FAMILY STRESS FACTORS AND BEHAVIOR PROBLEMS OF CHILDREN

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This study examined the relationship among the factors of parental stress, marital adjustment, life event stress, and behavior problems of children and whether the sources and levels of parental stress, marital adjustment, and life event stress differed among families of children with behavior problems and families whose children did not experience behavior problems.

The subjects for this study were 60 mothers and their children from the North Texas metropolitan area chosen from two populations. Group I was composed of mothers of 30 children referred to a university related counseling center for behavior problems. Group II was composed of 30 mothers of children identified as not experiencing difficulty. Each mother completed the Parenting Stress Index (PSI), Short Marital Adjustment Test (SMAT), and Social Readjustment Rating Questionnaire (SRRQ).

Hotellings T² tests were used to determine whether the groups differed on sources and levels of parenting stress, marital adjustment, and life event stress. The groups differed significantly on the variables of sources and levels of parenting stress but not on marital adjustment or life event stress. The multiple regression technique was
used to determine which variable or combination of variables would predict group membership. Parenting stress was found to be the best predictor of group membership.

Based on this study, mothers who have a child with behavior problems do have an increased level of parenting stress. This increased level of stress is related to characteristics of their child and to their own personal characteristics. Those mothers who experience increased levels of parenting stress do not experience significantly less satisfaction in their marriages nor do their children experience more stressful life events than other children.
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FAMILY STRESS FACTORS AND BEHAVIOR PROBLEMS OF CHILDREN

The number of children experiencing emotional and behavioral problems, as reported by parents, school officials, and other professionals who work with children, appears to be increasing, and a growing body of literature appears to assume a relationship between these emotional and behavioral difficulties and stress in children. However, few studies have systematically examined possible sources of stress within the child's environment including life event and family stress factors (Elkind, 1981; Kuzen, 1982; Lafiasco, 1983; McNamee, 1982).

For children, the primary environmental context is the family. Each family forms a network of complex human interactions in which each member reciprocally affects the others. In families, no change takes place in isolation or has a single, universal effect (Moos, 1977; Minuchin, 1974). To understand stress in children, then, the complex reaction patterns and individual outcomes must be considered within the relational perspective of the family. From this interactional viewpoint, parental roles and transitions, the parents' marital relationship, and situational circumstances all are potential sources of stress for children (Abidin, 1982; Rutter, 1983).
Parenting is considered to be one of the most challenging yet potentially stressful roles and transitions of adulthood. The amount of stress experienced in parenting appears to depend upon many factors including the family's situational circumstances, the parent's personal attributes and values, and personal characteristics of the child or children (Abidin, 1982; Brooks, 1981; Miller & Myers-Walls, 1983). Current knowledge regarding the relationship between parenting stress and child behavior is based primarily on observation and opinion. Research examining the degree to which parenting stress is associated with the psychological well being of the child is extremely limited (Abidin, 1982; Beddell, Giordani, Armour, Tavormina, & Boll, 1977).

The nature of the parents' marital relationship is assumed to be another potential source of stress for parents and, therefore, for their children (Bloom, Asher, & White, 1978). Although marriage problems have consistently been identified as significant stressors which can have deleterious effects on children (Emery, 1982), few studies have examined the effects of marital stress combined with other stress factors on children.

Situational circumstances outside the parent-child relationship can also produce stress for parents and children. Using measures of life stresses or social readjustment, researchers have demonstrated that psychological functioning is related to recent experiences...
that have required life changes in adults (Coddington, 1972a, 1972b; Dohrenwend & Dohrenwend, 1974; Holmes & Rahe, 1967). However, research examining the effects of life stress on children has been of limited scope with a majority of research focused on the relationship between life event stress and physical illness in children (Abidin, 1982; Beddel, Giordani, Armour, Tavormina, and Bell, 1977; Varma, 1973; McNamee, 1982; Schaffer & Schaffer, 1982) with little emphasis on the relationship between life event stress and children's behavior.

The limited data regarding the relationship between family stress factors and children's behavior seem to warrant additional research. Information gained from such research is presented to facilitate more complete understanding of the effects of various stress factors on children.

Related Research

Parenting Stress

Specific sources of parental stress may be personal characteristics of the child which prevent the child from meeting parental or community expectations, characteristics of the parent which limit parental functioning and contribute to feelings of inadequacy or failure, or stressful situational circumstances outside the parent-child relationship (Abidin, 1982; Miller & Myers-Walls, 1983).
Excessively stressful characteristics of the child have been identified as major factors contributing to parenting stress and suggest that a child with behavior problems creates ongoing stress for parents (Abidin, 1982; Patterson, 1980).

Research on the relationship between parenting stress and active behavior problems in children such as aggressiveness, destructiveness, temper tantrums, disobedience, and withdrawing is limited. One study examined the relationship of parental stress to anxiety, approval motivation, and children's behavior problems. Lafiosca (1983) evaluated 70 mother-child pairs, 40 of whom were clinically referred to a developmental evaluation clinic and 30 of whom were teacher-referred as being well-adjusted children working up to their potential. The mothers of these children completed a self-report battery consisting of the Parenting Stress Index, State-Trait Anxiety Inventory, Marlowe-Crowne Social Desirability Scale, and Behavior Problem Checklist. Clinic-referred mothers reported significantly more stress, anxiety, and children's behavior problems than did their non-clinic referred counterparts. Correlational analyses between the Parenting Stress Index, State-Trait Anxiety Scale, and Behavior Problem Checklist resulted in significant correlations linking parental stress to maternal anxiety and children's behavior problems.
Although only Lafiosca's study was found which examined the relationship between parenting stress and active behavior problems, other studies examined parenting stress and other child problems such as hyperactivity, handicapping conditions, mental retardation, and chronic illness. Mash and Johnston (1983) examined parental perceptions of child behavior, parenting self-esteem and mother's reported stress for younger and older hyperactive and normal children. Forty families with a hyperactive child and 51 families with normal children participated. Multiple criteria were used to designate a child as hyperactive, including a clinical diagnosis of hyperactivity by the referral agent, maternal report of a developmental history of hyperactivity, and a maternal rating at least two standard deviations above the normative mean on the Conners' Abbreviated Rating Scale and the Werry-Weiss-Peters Activity Scale (WWP). Families of normal children were recruited through school notices and a door-to-door survey. None of the normal children were rated by their mothers as within the hyperactive range on either the Conners or WWP scales and none were described as experiencing serious medical or behavioral difficulties. Parental perceptions of child behavior problems were assessed using the Child Behavior Checklist, parenting self-esteem was assessed using the Parenting Sense of Competence Scale, and the degree of stress in the mother-child relationship was assessed with the Parenting Stress Index.
In comparison to parents of normal children, parents of hyperactives reported lower self-esteem and greater maternal stress and perceived their children as having more problems. The child characteristics of degree of bother to the parent and distractibility emerged as major sources of stress for mothers of hyperactive children. Mothers of hyperactives also reported significantly more stress related to parent-child interaction, feelings of depression, social isolation, and self-blame. These findings are consistent with other literature describing maternal distress in mothers of both hyperactive and behavior-disordered children (Patterson, 1980).

Cummings, Bagley, and Rie (1978) studied the effects of mentally retarded, chronically ill, behavior-disordered, and healthy children on mothers. All of the mothers had the common demographic characteristics of intact family status, natural mother of the child, affected child in the age range of 4-12, socioeconomic status in the upper-middle to upper-lower range. Children included in the mentally retarded group had been diagnosed as retarded by a specialty clinic serving the mentally retarded. The chronically physically ill group included children with diabetes, heart problems, and cystic fibrosis. The behavior-disordered children had been diagnosed by a community clinic as having a behavior
disorder without psychosis, mental retardation, or organic brain damage. Children in the control group were certified by a physician as having no deficiencies in physical health, intellect, or psychological adjustment. The mothers completed a battery of self-administered tests including the Shoben Parental Attitudes Inventory, Self-Acceptance Scale of the Berger Acceptance Inventory, Sentence Completion Test, and Family Drawing Task. Initially, fathers were asked to complete the battery of tests, but participation by fathers was low and results of their tests were not included in the study. The authors indicated that results of the fathers’ tests would be the subject of a future study. Mothers of mentally retarded, chronically ill, and behavior-disordered children were found to have significantly lower self-esteem, less interpersonal satisfaction, higher levels of psychological discomfort, and more social alienation than mothers of healthy children. Although all mothers who had children with identified problems showed significantly more stress than the control group, being the mother of a retarded child appeared to be more stressful than being the mother of a chronically ill or behavior-disordered child. These results supported the common clinical observation that having a child deficient in adaptive competence or health is a psychologically stressful experience for mothers (Patterson, 1980).
Behaviors exhibited by problem children are generally perceived by parents as annoying, noxious, and stressful and result in a wide range of emotional and psychological parental reactions (Jones, Reid, & Patterson, 1975). As a result, adults are likely to react more harshly in response to children who are overactive (Stevens-Long, 1973), unresponsive to discipline (Mulhern & Passman, 1981), or uncontrollable (Bugental, Caporeal, & Shennum, 1980). Having a child with adjustment problems may adversely affect the manner in which parents perceive the child, their role as a parent, and themselves (Mash & Johnston, 1983).

Characteristics of the parent which may limit parental functioning such as unhappiness, feelings of guilt, depression, or a perceived lack of competence may also contribute to parental stress. Elkind (1981) observed that adults under stress tend to become self-absorbed and lack energy for dealing with issues apart from themselves. Adults may expend so much effort coping with the daily stress of living that little strength or enthusiasm is left for parenting.

Marital Adjustment

Numerous researchers in the United States have found significant relationships between discord in marriage and adjustment problems in children. Emery and O'Leary (1982) examined the relationship between marital discord and
frequency of behavior problems in a sample of 50 clinic-referred children, 25 boys and 25 girls. The subjects ranged in age from 8 to 17 years and had been referred to a child guidance clinic for behavior problems. Only children with no history of severe learning disability and who lived in intact homes with their natural parents were included in the study. Because twice as many boys as girls were in therapy at the clinic, a random sample of 25 boys who met research criteria was selected while all of the girls who met the criteria during the designated time period were included in the sample. Clinic parents independently completed the Short Marital Adjustment Test, O'Leary-Porter Scale, and Behavior Problem Checklist at the beginning of therapy. Children completed the Children's Perception Questionnaire which was derived from Schaefer's Children's Report of Parental Behavior Inventory as a measure of their perception of the parents' marital discord. Because all children were accompanied to the clinic by their mothers, maternal reports were obtained for all cases. In cases where the father also accompanied the child, the fathers also completed the instruments. In cases where the father did not come to the clinic, attempts were made to obtain the completed reports. These efforts were of limited success. Although the study reported results for fathers that did cooperate, these reports were viewed with caution as a self-selected subsample. The SMAT was given to mothers
only because husband and wife scores are known to be highly correlated (Kimmel & Van Der Veen, 1974). Although marital discord was significantly related to conduct problems in all children, marital discord was more highly correlated to conduct problems in boys. Both girls and boys perceived parental marital discord with equal and moderate accuracy, and the children's feelings of nonacceptance by their parents were not significantly related to marital discord.

Oltmann, Broderick, and O'Leary (1977) compared the marital distress and reported child deviant behavior of 49 parents of children referred to a child psychological clinic for behavior problems and parents of 31 nonreferred children of the same age and socioeconomic status (average age of sample children was 8.7 years). The presenting problems of referred children varied, but all were clinically diagnosed as unsocialized aggressive reaction of childhood, overanxious reaction of childhood, or withdrawing reaction of childhood, according to the APA Diagnostic and Clinical Manual (1968). The control sample was selected from local school census records and randomly chosen on the basis of being parents of a child of the same sex and in the same grade as a clinic child. Control families were contacted by unannounced home visits and offered $15 to participate to avoid using volunteer families. The Short Marital Adjustment Test and Behavior Problem Checklist were completed by both parents. Marital adjustment of clinic
parents was significantly lower than that of the control sample. Also, there was a consistent negative correlation between marital adjustment and perceived severity of children's behavior problems as measured by the Behavior Problem Checklist.

Johnson and Lobitz (1974) studied the relationship of parent's personal and marital adjustment and the behavior of their children using self-report inventories, Minnesota Multiphasic Personality Inventory, Locke-Wallace Short Marital Adjustment Test (SMAT), and observer ratings. Subjects were 31 families referred for counseling regarding their male child's behavior problems. Mean age of the children in the study was 7.5 years. All referred children exhibited active behavior problems including aggressiveness, destructiveness, hyperactivity, or temper tantrums, as described by the referring agency and/or the parents themselves. Correlation of scores on the self-report inventories, MMPI, SMAT, and observer ratings of child behavior revealed significantly consistent negative relationships between marital satisfaction and the observed level of child deviance. Also, there was a significant negative relationship between marital satisfaction and the level of observed parental negativeness to the child. The relationship between the child's deviant behavior and parental personality characteristics was significant only for fathers indicating, according to Johnson and Lobitz, the
importance of the role of fathers in the development of conduct disorders of boys.

The relationship between marital adjustment and behavior problems in children also has been consistently reported by researchers in England (Rutter, 1979), India (Chawla & Gupt, 1979) and Israel (Klein & Shulman, 1980). Rutter (1971) simultaneously studied the effects of parental personality disturbance and marital discord. He examined a group of 80 boys with a psychologically disturbed parent, 42 had parents with a marriage rated as good or fair and 38 had parents with marriages rated as very poor. Boys who had parents with good or fair marriages were at no increased risk for antisocial behavior associated with having a parent with a personality disturbance. Boys whose parents had a poor marriage were at a much increased risk for antisocial behavior. Thus, the authors concluded that parental personality disturbance had significantly less effect on the child's behavior when there was a harmonious marriage. However, in discordant marriages, parental personality disturbance tended to exacerbate the detrimental effects of marital discord.

Emery, Weintrub, and Neale (1982) compared second through ninth grade children who had one parent diagnosed as either schizophrenic (N=38), unipolar depressed (N=64), bipolar (N=47), or normal (N=57). Families with a disturbed parent were selected by screening inpatient admissions to public
hospitals. Diagnosis was based on a structured interview, results of the MMPI, interviews with the patient's spouse, and hospital records. Each case was independently evaluated by two of three clinicians and diagnoses were assigned using the Spitzer, Endicott, and Robbins Research Diagnostic Criteria (1978) and DSM-III. Using the Locke-Wallace Marital Adjustment Test, Devereux Elementary School Behavior Rating Scale, and school records, researchers found that marital discord accounted for a greater proportion of the variance of children's disturbed school behavior than did parental psychopathology.

A number of studies have demonstrated greater communication problems (Leighton, Stoelak & Ferguson, 1971) and less satisfaction with marriage (Love & Kaswan, 1974) in parents of clinically referred children than in parents of nonreferred children. Bond and McMahon (1984) examined the relationship of marital adjustment, maternal personal adjustment, maternal parenting behavior, and child behavior in a sample of 20 maritally distressed and 20 maritally nondistressed mothers and their children (aged 3 to 7 years). Self report instruments included the Beck Depression Inventory, State-Trait Anxiety Inventory, the Personality Research Form, Parent Attitudes Test, and Child Behavior Checklist. Compared to mothers in the maritally nondistressed group, mothers in the distressed group perceived themselves as significantly more anxious and
depressed. There was also a trend for maritally distressed mothers to show less appropriate parenting behavior than nondistressed mothers and for children of maritally distressed mothers to be more deviant than children of nondistressed mothers.

Opposing views have emerged as to the etiology of the relationship between marital problems and child disturbance. One hypothesis, from family systems theory, identifies marital discord as the genesis of child disturbance through the detouring of marital conflicts onto the child. The child serves the function of distracting parents from marital conflicts and redirects parental concerns by becoming symptomatic (Emery, 1982; Margolin, 1981; Minuchin, 1974).

In opposition to the assumption that marital turmoil caused problems in children, Bell and Harper (1977) hypothesized that the reverse is true and emphasized the strain a problem child places on the marriage. In support of this position, numerous studies on marital functioning have reported that children can decrease marital satisfaction. Rosenblatt (1974) observed 440 adult couples with and without children and concluded that couples without children had a higher frequency of positive couple interaction including touch, talk, and smiles, than couples with children. In polling responses from 5,163 married adults, Renee (1970) found that couples with children reported
significantly less satisfaction with their marriages than couples who had never had children or whose children had left home. Campbell, Converse, and Rodgers (1976) conducted personal interviews with 2,164 persons 18 years of age or older and found the highest reported levels of expressed satisfaction with marriage among families with no children in the home and found personal satisfaction declining moderately but consistently with increased number of children at home.

While each hypothesis regarding the etiology of the relationship between marital problems and child behavior problems may have merit, neither seems to fully explain this complex relationship. Another and perhaps more complete explanation is one of reciprocal influence with marital and child problems viewed as interactive, each affecting and exacerbating the other (Lerner & Spanier, 1978). Thus, parents who are involved in conflict may place more stress on their children. Some children may serve to distract attention away from parental conflict while others may be a major source of conflict. A substantial body of literature is consistent with the interactional viewpoint (Forehand, King, Peed & Yoder, 1975; Griest, Forehand, Wells & McMahon, 1980; Mash & Johnson, 1983; Lobitz & Johnson, 1975; Patterson, 1982).
Life Event Stress

There is reasonably strong evidence that adults' stressful life events are significantly related to suicide, depressive conditions, and psychological dysfunction (Andrews & Tennant, 1978; Brown & Harris, 1978; Dohrenwend & Dohrenwend, 1980; Langner & Michael, 1963; Lloyd, 1980; Meyers, Lindenthal, Ostrander & Pepper, 1972; Paykel, 1978). Evidence is also mounting that such events serve to precipitate and maintain physical illnesses (Cochrane & Robertson, 1973; Dohrenwend & Dohrenwend, 1974; Holmes & Rahe, 1967; Holmes & Masuda, 1974; Kellam, 1974).

In sharp contrast, there is a paucity of evidence on the importance of stressful life events and psychological problems of children. Several studies have shown that experiences of various kinds categorized as maternal deprivation may substantially increase the risk of psychiatric disorder in childhood (Suedfeld, 1981; Rutter, 1983). But these studies have been concerned with chronic, long-lasting adversities such as prolonged family discord, parental rejection and neglect, or institutional upbringing. Less is known about less catastrophic life events and childhood behavior.

The investigations that have been made point to the importance of the relationship between childhood stress and adjustment problems. Hudgens (1974) noted a relationship between severe personal stressors and depression in a group
of adolescents with medical disorders. Douglas (1973) found that a high number of stress events in the first four years of life was associated with later enuresis. Heisel (1972) found a higher number of stressors in children with psychiatric disorder than in general population controls.

In other studies, single specific life events have been related to adjustment problems in children. Numerous studies have shown that many preschool children exhibit emotional disturbance after hospital admission (Rutter, Tizard, & Whitmore, 1981). Vernon, Foley, Sipowicz, and Schulman (1965) made an extensive, comprehensive review of studies dealing with the effect of hospitalization on children. They concluded that the experience of hospitalization was a psychologically upsetting experience for a majority of the children studied.

Several studies have linked birth of a sibling to changes in behavior in a large percentage of children (Moore, 1975). Dunn, Kendrick, and McNamee (1980) studied reactions of 40 first-born children to the birth of a sibling. Subjects were 21 first-born boys and 19 first-born girls ranging in age from 18 to 43 months. Subjects were studied over a period from 1 to 3 months before birth of the second child until the second child was 14 months old through interviews and observations. A majority of children in the sample showed signs of disturbed or negative behavior
including clinging, tearfulness, or withdrawal after the birth of the second child.

Parental divorce has been frequently linked to increased emotional disturbance in children (Emery, 1982). Wallerstein and Kelly (1980) studied the impact of divorce on 131 non-clinic children and adolescents from 60 divorced families immediately following the divorce and one year later. All children were considered by parents and school personnel to be functioning within normal developmental and intellectual limits. Information from each child and the parents was gathered by a member of an interdisciplinary clinical team during four to six individual sessions conducted over a six-week time span. All subjects had a follow-up evaluation one year later. Independent information was obtained with parental consent from the schools at the time of initial counseling and a year later. Results indicated that parental separation and divorce set in motion for children and adolescents a wide range of emotions which tended to diminish in intensity over the course of the first year. However, at the first year mark, 48 percent of the children appeared to be still struggling with the task of integrating divorce-related changes in their lives. Love and Kaswan (1974) examined the family and school environment of 120 children. Of the participating families, 91 had a child considered by school personnel to have chronic and severe adjustment problems and 29
contained a child who had been selected by school personnel as a well-adjusted, non-behavior problem child. Groups were matched on age, sex, general intelligence, socioeconomic level, and classroom teacher. Comparisons of the two groups revealed that twice as many referred children came from divorced families.

To understand the complex relationship between family stress factors and the behavior of children, the effects of parenting stress, marital adjustment, and life event stress on the behavior of children need to be assessed. This study examined the relationship among the factors of parental stress, marital adjustment, life event stress, and behavior problems of children and whether the sources and levels of parental stress, marital adjustment, and life event stress differed among families of children with behavior problems and families whose children did not experience behavior problems.

Procedures

Hypotheses
1. The profiles of scores on the Parenting Stress Index, the Short Marital Adjustment Test, and the Social Readjustment Rating Scale will differ significantly between Group I (referred children) and Group II (non-referred children).
2. The profile of scores on the subscales of the Parenting Stress Index will differ significantly between Group I and Group II.

3. When examining Group I and Group II, some linear combination of the variables of parenting stress, marital adjustment, and life event stress will predict group membership with $R^2$ significantly different from 0.

Subjects

The subjects for this study were 60 mothers and their children from the North Texas metropolitan area selected from two populations. Group I (referred, $N = 30$) was composed of children brought to a university related counseling center between January and March, 1986, by parents seeking professional help in dealing with the child's behavior which had been identified as inappropriate by both parents and school officials. Children who had been diagnosed as hyperactive by a physician and had been prescribed medication for this condition as indicated on the counseling referral form completed by the parent (Appendix A) were not included in this study. Permission to conduct the study at the center was granted by the Director (Appendix B). Group II (non-referred, $N = 30$) was composed of children identified as not exhibiting behavior problems by school officials and parents.

Children in this study included an equal number of males and females ranging from 4.0 to 11.11 years of age.
enrolled in a formal educational program, preschool through sixth grade. Group I and II children were matched on sex, grade (age for preschool), family type, and marital status of the parents. A chi-square test indicated that children in the two groups had similar socioeconomic backgrounds.

Although the involvement of men in child care appears to be increasing, the primacy of maternal care is still recognized by the court system (Bane, 1979) and by a majority of parents (Nye, 1976; Pleck, 1977; Rubin, 1979). A review of the records of children referred to the university related counseling center for one year showed approximately 99 per cent of the children were accompanied to counseling by the female parent. Therefore, mothers were the subjects in this study.

Mothers in both groups included biological, adoptive, and stepmothers. All participating families were two-parent biological, adoptive, or stepfamilies. All stepfamilies in the study had been a family unit for more than one year.

Instrumentation

This study employed the Parenting Stress Index (PSI) (Abidin, 1983) to identify the sources of stress and quantify the amount of stress experienced by mothers. The PSI contains 126 items divided into two domains representing sources of stress in the parent-child relationship, child characteristics and parental characteristics. The Child Domain contains 47 items and measures...
qualities associated with children which make it difficult for parents to fulfill their parenting role. The subscales are Child Adaptability, Acceptability of Child to Parent, Child Demandingness, Child Mood, Child Distractibility, and Child Reinforces Parent. The Parent Domain is comprised of 54 items related to dimensions of parent functioning. The subscales are Parent Depression, Parent Attachment, Restrictions Imposed by Parental Role, Parent Sense of Competence, Social Isolation, Relationship with Spouse, and Parental Health.

The response mode is a 5-point Likert-type scale with answers ranging from strongly agree to strongly disagree with a possible high score of 505. Scores over 250 indicate parent-child systems under stress. The PSI is the only known objective measure of parenting stress currently developed. The PSI was developed to be a screening and diagnostic tool for identification of the magnitude of stress in the parent-child subsystem (Abidin, 1983).

Concurrent and construct validity were established for the PSI using several criterion measures. Lafiosca (1983) found significant correlations (p<.001) between the Child Domain of the PSI and the Child Behavior Problem Checklist (Quay & Peterson, 1979) and the Parent Domain Score and the State-Trait Anxiety Scale (p<.001). Zakreski (1983) found PSI scores for Child Domain, Parent Domain, and total Stress
Scores significantly correlated (p<.001) with the Bayley Infant Development Scale.

Loyd (1983) reported reliability coefficients for each subscale, for each domain, and for the total score on a sample of 534 parents. The alpha reliability coefficients ranged from .62 to .70 for the subscales of the Child Domain, and .55 to .80 for the subscales of the Parent Domain. The reliability coefficients reported for the two domains were .89 and .93, and the reliability coefficient for the Total Stress Score was .95. Test-retest reliability was .82 for the Child Domain, and .71 for the Parent Domain after three weeks and .55 for the Child Domain, .65 for the Parent Domain and .65 for the total after one year (Loyd, 1983).

Loyd (1983) reported 17 studies that found that the PSI discriminated between groups with different characteristics by significantly different patterns of scores on the PSI. Zimmerman (cited in Loyd, 1983) found 10 of the 20 scores on the PSI to differ significantly between a group of mothers of children with cerebral palsy and a matched control group of mothers of children with no known psychological or physical differences. Nearly all of the significant differences were found in the Child Domain indicating that certain characteristics of the child were major factors contributing to overall stress in the parent-child system. The only Parent Domain scores which were different were those
directly related to the child's problem, e.g., Social Isolation. Lafiosca (1983) found the PSI correctly identified 100 percent of the parents of the normal children (N=70) in her study and 60 percent of the parents of the children (N=70) who attended a child development clinic when the 90th percentile of the PSI Total Score was used as a cutoff. Significant mean differences were found for the total score, for the two domain scores, and for 11 of the 15 subscales. Upshur (cited in Loyd, 1983) also found that a cut-off score at the 90th percentile was useful for screening infants with developmental problems. He was able to identify 89 percent of the 26 children evidencing developmental delay using that cut-off score.

The Social Readjustment Rating Questionnaire (SRRQ) was developed by Coddington (1972a) to measure stress in children. The questionnaire contains 35 life events which are responded to by listing the number of times each event has occurred in the life of the child during the past year. The amount of life event stress a child has experienced during a specific time period is determined by summing the Life Change Units (geometric means of each item divided by 10) scored on the questionnaire. High scores indicate high stress levels for the child.

Coddington modified the Social Readjustment Rating Scale (SRRS) (Homes & Rahe, 1967) for use with children using the
same procedures established by Holmes and Rahe in the development of the SRRS. Based on the literature and his professional experience, Coddington derived a list of life events which occur in the lives of children. The life event items were divided into four lists according to age: (1) preschool age, (2) elementary age, (3) junior high school age, and (4) high school age.

The items on each list were ordered by 243 professionals including 131 teachers, 25 pediatricians, and 87 mental health workers employed in academic divisions of child psychiatry using the method for ordering developed by Holmes and Rahe (1967). The professionals rated each life event as to the relative degree of readjustment necessary for children of four different age groups. The items were rank ordered for the total sample and all distinct subsamples. Rank order correlations between the various subgroups ranged from .85 to .98 with the lowest occurring between pediatricians and mental health professionals when considering preschool children. The Mann-Whitney U-test was used to investigate the differences in the value assigned a given item by pediatricians, teachers, and mental health professionals. Significant differences were found in only 9 of the 144 life event values. Seven of these differences were between the ratings of teachers and mental health professionals or pediatricians, while pediatricians and mental health professionals disagreed only twice.
The SRRQ has been the instrument of choice for measuring stress in children in recent studies (Sandler & Ramsey, 1980; Gerstein, Langner, Eisenberg, & Orzick, 1974) because it is the best known objective measure of stress available for children. Coddington (1972b) has established age norms for the SSRQ based on a survey of over 3,500 healthy children and found no differences occurred between sexes, races, or members of different social classes. He found that life event experiences increased equally across all subgroups as age increased.

The Locke-Wallace Short Marital Adjustment Test (SMAT) (Locke & Wallace, 1959) was used to measure marital adjustment of the mothers participating in this study. The SMAT is designed to measure overall marital adjustment by using 15 forced-choice items. The range of total possible scores on the SMAT is 2 to 158 points. A high score indicates good marital adjustment while a low score indicates poor marital adjustment. Scores below 100 indicate marital discord. The SMAT, the most frequently used marital adjustment scale (O'Leary & Turkewitz, 1978), has been evaluated as one of the better indices of marital adjustment (O'Leary & Turkewitz, 1978). The instrument was also chosen for ease of administration and short length.

The SMAT was developed after Locke discovered several independent factors while investigating elements that successfully predicted marital adjustment (Locke, 1951). The test items were selected from a pool of approximately
540 items on the basis of those items which had the highest level of discriminatory power, did not reproduce previously covered areas, and provided adequate coverage of important areas of marital adjustment as determined by the author.

Normative data on SMAT were secured from a sample of 236 middle-class couples. The sample was divided into matched groups judged to be maladjusted in marriage or judged to be exceptionally well-adjusted by close friends. A critical ratio of 17.5 was obtained between group means indicating a definite difference in scores between the maladjusted and well-adjusted groups. A reliability coefficient of .90 was obtained by the split-half technique and the Spearman-Brown correction formula (Locke & Williamson, 1958). Additional validity was determined by comparing mean scores for couples who were in marriage counseling at the time of testing. The mean score for the well-adjusted group was 139.9 and the mean score for the maladjusted group was 71.7. Only 17 per cent of the maladjusted group scored 100 or higher.

The North-Hall Social Status Scale (Reiss, 1961) was used to determine homogeneity of families on socioeconomic status. The social status scale was developed by constructing a list of occupations obtained from census reports. Personal interviews were then conducted with a representative sample of 2,920 respondents. Each participant was asked to rate the social standing of each occupation from excellent to don't know. The occupations
were categorized into major occupational groups with an assigned number from 0 to 96. Occupations with numbers of 82 and above are classified as upper class; occupations with numbers between 53 and 82 are classified as middle class; and occupations below 53 are classified as lower class.

**Data Collection**

Membership in Group I (referred group) was determined by placing all names of referred children on a list in the order in which they were referred to the center. The mothers were contacted by telephone by the investigator in the order in which they appeared on the list. During the telephone conversation, the study was explained (Appendix C) and questions regarding the study were answered. When a person agreed to participate in the study, the date, time, and place of the meeting to collect data was set. The calls continued until 30 subjects from the list had been secured. Follow-up letters were mailed to participants prior to the meeting date to remind them of the date and time (Appendix D).

As each volunteer arrived, she was given an envelope of materials to complete and return in the envelope to the investigator. Subjects were free to leave when the instruments, demographic sheet (Appendix E), and consent form (Appendix F) were completed. Subjects desiring interpretation of the data were given index cards on which
to place their names and addresses and a copy of the completed abstract was mailed to them.

Additional individual sessions were scheduled during the week following the group data collection session for participants who were unable to attend the first meeting. The same procedure used in the group session was followed in each of these individual sessions.

Because the required number of subjects had not participated after the scheduled make-up sessions, eight additional mothers whose names were on the list were contacted by telephone in the order they were listed and the names of referred children were added to the list in the order in which new referrals were received by the center. Additional volunteers were recruited using the same procedures that were used to obtain the earlier subjects including the telephone call for agreement to participate, meeting time scheduled, and follow-up letter sent designating date, place, and time of meeting (Appendix D). The same procedure for collecting data was used for all sessions. All data for Group I were gathered within a six-week period.

To define the members for Group II (non-referred) the schools attended by the children whose mothers were in Group I were placed on a list in descending order of the number of referrals each school had made to the university related counseling center. The school referring the most
students from Group I was placed first, etc. School officials were contacted in the order their school was placed on the list until agreement to participate in the study was secured from one elementary school and one preschool. Using a table of random numbers, a total of 120 names (four times the number of subjects needed) was selected from the participating schools' attendance rolls, matched according to Group I subjects on sex and grade (age for preschool), and placed on the initial list of potential members for Group II. The school principal and counselor eliminated from the list the names of children who were known to have experienced behavioral or academic problems. Names were selected from the remaining list matched according to Group I subjects on sex, grade (age for preschool), family type, and marital status of the parents. Mothers of the children remaining on the list were contacted by telephone by the investigator. The mothers were asked if their child was currently experiencing behavioral difficulties. Any child identified by the parent as currently experiencing behavioral problems was eliminated from the list. The same telephone procedure was used for selection of Group II members as was used to select members of Group I (Appendix C). Follow-up letters were mailed to participants prior to the meeting date to remind them of the date, place, and time (Appendix D). Data collection and
make-up meetings for those who missed the first meeting were identical to those procedures used for Group I.

Because the required number of subjects had not participated after the scheduled make-up sessions, seven additional mothers whose names were on the list were contacted by telephone in the order they were listed. In three cases, the necessary matches could not be made from the existing list. Three additional names were added to the list from the school roll matched according to Group I subjects on sex, grade (age for preschool), family type, and marital status of the parents. School officials were asked to identify any child experiencing behavior or academic problems that could be eliminated from the list. Additional volunteers were recruited using the same procedures that were used to obtain the earlier subjects including the telephone call for agreement to participate, individual meeting time scheduled, and follow-up letter sent designating date, place, and time of meeting (Appendix D). The same procedure for collecting data was used for all sessions. All data for Group II was gathered within a four-week period.

To prepare for data collection, the investigator placed the Parenting Stress Index (PSI), Short Marital Adjustment Test (SMAT), and Social Readjustment Rating Questionnaire (SRRQ) answer sheets and test booklets, demographic data sheet (Appendix E), and consent form
(Appendix F) in brown envelopes. Tests were placed in the envelopes in random order to reduce or equalize the possible influence one test might have on the participant's responses to the other tests. Data sheets and consent forms were placed before the test booklets in all packets to be completed first by all participants. An instruction sheet (Appendix G) was attached to the outside of the envelope.

Results and Discussion

Analysis of Data

Hypotheses 1 and 2 were tested using a Hotellings $T^2$. If the Hotellings $T^2$ reached significance, separate univariate F-tests were used to determine which variables contributed to the overall significance. Hypothesis 3 was tested by the multiple regression technique to determine which of the variables or combination of variables were making significant contribution to the model. The .05 level was established as the level of significance.

Sixty mothers, representing 30 children in Group I (referred children) and 30 children in Group II (non-referred children) completed demographic sheets and all questionnaires. Each stratified group included 15 males and 15 females from 25 biological families, 4 stepfamilies, and 1 adoptive family. Each family was assigned an occupational number derived from the North-Hatt Social Status Scale based on the occupation of the father. A chi-square test revealed
no significant differences between the groups. T-tests comparing group means revealed no significant differences between the groups on ages of the children and ages of the fathers or mothers. The demographic data are reported in Table 1.

**TABLE 1**

DEMOGRAPHIC DATA FOR GROUP I AND GROUP II

<table>
<thead>
<tr>
<th></th>
<th>Group I</th>
<th>Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Types</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Stepfamily</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Adoptive</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Female</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Mean Age of Children</td>
<td>8.6</td>
<td>8.3</td>
</tr>
<tr>
<td>Mean Age of Mother</td>
<td>34.8</td>
<td>38.2</td>
</tr>
<tr>
<td>Mean Age of Father</td>
<td>38.1</td>
<td>39.4</td>
</tr>
<tr>
<td>SES*</td>
<td>60.97</td>
<td>61.13</td>
</tr>
</tbody>
</table>

*SES denotes socioeconomic status as determined by the North-Hatt Social Status Scale.

Hypothesis 1 stated that the profiles of scores on the Parenting Stress Index, the Short Marital Adjustment Test, and the Social Readjustment Rating Questionnaire would differ significantly between Group I and Group II. Table 2 shows the means and standard deviations of the separate group
scores and combined group scores on the Parenting Stress Index Total Score, PSI Parent and Child Subscales, Short Marital Adjustment Test, and the Social Readjustment Rating Questionnaire for each group and the combined groups.

TABLE 2
MEANS AND STANDARD DEVIATIONS FOR THE PSI TOTAL AND SUBSCALE SCORES AND FOR THE SMAT AND SRRQ SCORES FOR GROUP I, GROUP II, AND GROUPS COMBINED

<table>
<thead>
<tr>
<th></th>
<th>Group I (N=30)</th>
<th>Group II (N=30)</th>
<th>Total Combined (N=60)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PSI Total Score:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>267.53</td>
<td>213.33</td>
<td>240.42</td>
</tr>
<tr>
<td>SD</td>
<td>39.42</td>
<td>24.13</td>
<td>32.42</td>
</tr>
<tr>
<td><strong>PSI Child Subscale:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>130.00</td>
<td>94.60</td>
<td>112.30</td>
</tr>
<tr>
<td>SD</td>
<td>18.61</td>
<td>17.69</td>
<td>18.00</td>
</tr>
<tr>
<td><strong>PSI Parent Subscale:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>137.53</td>
<td>118.73</td>
<td>128.13</td>
</tr>
<tr>
<td>SD</td>
<td>23.76</td>
<td>15.03</td>
<td>19.71</td>
</tr>
<tr>
<td><strong>SMAT:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>110.00</td>
<td>120.00</td>
<td>115.00</td>
</tr>
<tr>
<td>SD</td>
<td>29.93</td>
<td>21.17</td>
<td>25.70</td>
</tr>
<tr>
<td><strong>SRRQ</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>372.47</td>
<td>346.83</td>
<td>359.65</td>
</tr>
<tr>
<td>SD</td>
<td>200.87</td>
<td>193.26</td>
<td>195.43</td>
</tr>
</tbody>
</table>

The results of the Hotellings $T^2$ analysis of variance are shown in Table 3.
The Hotelling T test of significance exceeded the .05 level of significance; therefore, univariate F-tests were used to determine the significance of the individual variables. The results of the separate univariate F-tests on the variables of parenting stress, marital stress, and life event stress are summarized in Table 4.

### Table 3

**HOTELLING'S T TEST OF SIGNIFICANCE FOR THE PSI, SMAT, AND SRRQ**

<table>
<thead>
<tr>
<th>Approx F</th>
<th>Hypoth DF</th>
<th>Error DF</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.17797</td>
<td>3.00</td>
<td>56.00</td>
<td>.001</td>
</tr>
</tbody>
</table>

2

The Hotelling T test of significance exceeded the .05 level of significance; therefore, univariate F-tests were used to determine the significance of the individual variables. The results of the separate univariate F-tests on the variables of parenting stress, marital stress, and life event stress are summarized in Table 4.

### Table 4

**UNIVARIATE F-TESTS ON THE PSI, SMAT, AND SRRQ SCORES WITH 1,58 D.F.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Between S.S.</th>
<th>Within S.S.</th>
<th>Between M.S.</th>
<th>Within M.S.</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI</td>
<td>56488</td>
<td>69593</td>
<td>56488</td>
<td>1199</td>
<td>47.08</td>
<td>.001</td>
</tr>
<tr>
<td>SMAT</td>
<td>1500</td>
<td>38984</td>
<td>1500</td>
<td>672</td>
<td>2.23</td>
<td>.141</td>
</tr>
<tr>
<td>SRRQ</td>
<td>9856</td>
<td>2254375</td>
<td>9856</td>
<td>38849</td>
<td>.25</td>
<td>.616</td>
</tr>
</tbody>
</table>

The F-value for the PSI reached the .05 level of significance and the F-values for the SMAT and SRRQ did not. Hypothesis 1 is supported in that the profiles of scores on the PSI, SMAT, and SRRQ are significantly different at the .05
level of significance. However, further analysis revealed that only the PSI scores differ between the two groups at the .05 level.

Hypothesis 2 stated that the profile of scores on the subscales of the Parenting Stress Index will differ significantly between Group I and Group II. The results of the Hotellings T^2 is shown in Table 5.

**TABLE 5**

<table>
<thead>
<tr>
<th>Approx F</th>
<th>Hypoth DF</th>
<th>Error DF</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.15722</td>
<td>2.00</td>
<td>57.00</td>
<td>.001</td>
</tr>
</tbody>
</table>

The F-value exceeded the .05 level of significance, therefore, univariate F-tests were used to determine where individual significance occurred. The results of the separate univariate F-tests on the Child and Parent subscales of the PSI are summarized in Table 6.

**TABLE 6**

**UNIVARIATE F-TESTS ON THE CHILD AND PARENT SUBSCALE SCORES OF THE PSI WITH 1, 58 D.F.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Between S.S.</th>
<th>Within S.S.</th>
<th>Between M.S.</th>
<th>Within M.S.</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI Child</td>
<td>18797.40</td>
<td>19121.20</td>
<td>18797.40</td>
<td>329.68</td>
<td>57.02</td>
<td>.001</td>
</tr>
<tr>
<td>PSI Parent</td>
<td>5880.60</td>
<td>22221.33</td>
<td>5880.60</td>
<td>383.13</td>
<td>15.35</td>
<td>.001</td>
</tr>
</tbody>
</table>
The F-values for the Child and Parent subscales of the PSI were significant at the .05 level of significance. Hypothesis 2 is supported in that the profiles of scores on the subscales of the PSI differ significantly between the two groups (p<.05).

Hypothesis 3 stated that when examining Group I and Group II some linear combination of the variables of parenting stress, marital adjustment, and life event stress would predict group membership with $R^2$ significantly different from 0. Because the model included all three variables, the F-testing for significance was the same as that obtained in Hypothesis 1 (Table 3) indicating that the variables discriminate between the groups. Table 7 shows the correlations among the variables of parenting stress, marital adjustment, and life event stress.

**TABLE 7**

CORRELATION OF SCORES ON THE PSI, SMAT, and SRRQ

<table>
<thead>
<tr>
<th></th>
<th>PSI</th>
<th>SMAT</th>
<th>SRRQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI</td>
<td>1.000</td>
<td>-.283</td>
<td>.235</td>
</tr>
<tr>
<td>SMAT</td>
<td>-.283</td>
<td>1.000</td>
<td>-.204</td>
</tr>
<tr>
<td>SRRQ</td>
<td>.235</td>
<td>-.204</td>
<td>1.000</td>
</tr>
</tbody>
</table>

According to these correlations, the PSI, SMAT, and SRRQ scores are somewhat independent items. Table 8 shows the beta weights, T-values, and significance of the variables of parenting stress, marital adjustment, and life event stress in the regression equation.
TABLE 8
BETA WEIGHTS, T-VALUES, AND SIGNIFICANCE FOR VARIABLES IN THE REGRESSION EQUATION

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Beta Weights</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI</td>
<td>-.0079</td>
<td>-.65999</td>
<td>-6.131</td>
<td>.001</td>
</tr>
<tr>
<td>SMAT</td>
<td>4.7759</td>
<td>.02481</td>
<td>.232</td>
<td>.817</td>
</tr>
<tr>
<td>SRRQ</td>
<td>2.4196</td>
<td>.09398</td>
<td>.891</td>
<td>.377</td>
</tr>
</tbody>
</table>

Only the variable of parenting stress is significant at the .05 level of significance. Table 9 shows the unique contribution of each variable (PSI, SMAT, and SRRQ) to the full model in terms of change in $R^2$.

TABLE 9
CONTRIBUTION OF THE VARIABLES OF PSI, SMAT, AND SRRQ TO THE FULL MODEL ($R^2 = .42424$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$ Change</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI</td>
<td>.38645</td>
<td>37.58672</td>
<td>.001</td>
</tr>
<tr>
<td>SMAT</td>
<td>.00055</td>
<td>.05388</td>
<td>.817</td>
</tr>
<tr>
<td>SRRQ</td>
<td>.00816</td>
<td>.79401</td>
<td>.377</td>
</tr>
</tbody>
</table>

Only the $F$-value for the variable of parenting stress contributes to the full model at the .05 level of significance. Table 10 shows the beta weight, $T$-value, and significance of the PSI model.
TABLE 10

BETA WEIGHT, T-VALUE, AND SIGNIFICANCE OF THE PSI MODEL ($R^2 = .41597$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Beta Weights</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI</td>
<td>-.00767</td>
<td>-.64496</td>
<td>-6.4270</td>
<td>.001</td>
</tr>
</tbody>
</table>

The F-value for the PSI variable is significant at the .05 level of significance. Table 11 shows the unique contribution of all possible pairs of variables to the full model.

TABLE 11

CONTRIBUTION OF COMBINATIONS OF VARIABLES TO THE FULL MODEL

<table>
<thead>
<tr>
<th>Variables</th>
<th>$R^2$ Change</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>(PSI) (SMAT)</td>
<td>.41988</td>
<td>20.419</td>
<td>.001</td>
</tr>
<tr>
<td>(PSI) (SRRQ)</td>
<td>.38719</td>
<td>18.829</td>
<td>.001</td>
</tr>
<tr>
<td>(SMAT) (SRRQ)</td>
<td>.00827</td>
<td>.402</td>
<td>.671</td>
</tr>
</tbody>
</table>

Only when SMAT and SRRQ are combined with PSI are the F-values significant. The contribution of the combined variables of SMAT and SRRQ to the full model is minimal.

Hypothesis 3 is supported in that a linear combination of the variables was found which predicted group membership with $R^2$ significantly different from 0. However, the multiple $R^2$ is only significant for the PSI variable with the SMAT and SRRQ contributing little to the overall regression equation.
Related Findings

A total score on the PSI of 250 or above represents critically high levels of stress, and a score over 300 indicates levels of stress in the crisis range (Abidin, 1983). The PSI scores above the critical and crisis range for mothers in Groups I and II are shown in Table 12.

**TABLE 12**

TOTAL AND SUBSCALE SCORES ON THE PSI OVER THE CRITICAL AND CRISIS RANGE

<table>
<thead>
<tr>
<th></th>
<th>Group I</th>
<th>Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>PSI Total Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Range-Over 250</td>
<td>16</td>
<td>53</td>
</tr>
<tr>
<td>Crisis Range-Over 300</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>Child Subscale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Range-Over 122</td>
<td>20</td>
<td>67</td>
</tr>
<tr>
<td>Parental Subscale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Range-Over 153</td>
<td>8</td>
<td>27</td>
</tr>
</tbody>
</table>

Fifty-three percent of the mothers in Group I had a total score in the critical range on the PSI while none of the mothers in Group II had a total score in the critical range. In Group I (referred group) 8 of the mothers or 27 percent had scores indicating stress levels related to crisis situations and none of the mothers in Group II had scores in the critical range.

Scores over 122 on the Child subscale and 153 on the Parent subscale of the PSI also represent critically high scores (Abidin, 1983). As represented in Table 12, 67
percent of the mothers of referred children had critically high scores on the PSI Child subscale, while less than 1 percent of the mothers of non-referred children scored in this range. On the Parent subscale, over one-fourth of Group I mothers and none of Group II mothers scored in the critical stress range.

Scores below 100 on the Short Marital Adjustment Test indicate marital discord (Locke & Wallace, 1959). Although the means for both groups were in the range indicating marital adjustment, a cursory check of the scores indicated that almost half the mothers in Group I scored in the range indicating marital discord. Therefore, further examination of the SMAT scores was of interest. Table 13 shows the mean of each group and the frequency and percentage of scores in the range indicating marital discord.

### TABLE 13

MEANS AND NUMBERS AND PERCENTAGES OF SMAT SCORES UNDER 100 FOR GROUP I & GROUP II

<table>
<thead>
<tr>
<th></th>
<th>Group I</th>
<th>Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>110</td>
<td>120</td>
</tr>
<tr>
<td>Number of Scores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 100</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Percentage of Scores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 100</td>
<td>43.3</td>
<td>13.3</td>
</tr>
</tbody>
</table>
Forty-three percent of the scores on the SMAT for Group I were in the range indicating marital discord compared to 13 percent for Group II.

Table 14 shows the frequency distribution and a histogram of SMAT scores for Group I.

| TABLE 14 |
| FREQUENCY DISTRIBUTION AND HISTOGRAM OF SCORES FOR THE SMAT FOR GROUP I (MEAN 110) |

<table>
<thead>
<tr>
<th>Scores Below 100</th>
<th>Scores Above 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Frequency</td>
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<tr>
<td>2 3 3 2 3</td>
<td>2 3 3 3 5 1</td>
</tr>
<tr>
<td>Cum. Frequency</td>
<td>Cum. Frequency</td>
</tr>
<tr>
<td>2 5 8 10 13</td>
<td>15 18 21 24 29 30</td>
</tr>
<tr>
<td>7 17 27 33 43</td>
<td>50 60 70 80 97 100</td>
</tr>
<tr>
<td>Midpoint Scores</td>
<td>Midpoint Scores</td>
</tr>
<tr>
<td>62 71 80 90 99</td>
<td>109 118 127 137 146 153</td>
</tr>
</tbody>
</table>

Table 15 shows the frequency distribution and histogram of SMAT scores for Group II. Scores for Group I are more evenly spread throughout the range of scores, while scores for Group II tend to cluster slightly above the cutoff score of 100.
TABLE 15

FREQUENCY DISTRIBUTION AND HISTOGRAM OF SCORES FOR THE SMAT FOR GROUP II (MEAN = 120)

<table>
<thead>
<tr>
<th></th>
<th>Scores Below 100</th>
<th>Scores Above 100</th>
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</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>1 1 2</td>
<td>2 8 6 7 1 2</td>
</tr>
<tr>
<td>Cum. Frequency</td>
<td>1 1 2 2 4</td>
<td>6 14 20 27 27 30</td>
</tr>
<tr>
<td>% Cum. Freq.</td>
<td>3 3 7 7 13</td>
<td>20 47 67 90 93 100</td>
</tr>
<tr>
<td>Midpoint Scores</td>
<td>57 67 77 86 96</td>
<td>106 116 126 136 145 155</td>
</tr>
</tbody>
</table>

Discussion

This study examined the combined effects of parental stress, marital adjustment, and life event stress as they relate to the behavior problems of children and found that mothers who have a child with behavior problems do have an increased level of parenting stress. This increased level of stress is related to characteristics of their child and to their own personal characteristics. These mothers who experience increased levels of parenting stress do not experience significantly less satisfaction in their marriages nor do their children experience more stressful life events than other children.
The greater parenting stress for mothers of behavior problem children found in this study supports the clinical observations expressed by many professionals who work with families and children that there is a relationship between behavior problems of children and stress for parents (Abidin, 1982; Miller & Myers-Walls, 1983; Weinberg & Richardson, 1981). This finding also supports the empirical findings of Lafiosca (1983) that a significant relationship existed between parenting stress and children's behavior problems.

The increased level of parenting stress found to be present when a child is referred for behavior problems indicates that assessing and reducing parental stress would be an important step in helping families with children with behavior problems. Reducing parental stress seems even more necessary when the level of stress in these mothers is considered; levels are often high enough to denote a potential crisis situation within the family.

When the stress level of the parent is high, techniques aimed at stress reduction appear to be needed prior to working with the parent on other areas such as improving parenting skills or behavior management techniques. When working with children referred for behavior problems, it seems necessary also to help parents recognize and reduce their stress. Social support may be a critical factor when a family is under a particular stress such as that associated with a behavior problem child. Possible ways to
reduce parental stress such as developing stronger natural support systems within the family, support from friends or extended family, or possibly through formally organized self-help support groups in the community need to be explored with the parent. Parent education classes may need to be prefaced with an evaluation of levels of parenting stress. If stress levels are high, beginning activities aimed at stress reduction may be necessary before didactic training begins.

The results of this study from scores on the PSI parent and child subscales indicate that sources of parental stress are related to both characteristics of the child which prevent the child from meeting parental expectations such as distractibility, demandingness, or moodiness and characteristics of the parent which limit parental functioning such as sense of competence, social isolation or health. This finding supports that of Lafiosca (1970) that parenting stress was related to both child and parental characteristics and also the opinions of practitioners that parental difficulties are often present in cases initially referred for child treatment (Abidin, 1983; Patterson, 1980). Effective intervention for families with children with behavior problems, then, should expand beyond the problems of the child. A multiple focus on the parent, the child, and parent-child interaction rather than individual child therapy appears to be necessary.
Marital adjustment is not significantly different between the two groups in this study which disputes the research findings of Bell and Harper (1977), Chawla and Gupt (1979), Emery and O'Leary (1982), Emery, Weintraub, and O'Neale (1982), Johnson and Lobtiz (1974), Klein and Shulman (1980), Oltmann, Broderick, and O'Leary (1977), and Rutter (1979) that child behavior problems were significantly related to marital adjustment. This finding also fails to support family system theory which identifies marital discord as the genesis for child misbehavior as a way to deflect marital conflicts onto the child (Margolin, 1981; Minuchin, 1974). Although the findings of this study seem to contradict most research findings in the area of marital adjustment and child behavior problems, it seems to be in agreement with the findings of Emery (1982) who also found no significant relationship between marital discord and child behavior problems. It may be that most current researchers have tended to inflate the association between interparental conflict and child behavior problems by not assessing other possible intervening variables such as parenting stress. The omission of these variables may have tended to inflate the relationship between marital adjustment and behavior problems of children. It may be that the amount of marital stress is related to the degree of the child's deviant behavior. Although no attempts were made in this study to rate degree of child deviancy, children who were subjects in previous research may have
presented more serious behavior problems than the referred group in this study resulting in more stress on the marriage. Although the relationship between marital stress and child behavior problems in this study was not statistically significant, the large percentage of marriages under stress in the referred group seems to indicate that stress in the marital relationship would be an important factor to be assessed when working with a family with a behavior problem child.

Life event stress is no greater for referred than non-referred children in this study and does not support the clinical observation of many professionals that children referred for behavior problems experience more life event stress than non-referred children (Dohrenwend & Dohrenwend, 1974). No similar research was found which examined the cumulative effect of life event stress and behavior problems of children.

The inclusion of only two-parent families in this study may have served to mediate life event stress on these children. The failure of this study's results to support popular professional opinion could be due to the fact that the SRRQ used to measure life event stress requested information from mothers regarding events that occurred in the life of their child for the preceding 12-month period. Two mothers in Group I added comments that their child had experienced particularly stressful events just prior to the one-year period. One mother mentioned death of a
grandparent 16 months earlier while another mentioned a sibling leaving home 13 months prior to completing the questionnaire. No similar comments were added by any Group II mothers. It may be that a study of cumulative life event stress should include life events experienced for a longer period than simply the 12 month period immediately preceding completion of the questionnaires.

According to the findings of this study, when considering the factors of parenting stress, marital adjustment, and life event stress, parenting stress is related to child behavior and is the best predictor of behavior problems in children in this sample. Knowledge about stress in the child as measured by external life events does not appear effective in predicting behavior problems nor does the status of the marriage relationship.

The strength of the relationship between parenting stress and behavior problems of children suggests the need for intervention techniques which involve both parents and children. More research will be needed to explore the specific characteristics of children and parents which tend to increase parenting stress. In the future, outcome research to assess the effectiveness of various counseling methods such as family counseling, individual child counseling, play therapy, and possibly parent support groups aimed at reducing parental stress would be helpful.

The lack of consistency across studies indicates that more research will be needed to examine the relationship
between marital adjustment and behavior problems of children. Future research should also attempt to include assessment of other possible stress factors which may inflate the importance of the relationship between marital adjustment and child behavior problems.

The cumulative effects of less catastrophic life event stress on children has not been researched; therefore, future research is needed to examine the cumulative effect of life event stress on child behavior. Future research should include information on potential mediators of stress such as personality characteristics of the child or social support systems. Future studies should also include information on the effects of life event stress on other family types.

Although the present research can only indicate relationships, future research using path analysis and longitudinal designs may permit a better understanding of the causal network and directionality of the relationships between family stress factors and behavior problems of children.
APPENDIX A

COUNSELING REFERRAL FORMS
Type or Print:  

Telephone  
(817) 788-2066  

Mailing Address:  
College of Education  
NTSU  
Denton, Texas 76203  

SCHOOL ASSESSMENT AND REFERRAL FOR INDIVIDUAL STUDY  

Date  

Name of Pupil  ___________________________  Birth Date  
Month  __________  Day  __________  Year  __________  

Father  ___________________________  Address  
Street or Box  
City  _______  State  _______  Zip  _______  

Mother  ___________________________  Address  
Street or Box  
City  _______  State  _______  Zip  _______  

Child Lives With  ___________________________  Telephone  
Home (AC)  (Number)  
Business (AC)  (Number)  
Street or Box  
City  _______  State  _______  Zip  _______  

School  ___________________________  Address  
Telephone  (AC)  (Number)  

Counselor  ___________________________  
Principal  ___________________________  Classroom Teacher  ___________________________  

Referred by: Please give names of all personnel involved:  
Teacher  ___________________________  Reading Clinic  ___________________________  
Special Ed.  ___________________________  Nurse  ___________________________  
Principal  ___________________________  Adm.  ___________________________  
Counselor  ___________________________  Other (specify)  ___________________________  

Referred for:  
Hearing  ______  Lack of Satisfactory  Academic Progress  ______  Behavior  ______  
Speech  ______  Reading  ______  Emotional  ______  
Other (specify)  ___________________________  

Hearing Screening  250  500  1000  2000  4000  Date

Check frequency at which no response was made.

Audiogram made?  Yes  No  Comment

2. School Data

Teacher Estimate of Level Achievement

(Grade Level)

Reading
Arithmetic
Spelling

Grades Repeated

Describe Child's Problem:

Authorization and Signatures: (Referral must be discussed with parent).

Who discussed referral with parent?

Public School approval and request for appraisal at Pupil Appraisal Center, and agreement to expedite transportation to Center.

Referral form completed by:  Signed  Date

School Administrator:  Signed  Date

Pupil Appraisal Center approval for entry into Center:

Director of Center:  Signed  Date
TEACHER OBSERVATIONS OF CHILD'S BEHAVIOR

Child's Name: ___________________________ Age: __________
School: ___________________________________ Grade ________
Teacher's Name ________________________________________

INSTRUCTIONS: Skip any you feel unable to judge. Check yes or no, or place a check at the point on the continuum that best describes the child, whichever is applicable.

If qualifying statements are required for clarification or substantiation, place the number and its respective comment in the space provided after each division.

I. ACADEMIC AND RELATED AREAS

1. Enjoys school
   Yes _____ No _____

2. Willing to try things that may be hard for him to do
   Yes _____ No _____

3. Curious, interested, willing to explore
   Yes _____ No _____

4. Gives up easily, falters at difficulty
   Yes _____ No _____
   a. If a child gives up, under what circumstances does it occur?
   _____________________________________________________________
   b. What is done about it? _______________________________________

5. Can express his ideas adequately for age
   V. Low  Low  Avg.  High  V. High

6. Capable of sustained attention and interest for age
   V. Low  Low  Avg.  High  V. High

7. Accomplishes things, gets things done
   V. Low  Low  Avg.  High  V. High

8. Does this child stand out (positively or negatively) in your group?
   Yes _____ No _____
   If yes, in what way? ___________________________________________
   _____________________________________________________________
### SCHOOL RECORD

<table>
<thead>
<tr>
<th>School</th>
<th>Dates Attended</th>
<th>Grades</th>
<th>Days Absent</th>
<th>Grade Average</th>
<th>Behavior</th>
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### Test Information:

Please record test scores (including all subtest scores) and other information on ALL tests that have been given to this student. (Attach second sheet if necessary).

<table>
<thead>
<tr>
<th>Tests</th>
<th>Date Administered</th>
<th>Results</th>
</tr>
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<tbody>
<tr>
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</tbody>
</table>
TEACHER OBSERVATIONS OF CHILD'S BEHAVIOR

| Child's Name: __________________________ | Age: ________ |
| School: _____________________________ | Grade ________ |

Teacher's Name __________________________

INSTRUCTIONS: Skip any you feel unable to judge. Check yes or no, or place a check at the point on the continuum that best describes the child, whichever is applicable.

If qualifying statements are required for clarification or substantiation, place the number and its respective comment in the space provided after each division.

1. ACADEMIC AND RELATED AREAS

1. Enjoys school
   - Yes ___ No ___

2. Willing to try things that may be hard for him to do
   - Yes ___ No ___

3. Curious, interested, willing to explore
   - Yes ___ No ___

4. Gives up easily, falters at difficulty
   - Yes ___ No ___
     a. If a child gives up, under what circumstances does it occur?

b. What is done about it?

5. Can express his ideas adequately for age
   - V. Low Low Avg. High V. High

6. Capable of sustained attention and interest for age
   - V. Low Low Avg. High V. High

7. Accomplishes things, gets things done
   - V. Low Low Avg. High V. High

8. Does this child stand out (positively or negatively) in your group?
   - Yes ___ No ___
     a. If yes, in what way?

91. Works independently, carries out assignments without supervision.

V. Low  |  Low  |  Avg.  |  High  |  V. High

a. If sometimes, what types of assignments can he carry out?

______________________________

b. What type can he not carry out?

______________________________

10. In what subject areas does the child do

a. Above average work?  

______________________________

b. Average?  

______________________________

c. Below average?  

______________________________

11. Flexible, handles new situations well, likes changes  

V. Low  |  Low  |  Avg.  |  High  |  V. High

** Elaborations and/or comments on ACADEMIC AND RELATED AREAS:

______________________________

11. RELATION TO OTHERS (SOCIAL)

1. Blames others or things for his troubles or his failure  

Yes _____  No _____

2. Submissive and unassertive; others can walk all over him  

Yes _____  No _____

a. If so, under what circumstances?  

______________________________

3. Patient, can wait his turn, delay gratification  

Yes _____  No _____

4. Shows concern for others, sympathetic  

Yes _____  No _____
7. Assumes group leadership for a given activity

| V.Low | Low | Avg. | High | V.High |

8. Makes friends quickly and easily

Yes [ ] No [ ]

9. Competitive, has a keen sense of rivalry

Yes [ ] No [ ]

10. Enthusiastic; easily excited to active, energetic participation

| V.Low | Low | Avg. | High | V.High |

a. What will especially "turn him on"?

11. How will he respond when criticized, blamed, or in some way assaulted?

**Elaborations and/or comments on RELATION TO OTHERS:**

III. PERSONAL

1. Responds positively to humorous situations

Yes [ ] No [ ]

2. Sensitive, feelings easily hurt

Yes [ ] No [ ]

3. Depressed, unhappy, glum

Yes [ ] No [ ]

4. Separate fantasy and reality

Yes [ ] No [ ]

5. Recovers after emotional upset; does not remain silent, sulky, irritable

Yes [ ] No [ ]

a. If he doesn't recover what does he do?

6. Complains of headaches, stomach aches, or other minor ailments

Yes [ ] No [ ]

7. Appears moody, displays nervous type habits

Yes [ ] No [ ]
a. What signs do you observe?

8. Accepts help when it is realistically needed
   Yes _____   No _____

9. If boy, acts masculine; if girl, feminine (according to ordinary standards)
   V.Low    Low    Avg    High    V.High

10. Behavior is within bounds of ordinary social stands (honesty, truthfulness)
    V.Low    Low    Avg    High    V.High

11. Exhibits inappropriate types of behavior or feelings
    V.Low    Low    Avg    High    V.High

**Elaborations and/or comments on PERSONAL AREA:**

IV. TEACHER (YOURSELF)

1. What are some of the behaviors specifically that this child engages in that are annoying to you or to the class?
   a. ____________________________
   b. ____________________________
   c. ____________________________

2. What happens when the child does these annoying things?

   ____________________________

   Then what happens (Child's reaction; class's reaction)?

   ____________________________
BACKGROUND INFORMATION

Date

It is the desire of our staff to have the most complete picture possible of our client in order to better understand the problem. This questionnaire will help you give us the information we need to be of as much assistance as possible.

Name of client

Date of birth

Sex of client

Male

Female

Age: years months

Race or nationality

White

Negro

Latin

Other: Explain

Present grade in school

Name of school

Father

Occupation

Employed by

Bus. Phone   (A.C.)

Mother

Occupation

Employed by

Bus. Phone   (A.C.)
Home Address ___________________________ Phone ___________________________ (A.C.)

City & Zip Code __________________________________________________________

List by name the members of your family in the order of their age, beginning with the oldest parent.

<table>
<thead>
<tr>
<th>Member</th>
<th>Age</th>
<th>Male or Female</th>
<th>Current grade in school or education completed</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

If client is a child, with whom does s/he live?

- Both biological parents
- Adoptive parents
- Mother and stepfather
- Mother only
- Father and stepmother
- Father only
- Relatives
- Welfare foster home
- Other (Explain): ___________________________
If client is a child, marital status of parents
___ Biological parents living together
___ Biological parents separated
___ Biological parents divorced
___ Father deceased
___ Mother deceased
___ Father remarried
___ Mother remarried
___ Other (Explain):

If parents have separated or divorced, when?

Did client attend a pre-school? ___ Yes ___ No
If Yes, for how long? __________ At what age? __________

Entered first grade at age____

Was client adopted? ___ Yes ___ No

Has s/he been told s/he was adopted? ___ Yes ___ No

At what age was s/he adopted? ___ years ___ months

Client was born after ____ months' pregnancy

Was the (number) ____ pregnancy

Was born in ____ home ____ hospital ____ clinic ____ other

Client's weight at birth: ___ lbs. ___ oz.

During the pregnancy, the mother's health was: ___ Good ___ Fair ___ Poor

Were there any health problems or diseases during pregnancy? ___ Yes ___ No
If so, describe: ____________________________________________

Client was born after labor lasting ____ hours.

Condition of delivery: ___ Fast ___ Moderate ___ Slow
Type of birth: __Normal __Breech __Caesarian __Instrument birth (forceps)

Did client have any problems at birth? ____Yes ____No

If Yes, describe: ____________________________________________________________

Doctor suggested taking special precautions or watching for:

___________________________________________________________

During client's early years, s/he had problems with:

Eating
____Yes Describe__________________________
____No

Sleeping
____Yes Describe__________________________
____No

Toilet Training
____Yes Describe__________________________
____No

Crying
____Yes Describe__________________________
____No

General Health
____Yes Describe__________________________
____No

Diseases
____Yes Describe__________________________
____No

Serious Injuries
____Yes Describe__________________________
____No
Client has been hospitalized

___ Yes  Describe

___ No

Age when hospitalized  Reason

Client sees doctor:  ___ At regular intervals each year

___ Irregularly, but at least once a year

___ Only when necessary

___ Seldom

___ Never

How long since last seen by doctor?

Is client presently taking medication? ___ Yes ___ No

Does client have a vision problem? ___ Yes ___ No

Does client often complain of eyes burning, hurting, or aching? ___ Yes ___ No

Does client wear glasses? ___ Yes ___ No

Does client have a hearing problem? ___ Yes ___ No

Does client have a hearing aid? ___ Yes ___ No

If Yes, does s/he wear it? ___ Yes ___ No

Might client benefit from a hearing aid according to doctor? ___ Yes ___ No

Does client have a speech problem? ___ Yes ___ No

If Yes, describe

Client's physical development was: ___ Normal ___ Rapid ___ Slow

Crawled at ___ months

Walked alone at ___ months

Began to talk at about ___ months

Began to feed self unassisted at about ___ months

Does client have convulsions or spells? ___ Yes ___ No
Has client had a neurological examination?  __Yes__ __No__

<table>
<thead>
<tr>
<th>NEUROLOGICAL EXAMINER</th>
<th>DATE</th>
<th>CITY &amp; STATE</th>
<th>FINDINGS</th>
<th>MEDICATION</th>
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Describe the problem client is having.

When did this problem begin?

How do you feel we can best be of service to client?

___ Testing  ___ Individual Counseling  ___ Family Counseling

___ Play Therapy  ___ Tutorial Reading Program

Other agencies which have seen client (such as counseling, remedial reading, speech, or testing centers).

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Date first seen</th>
<th>Date last seen</th>
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RELEASE OF INFORMATION

I hereby authorize the Pupil Appraisal Center to administer their standard block of tests in the areas of counseling, reading, and speech & hearing. I also give permission for the release of diagnostic information to the school attends.

(Name of client)

Signed: ____________________________

Relationship to client: ____________________________

Date: ____________________________
APPENDIX B

PERMISSION TO CONDUCT STUDY
December 3, 1985

To Whom It May Concern:

Verlene Springer has my permission to conduct the research for her study titled, "Family Stress Factors and Behavior Problems of Children" at the Pupil Appraisal Center.

[Signature]
Dr. JoAnna Strother, Director
Pupil Appraisal Center
Explanation of Study

Telephone Communication:

I am a doctoral student in the process of studying families and the many stress factors that families currently face. I am especially interested in finding out what mothers perceive as being the most stressful for themselves and their families.

Your participation in this study would help me to better understand families and the stress they face in daily living. If you agree to participate, the study will require approximately 1 hour of your time.

We will meet on _________________ at _______________ to complete questionnaires.
APPENDIX D

REMINDER OF MEETING
REMINDER OF MEETING

Dear ____________________,

Please remember the meeting at (time), (day), (date), at (location) for the purpose of collecting information concerning families and stress.

I look forward to seeing you and appreciate your willingness to participate in our effort to learn more about families.

Thank you,

Verlene Springer
APPENDIX E

DEMOGRAPHIC DATA SHEET
Please complete the following information:

1. Present Age of Child ____ Present Grade in School ____

2. Type of Family (please check one):

   ____ A. Biological family (family with both biological parents currently living together in a marriage relationship who have not been divorced or remarried since the birth of the child).

   ____ B. Stepfamily (family that has been expanded by the addition of a stepparent and/or stepchild/children in a remarriage relationship).

   ____ C. Adoptive family (family with both adoptive parents currently living together in a marriage relationship who have not been divorced or remarried since the adoption of the child).

3. Please list Ages of other children living in your home.

   ____ ______

   ____ ______

4. Present Age of Mother ____ Present Age of Father ____

5. Father's Occupation __________________________
   Mother's Occupation __________________________

6. Birth order of Mother:
In the family in which you were raised, were you:

   ____ Oldest Child

   ____ Middle Child (family of three children)

   ____ Youngest Child

   ____ Only Child

   ____ Other, please specify ______________________

7. Birth order of Father:
In the family in which you were raised, were you:

   ____ Oldest Child

   ____ Middle Child (family of three children)

   ____ Youngest Child

   ____ Only Child
APPENDIX F

NOTICE OF CONSENT
NOTICE OF CONSENT

I understand that I am participating in a research project and give my permission for the collection of information. I understand that this information is to remain confidential and will be used for no other reason than has been explained to me.

Name: ____________________________

Date: ____________________________
APPENDIX G

INSTRUCTIONS FOR COMPLETING QUESTIONNAIRES
Instructions for Completing Questionnaires

This envelope includes three instruments for you to complete. Your response will give us information about the types of stress being experienced by you and your family. There are no right or wrong answers. We are only interested in your feelings and perceptions. Each questionnaire includes a test administration booklet and answer sheet. If you have questions, please ask me.

PLEASE BE SURE TO:

1. Fill out all answer sheets completely.
2. Complete all three questionnaires.
3. Complete the short information sheet about your family.
4. Place all answer sheets, test booklets, and information sheet back in the envelope.
5. Return the envelope to the investigator.

If you wish to receive an abstract of the completed study, please place your name and address on the 3x5 card provided and return it to the investigator.


