DA
40.	Children are pests	А	DA
44	Thisse have very live encourage institution life	•	<b>D</b> 4
41.	Things have usually gone against me in me	A	DA
42.	Picking up a baby whenever he cries spoils him	А	DA
43.	l sometimes am very quiet	А	DA
44.	l sometimes lose my temper	Δ	
45	L bave a child who is had	~	
40.		A	DA
46.	I sometimes think of myself first	Α	DA
47.	l sometimes feel worthless	А	DA
48	My parents did not really care about me	^	
40.	lan entre die horreany care about me	<u>,</u>	
49.	Tam sometimes very sad	А	DA
50.	Children are really little adults	А	DA
51.	I have a child who breaks things	А	DA
52	Loften feel worried	Δ	
52	It is already to lot a abild atom in distriction of a solution while		5.
55.	it is okay to let a child stay in dirty diapers for a while	A	DA
54.	A child should never talk back	А	DA
55.	Sometimes my behavior is childish	А	DA
56	Lam often easily unset	^	
50. 67		<u>,</u>	
57.	Sometimes I have bad thoughts	А	DA
58.	Everyone must think of himself first	А	DA
5 <b>9</b> .	A crying child will never be happy	А	DA
60.	L have never hated another person	Δ	
•••			0/(
<u> </u>			<b>-</b> ·
61.	Children should not learn now to swim	А	DA
62.	l always do what is right	А	DA
63.	l am often worried inside	А	
64	L have a child who is sick a lot	^	
65	Construct a contraction of the the work of the the work of the	· 7	5.
65.		А	DA
66.	I sometimes fail to keep all of my promises	А	DA
67.	People have caused me a lot of pain	А	DA
68	Children should stay clean	^	
60. 60	there a child who gets into travisional lat	$\tilde{}$	
69.	i nave a child who gets into trouble a lot	A	DA
70.	I never get mad at others	А	DA

### 46 00●0

71.	I always get along with others	А	DA
72.	I often think about what I have to do	А	DA
73.	I find it hard to relax	Α	DA
74.	I nese days a person doesn't really know on whom one can count	A	DA
75.	My life is happy	A	DA
76.	I have a physical handicap	А	DA
77.	Children should have play clothes and good clothes	А	DA
78.	Other people do not understand how I feel	A	DA
79.	A five year old who wets his bed is bad	A	DA
80.	Children should be quiet and listen	A	DA
81.	I have several close friends in my neighborhood	А	DA
82.	The school is primarily responsible for educating the child	А	DA
83.	My family fights a lot	А	DA
84.	I have headaches	А	DA
85.	As a child I was abused	А	DA
06	Coopling is the best surjectment		<b>.</b>
00. 97	de not like to be touched by others	A	
07. 88	People who ask for holp are weak	A	
80. 80	Children should be washed before bed	A ^	
90 90	I do not laugh very much	A 	
00.		~	UA
91.	I have several close friends	А	DA
92.	People should take care of their own needs	А	DA
93.	I have fears no one knows about	А	DA
94.	My family has problems getting along	А	DA
95.	Life often seems useless to me	А	DA
96.	A child should be potty trained by the time he's one year old	А	DA
97.	A child in a mud puddle is a happy sight	А	DA
98.	People do not understand me	А	DA
99.	I often feel worthless	А	DA
100.	Other people have made my life unhappy	А	DA
101	l am always a kind person	Δ	Δ٦
102	Sometimes I do not know why I act as I do	Δ	
103.	I have many personal problems	A	DA
104	I have a child who often hurts himself	A	DA
105.	l often feel very upset	Α	DA
106	People comptimes take adventage of me	۸	
100.		~	
107.	A home should be spotless	~	
100.		Δ	
110.	I never listen to gossip	Â	
111.	My parents did not understand me	Α	DA
112.	Many things in life make me angry	A	DA
113.	My child has special problems	A	DA
114.	a o not like most children	A	DA
115.	Children should be seen and not neard	A	DA

.

.

		0	47 20●
116. 117. 118. 119. 120.	Most children are alike It is important for children to read I am often depressed Children should occasionally be thoughtful of their parents I am often upset	A A A A	DA DA DA DA DA
121. 122. 123. 124. 125.	People don't get along with me A good child keeps his toys and clothes neat and orderly Children should always make their parents happy It is natural for a child to sometimes talk back I am never unfair to others	A A A A A	DA DA DA DA DA
126. 127. 128. 129. 130.	Occasionally, I enjoy not having to take care of my child Children should always be neat I have a child who is slow A parent must use punishment if he wants to control a child's behavior Children should never cause trouble	A A A A A	DA DA DA DA
131. 132. 133. 134. 135.	I usually punish my child when it is crying A child needs very strict rules Children should never go against their parents' orders I often feel better than others Children sometimes get on my nerves	A A A A A	DA DA DA DA DA
136. 137. 138. 139. 140.	As a child I was often afraid Children should always be quiet and polite I am often upset and do not know why My daily work upsets me I sometimes fear that my children will not love me	A A A A	DA DA DA DA DA
141. 142. 143. 144. 145.	I have a good sex life I have read articles and books on child rearing I often feel very alone People should not show anger I often feel alone	A A A A	DA DA DA DA DA
146. 147. 148. 149. 150.	I sometimes say bad words Right now, I am deeply in love My family has many problems I never do anything that is bad for my health I am always happy with what I have	A A A A	DA DA DA DA DA
151. 152. 153. 154. 155.	Other people have made my life hard I laugh some almost every day I sometimes worry that my needs will not be met I often feel afraid I sometimes act silly	A A A A	DA DA DA DA DA
156. 157. 158. 159. 160.	A person should keep his business to himself I never raise my voice in anger As a child I was knocked around by my parents I sometimes think of myself before others I always tell the truth	A A A A A	DA DA DA DA DA

.

Please complete the following information in the space provided

- 49. Your age \_\_\_\_\_
- 50. Sex Male\_\_\_\_ Female\_\_\_\_

51. How many children are in the family in which you grew up, including yourself?

52. Which child in the family are you? \_\_\_\_\_

53. If you have younger brothers and sisters, how many years older are you than your youngest sibling?\_\_\_\_\_

54. What is your classification?

Α.	Freshman
В.	Sophomore
с.	Junior
D.	Senior

55. Have you ever taken any classes related to child growth and development? Yes \_\_\_\_\_ No \_\_\_\_\_

56. Describe your family situation.

Α.	I live with both my parents.
в.	I live with only one parent all the time.
C.	I live with one parent part of the time and
	the other parent part of the time.
D.	I live in a stepfamily.
Е.	I live with my grandparent/grandparents.
F.	I live with another relative, specify
G.	Other, specify

57. What is the highest grade or level of education your mother completed?

A. Graduate or professional school B. Graduate of four-year college C. Some college D. Vocational or educational training E. Finished high school F. Some high school G. Grade school H. Don't know

58. What is the highest grade or level of education your father completed?

A. Graduate or professional school B. Graduate of four-year college C. Some college D. Vocational or educational training E. Finished high school F. Some high school G. Grade school H. Don't know

THANK YOU!!

Appendix C

.

Variable Code Labels

#### Variable Code Labels

- V1 Subject ID number
- V2 Age
- V3 Sex (A = male, B = female)
- V4 # of children in family of origin (A = 1, B = 2-3, C = 4-5, D = 6-or-more)
- V5 Ordinal Position (A = only child, B = 1st born, C = 2nd born, D = 3rd born, E = 4th born, F = 5th or greater born)
- V6 Years older than youngest sibling

V8 Previous child development class (A = yes, B = no)

- V9 Family living situation (A = both parents, B = one parent always, C = one parent some, other parent some, D = stepfamily, E = grandparents, F = other relative, G = other)
- V10 Mother's education (A = graduate or professional school, B = graduate of 4-yr. college, C = some college, D = vocational/educational training, E = finished H.S., F = some H.S., G = grade school, H = don't know)
- V11 Father's education (same as above)
- V12 KIDS total score
- V13 KIDS infancy subscale score
- V14 KIDS toddler subscale score
- V15 KIDS preschool subscale score

V16 KIDS school-age subscale score
V17 Inventory blanks on CAP (N = normal, E = elevated)
V18 Lie scale score on CAP
V19 Random response scale score on CAP
V20 Inconsistency scale score on CAP
V21 Faking good (N = normal, E = elevated)
V22 Faking bad (N = normal, E = elevated)
V23 Random response (N = normal, E = elevated)
V24 Abuse scale score on CAP
V25 Distress scale score on CAP
V26 Rigidity scale score on CAP
V27 Unhappiness scale score on CAP
V28 Problems with child and self scale score on CAP
V29 Problems with family scale score on CAP
V30 Problems from others scale score on CAP

Appendix D

<u>Raw Data</u>

	0 B S	I D	A G E	SEX	N K I D	ĸ	O R P O S	Y U T Y S	C L S S	P C D G	M O T E D U	FAT EDU	к Т 5	К 1 N 5 U B S C	D T U S U B S C	K P R S U B S C	K S A S U B S C	1 N V R L	L I E S C S C	R R S C S C S C	I N C S C S C S C	F K F 0 D	F A K B A D	R A N R E S	A B U S E S C	D I S I R S C	R I G I T S C	U N H A P S C	P R W C S	P R W F	P R W O		
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Appendix E

### Statistical Analyses

#### T-test Procedure for Comparison of Male and Female Scores on the KIDS Inventory

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TTEST PROCEDURE

VARIABLE	KTS	KIDS TOTA	L SCORE							
SEX	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB >
FEMALE	144 78	28.56250000 24.61538462	4.60725902 5.75524779	0.38393825 0.65165349	13.00000000 8.00000000	40.0000000 38.00000000	UNEQUAL EQUAL	5.2187 5.5718	131.2 220.0	0. 0.
FOR HO	VARIANCES	S ARE EQUAL, F'.	1.56 WITH	77 AND 143 DF	PROB > F'= C	0.0225				
VARIABLE	KINSUB	SC KIDS INFA	NCY SUBSCALE S	CORE						
SEX	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	т	DF	PROB >
FEMALE MALE	144 78	6.15277778 4 43589744	2.57290738 2.37732658	0.21440895 0.26917923	0 0	12.00000000 10.00000000	UNEQUAL EQUAL	4.9890 4.8728	169.1 220.0	0. 0.
FOR HO	VARIANCE	S ARE EQUAL, F'	1,17 WITH	143 AND 77 DF	PROB > F'= (	). 4456				
VARIABLE	DTOSUB		DLER SUBSCALE S	CORE						
SEX .	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB
FEMALE MALE	144 78	6.56944444 4.87179487	2.23028355 2.20011201	0.18585696 0.24911363	1.00000000 0.00000000	11.00000000 10.00000000	UNEQUAL EQUAL	5.4621 5.4399	159.9 220.0	0 0
FOR HO	VARIANCE	S ARE EQUAL, F'	1.03 WITH	143 AND 77 DF	PROB > F'= (	0.9078	· · · · · · · · · · · · · · · · · · ·			
VARIABLE	KPRSUB	SC KIDS PRES	CHOOLER SUBSCA	LE SCORE						
SEX	N	MEAN	STO DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	т	DF	PROB
FEMALE MALE	144 78	7.38888889 7.20512821	1.95441444 2.24105132	0.16286787 0.25374909	2.00000000 2.00000000	12.0000000 12.00000000	UNEQUAL EQUAL	0.6094 0.6347	140.7 220.0	0 0
FOR HO.	VARIANCE	S ARE EQUAL, F'	1.31 WITH	77 AND 143 DF	PROB > F' = (	0. 1606				
VARIABLE	KSASUB	SC KIDS SCHO	DOL-AGE SUBSCAL	E SCORE						
SEX	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	т	DF	PROB
FEMALE MALE	144 78	8.48611111 8.10256410	2.07545129 2.65598928	0.17295427 0.30073157	2.00000000 1.00000000	12.0000000 12.00000000	UNEQUAL EQUAL	1.1056 1.1885	128.8 220.0	0 0
FOR HO	VARIANCE	S ARE EQUAL, F	1.64 WITH	77 AND 143 DF	PROB > F'= (	0.0114				

### Class Level Information for Analysis of Variance Using Number of Children in Family

ANALYSIS OF VARIANCE PROCEDURE

CLASS LEVEL INFORMATION

CLASS	LEVELS	VALUES
	,	
NKINFO	4	1 CHILD 2-3 CHILDREN 4-5 CHILDREN 6 OR MORE

NUMBER OF OBSERVATIONS IN DATA SET = 222

# Analysis of Variance Procedure Using KIDS Total Score and Number of Children in Family

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ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABL	LE: KTS	KIDS TOTAL SCORE						
SOURCE	DF	SUM OF SQUARES	MEAN SQU	ARE	F VALUE	PR > F	R-SOLLARE	C V
MODEL	. 3	59.77554828	19.92518	276	0.69	0 5603	0.000078	C.V.
ERROR	218	6314.37310036	28.965014	422		01.0005	0.009378	19.8042
CORRECTED TOTAL	221	6374.14864865				ROOT MSE		KTS MEAN
						5.38191548		27.17567568
SOURCE	DF	ANOVA SS	F VALUE	PR > F				
NKINFO	Э	59.77554828	0.69	0.5603				

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### Analysis of Variance Procedure Using KIDS Infancy Subscale Score and Number of Children in Family

### ANALYSIS OF VARIANCE PROCEDURE

.

DEPENDENT VARIABLE	E: KINSUBSC	KIDS INFANCY SUBSCAL	SCORE				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	<b>C</b> . <b>V</b> .
MODEL	Э	6.44914829	2.14971610	0.31	0.8200	0.004213	47.6517
ERROR	218	1524.50580667	6.99314590		ROOT MSE	к	INSUBSC MEAN
CORRECTED TOTAL	221	1530.95495495			2.64445569		5.54954955
SOURCE	DF	ANDVA SS	F VALUE PR > F				
NKINFO	Э	6.44914829	0.31 0.8200				

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### Analysis of Variance Procedure Using KIDS Preschool Subscale Score and Number of Children in Family

#### ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIA	BLE: KPRSUBSC	KIDS PRESCHOOLER SUBS	CALE SCORE					
SOURCE	DF	SUM OF SQUARES	MEAN S	QUARE	F VALUE	PR > F	R-SQUARE	<b>C</b> . <b>V</b> .
MODEL	з	13.99119195	4.663	73065	1.10	0.3483	0.014969	28.0578
ERROR	218	920.65745669	4.223	19934		ROOT MSE	KF	RSUBSC MEAN
CORRECTED TOTAL	221	934.64864865				2.05504242		7.32432432
SOURCE	DF	ANOVA SS	F VALUE	PR > F				
NKINFO	3	13.99119195	1.10	0.3483			4	

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## Analysis of Variance Procedure Using KIDS School-Age Subscale Score and Number of Children in Family

### ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT	ARIABLE: KSASUBSC	KIDS SCHOOL-AGE SUBSC	ALE SCORE				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	<b>C</b> . <b>V</b> .
MODEL	3	3 16108433	1.05369478	0.20	O.8981	0.002710	27.6621
ERROR	218	1163.43351027	5.33685096		ROOT MSE	ĸ	SASUBSC MEAN
CORRECTED	TOTAL 221	1166.59459459			2.31016254		8.35135135
SOURCE	DF	ANOVA SS	F VALUE PR > F				
NKINFO	3	3.16108433	0.20 0.8981			•	

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### Class Level Information for Analysis of Variance Using Ordinal Position

ANALYSIS OF VARIANCE PROCEDURE

CLASS LEVEL INFORMATION

CLASS LEVELS VALUES

ORBORN

6 FIFTH OR GREATER FIRST BORN FOURTH BORN ONLY CHILD SECOND BORN THIRD BORN

NUMBER OF OBSERVATIONS IN DATA SET = 222

### Analysis of Variance Procedure Using KIDS Total Score and Ordinal Position

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ANALYSIS	OF	VARIANCE	PROCEDURE
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DEPENDENT VARIABL	E: KTS	KIDS TOTAL SCORE					
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	<b>C</b> . <b>V</b>
MODEL	5	126.90667004	25.38133401	0.88	O.4969	0.019910	19.7896
ERROR	216	6247 24197861	28.92241657		ROOT MSE		KTS MEAN
CORRECTED TOTAL	221	6374.14864865			5.37795654		27 17567568
SOURCE	DF	ANOVA SS	F VALUE PR	> F			
ORBORN	5	126.90667004	0.88 0.4	969			

### Analysis of Variance Procedure Using KIDS Infancy Subscale Score and Ordinal Position

#### ANALYSIS OF VARIANCE PROCEDURE

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DEPENDENT VARIAE	BLE: KINSUBSC	KIDS INFANCY SUBSCALE	SCORE					
SOURCE	DF	SUM OF SQUARES	MEAN S	QUARE	F VALUE	PR > F	R-SQUARE	<b>C.V</b> .
MODEL	5	8.83617472	1.767	23494	0.25	0. <b>939</b> 1	0.005772	47.8343
ERROR	216	1522.11878024	7.046	84620		ROOT MSE	к	INSUBSC MEAN
CORRECTED TOTAL	221	1530.95495495				2.65458965		5.54954955
SOURCE	DF	ANOVA SS	F VALUE	PR > F				
ORBORN	5	8.83617472	0.25	0.9391				
## Analysis of Variance Procedure Using KIDS Toddler Subscale Score and Ordinal Position

#### ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABL	E: DTOSUBSC	KIDS TODDLER SUBSCALE	SCORE					
SOURCE	DF	SUM OF SQUARES	MEAN S	QUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	5	19.47047971	3.894	09594	Q.69	O.6278	0.015832	39.6316
ERROR	216	1210.36735813	5.603	55258		ROOT MSE	D	TOSUBSC MEAN
CORRECTED TOTAL	221	1229.83783784				2.36718241		5.97297297
SOURCE	DF	ANOVA SS	F VALUE	PR > F				
ORBORN	5	19 47047971	0.69	0.6278				

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# Analysis of Variance Procedure Using KIDS<sup>^</sup>Preschool Subscale Score and Ordinal Position

### ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABL	E KPRSUBSC	KIDS PRESCHOOLER SUBS	CALE SCORE					
SOURCE	DF	SUM OF SQUARES	MEAN S	QUARE	F VALUE	PR > F	R-SQUARE	C . V .
MODEL	5	17.9498 1023	3.589	96205	0.85	0.5185	0.019205	28.1267
ERROR	216	916.69883842	4.243	97610		ROOT MSE	к	PRSUBSC MEAN
CORRECTED TOTAL	221	934.64864865				2.06009129		7.32432432
SOURCE	DF	ANOVA SS	F VALUE	PR > F				
ÓRBORN	5	17.94981023	0.85	0.5185				

## Analysis of Variance Procedure Using KIDS School-Age Subscale Score and Ordinal Position

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ANALY	SI	S	OF	VAR	ANCE	PRO	CEDURE
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DEPENDENT VARIABLE	: KSASUBSC	KIDS SCHOOL-AGE SUBSC	ALE SCORE				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	<b>C</b> . <b>V</b> .
MODEL	5	33.93030007	6.78606001	1.29	0.2675	0.029085	27.4200
ERROR	216	1132.66429453	5.24381618		ROOT MSE		KSASUBSC MEAN
CORRECTED TOTAL	221	1166.59459459			2.28993803		8.35135135
SOURCE	DF	ANOVA SS	F VALUE PR >	F			
ORBORN	5	33.93030007	1.29 0.267	5			

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## Mean Scores for Abuse Scale, KIDS Total Scale, and KIDS Four Subscales/Correlation of Abuse Score with Total KIDS Score and KIDS Four Subscale Scores

VARIABLE	N	MEAN	STD DEV	SUM	MINIMUM	MÓMIXAM
ABUSESC	233	141.91416309	86.31963164	33066.0000000	13.0000000	355.00000000
KTS	233	27.14592275	5.28295838	6325.0000000	8.0000000	40.0000000
KINSUBSC	233	5.57939914	2.58875312	1300.0000000	0.0000000	12.0000000
DTOSUBSC	233	5.95278970	2.32534822	1387.0000000	0.0000000	11.00000000
KPRSUBSC	233	7.28326180	2.04402485	1697.0000000	2.0000000	12.0000000
KSASUBSC	233	8.35193133	2.27726927	1946.0000000	1.0000000	12.00000000

#### PEARSON CORRELATION COEFFICIENTS / PROB > |R| UNDER HO:RHO=O / N = 233

#### ABUSESC

KTS	-0.22230
KIDS TOTAL SCORE	0.0006
KINSUBSC	-0.20031
	0.20001
KIDS INFANCY SUBSCALE SCURE	0.0021
DTOSUBSC	-0.15676
KIDS TODDLER SUBSCALE SCORE	0.0166
KPRSUBSC	-0.05153
	0 4337
KIDS PRESCHOOLER SUBSCALE SCORE	0.4337
KSASUBSC	-0.09214
KIDS SCHOOL-AGE SUBSCALE SCORE	0.1610

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## Analysis of Variance for Abuse Scale and Five KIDS Scales

DEP VARIABLE: KTS KIDS TOTAL SCORE

### ANALYSIS OF VARIANCE

SOURCE	DF	SUM OF SQUARES	ME AN SQUARE	F VALUE	PROB>F
MODEL Error C total	1 231 232	3 19 . 9879 1 6 155 . 0507 1 6475 . 03863	319.98791 26.64524118	12.009	0.0006
ROOT Dep C.V.	MSE MEAN	5 . 16 1903 27 . 14592 19 .01539	R-SQUARE ADJ R-SQ	0.0494 0.0453	

#### PARAMETER ESTIMATES

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD Error	T FOR HO: Parameter=0	PROB >  T	VARIABLE LABEL
INTERCEP	1	29.07673016	0.65175722	44.613	0.0001	INTERCEPT
ABUSESC	1	-0.01360546	0.003926054	-3.465	0.0006	ABUSE SCALE

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DEP VARIABLE: KINSUBSC KIDS INFANCY SUBSCALE SCORE

#### ANALYSIS OF VARIANCE

			SUM OF	MEAN		
	SOURCE	DF	SQUARES	SQUARE	F VALUE	PROB>F
l	MODEL	1	62.38162455	62.38162455	9.656	0.0021
	ERROR	231	1492.39949	6.46060386		
1	C TOTAL	232	1554.78112			
	ROOT	MSE	2.541772	R-SQUARE	0.0401	
	DEP	MEAN	5.579399	ADJ R-SO	0.0360	
	<b>c</b> .v.		45.55637			

#### PARAMETER ESTIMATES

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VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: Parameter=0	PROB >  T	VARIABLE LABEL
INTERCEP	1	6.43191116	0.32093167	20.041	0.0001	INTERCEPT
ABUSESC		-0.006007237	0.001933228	-3.107	0.0021	Abuse scale

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#### DEP VARIABLE: DTOSUBSC KIDS TODDLER SUBSCALE SCORE

### ANALYSIS OF VARIANCE

		SUM OF	MEAN		
SOURCE	DF	SQUARES	SQUARE	F VALUE	PROB>F
MODEL	1	30.82704809	30.82704809	5.819	0.0166
ERROR	231	1223.65364	5.29720190		
C TOTAL	232	1254.48069			
ROOT	MSE	2.301565	R-SQUARE	0.0246	
DEP	MEAN	5.95279	ADJ R-SQ	0.0204	
C.V.		38.66364			

#### PARAMETER ESTIMATES

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD Error	T FOR HO: PARAMETER=O	PROB >  T	VARIABLE LABEL
INTERCEP	1	6 . 55208 123	0.29060246	22.547	0.0001	INTERCEPT
ABUSESC		-0 . 0042229 16	0.001750531	-2.412	0.0166	Abuse scale

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#### DEP VARIABLE: KPRSUBSC KIDS PRESCHOOLER SUBSCALE SCORE

### ANALYSIS OF VARIANCE

		SUM OF	MEAN		
SOURCE	DF	SQUARES	SQUARE	F VALUE	PROB>F
MODEL	1	2.57385383	2.57385383	0.615	0.4337
ERROR	231	966.73087	4.18498211		
C TOTAL	232	969 . 30472			
ROOT	MSE	2.045723	R-SQUARE	0.0027	
DEP	MEAN	7.283262	ADJ R-SQ	-0.0017	
C.V.		28.088			

#### PARAMETER ESTIMATES

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD	T FOR HO: PARAMETER=O	PROB >  T	VARIABLE LABEL
INTERCEP	1	7.45642839	0.25829906	28.867	0.0001	INTERCEPT
ABUSESC	1	-0.001220221	0.001555941	-0.784	0.4337	Abuse scale

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#### DEP VARIABLE: KSASUBSC KIDS SCHOOL-AGE SUBSCALE SCORE

## ANALYSIS OF VARIANCE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB>F
MODEL Error C total	1 231 232	10.21402626 1192.92760 1203.14163	10.21402626 5.16418876	1.978	0.1610
ROOT DEP C.V.	MSE	2 . 272485 8 . 35 193 1 27 . 209 1	R-SQUARE ADJ R-SQ	0.00 <b>85</b> 0.0042	

### PARAMETER ESTIMATES

VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T FOR HO: PARAMETER=O	PROB >  T	VARIABLE LABEL
INTERCEP	1	8.69689285	0.28693074	30.310	0.0001	INTERCEPT
ABUSESC	1	-0.002430776	0.001728413	- 1 . 406	0.1610	ABUSE SCALE

## VITA

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## Toni Jean DeMarco

Candidate for the Degree of

Master of Science

Thesis: RELATIONSHIP OF HIGH SCHOOL STUDENTS' KNOWLEDGE OF CHILD DEVELOPMENT TO POTENTIAL FOR CHILD ABUSE

Major Field: Family Relations and Child Development

**Biographical:** 

- Personal Data: Born in Borger, Texas, September 15, 1963, the daughter of Sal and Marilyn DeMarco.
- Education: Graduated from College High School, Bartlesville, Oklahoma, in May, 1981; attended the University of Southwestern Louisiana, Lafayette, Louisiana, from September, 1981, to December, 1983; received Bachelor of Science Degree in Family Relations and Child Development from Oklahoma State University in December, 1985; completed requirements for the Master of Science Degree at Oklahoma State University in December, 1987.
- Professional Experience: Graduate Teaching Assistant, Oklahoma State University, January, 1986, to May, 1987; Member Omicron Nu Honorary Society; Member Kappa Omicron Phi Honorary Society.