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FAMILY FACTORS OF RESILIENT AND
NON-RESILIENT CHILDREN

A Dissertation
Presented to
The School of Graduate Studies
Department of Counseling
Indiana State University
Terre Haute, Indiana

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
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August 1993

Roger Duane Williams 1993
APPROVAL SHEET

The dissertation of Roger Duane Williams, Contribution to the School of Graduate Studies, Indiana State University, Series III, Number 556, under the title Family Factors of Resilient and Non-resilient Children is approved as partial fulfillment of the requirements for the Doctor of Philosophy Degree.

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For the School of Graduate Studies

Thesis
Ser. III
No. 556

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ABSTRACT

The focus of this study was to determine if resilient and non-resilient children could be differentially described by a subset of the following variables: parental attitude toward education, sibling order, siblings who dropped out of school, family composition, parental divorce or separation, familial drug or alcohol abuse, and physical or sexual abuse.

The sample of fourth, seventh, and tenth grade at-risk children was selected from data provided by Phi Delta Kappa. Of this sample, 102 were determined to be resilient and 258 were determined to be non-resilient.

The null hypothesis was tested by a stepwise discriminant analysis. Tests of significance were computed, ascertaining the most parsimonious subset of discriminating variables. Tests of classification accuracy and total variance explained in the dependent variables were conducted.

The criterion groups were significantly differentiated by four of the seven predictor variables. The families of resilient children were found to have a positive parental attitude toward school, higher incidences of divorce or separation within the past year, more problems with alcohol or drug use, and to be headed by a single parent. The variable contributing the most to the separation of the resilient and non-resilient groups was parental attitude.
toward education. Those variables that did not contribute to group differences were sibling order, physical or sexual abuse, and sibling drop outs.

Conclusions drawn from the findings of the study suggested the moderating effects of parental attitude toward schooling. In particular, the protective effect of positive attitudes toward assistance providers and taking assertive action to resolve difficulties was indicated. Proactive efforts that involve the families of at-risk children was determined to be important as risk appears to increase over time. In addition, the importance of training psychologists in family-oriented theories and intervention techniques was proposed.
ACKNOWLEDGEMENTS

I would like to acknowledge the generous contribution of Phi Delta Kappa, as this study would not have been possible without the use of their data. I wish to express my gratitude to the members of my committee: Dr. Reece Chaney, Dr. Michele C. Boyer, Dr. Richard L. Antes, Dr. C. Lawrence Beymer, Dr. Elizabeth A. Schilson, and Dr. Frank W. Jerse. The patient assistance of Carol Walker and the friendship of Scott Mooney was extremely valuable to me.

I would like to dedicate this study and what it represents to my family. To Erin, my wife and friend, words cannot express my appreciation and love. To my precious children, Meredith and Trevor, I thank you for your constant reminder of what is important in life. For my parents, Roger and Deloris, who never doubted and my sister, Judy, who never gave up hope. To my grandparents, who gave me a sense of belonging. To Dick and Koki Maloney, who taught me to believe in dreams.
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Chapter 1

INTRODUCTION

A historical tradition of counseling psychologists has been an emphasis upon so-called normal people, who for one reason or another have developed difficulties that hinder them from participating fully in society. According to Woody, Hansen, and Rossberg (1989), a recent trend among counseling psychologists has been to concern themselves with the interactions among family members, work settings, and educational concerns. Even though counseling psychologists are becoming increasingly involved with applied areas, much of the research and intervention strategies have been focused on dysfunction and pathology. In a review of the resilience literature, Williams and Mooney (1991) concluded that counseling psychologists need to lead the way in the identification and implementation of scientific and preventative strategies that will enhance the tenuous nature of resiliency in at-risk children. Unfortunately, valuable prevention oriented approaches have been neglected.

McClellan and Trupin (1989) reported that despite the inclusion of prevention issues in the Community Mental Health Centers Act of 1963, proactive efforts have suffered
from inadequate funding, uncoordinated services, and a lack of program development. The current pediatric mental health system remains focused on crisis management; thus, at-risk children may not receive needed services because they are not presently exhibiting severe levels of dysfunction. As a result of these issues, McClellan and Trupin (1989) maintained that the current system is desperately in need of reorganization towards prevention.

Williams and Mooney (1991) cited Edward Jenner (1749-1843) as a good example for counseling psychology in the study of healthy individuals. Jenner began a seminal prevention oriented empirical inquiry by focusing upon those individuals who were not suffering from smallpox. His approach heralded the importance of studying healthy, or resilient, subjects to determine what variables contributed to their ability to survive conditions that adversely affected others.

Research concerning resilience provides an excellent example of the psychological counterpart to Jenner's work; thereby, providing an important opportunity to confront the lack of prevention oriented research and interventions. For example, Rutter (1987) suggested that a return to prevention may be accomplished by examining the reasons why some children are not damaged by deprivation. The present study and a companion study, "A Discrimination Between Resilient and Non-resilient Children in Terms of Social Learning Factors" (Mooney, 1992), were conducted to investigate the
differential characteristics of at-risk children.

Purpose of the Study

The purpose of this study was to determine if a subset of variables could discriminate between factors related to the families of resilient and non-resilient children. More specifically, could the dependent variables of resiliency and non-resiliency be predicted by the independent variables of family composition, sibling order, parental divorce or separation, physical or sexual abuse, siblings who dropped out of school, parental attitude toward school, and familial drug or alcohol abuse taken in combination. The present study served an exploratory and descriptive function in the determination of factors attributable to the family environment of resilient children. The study was also an inquiry into the question of whether it was possible to select from a data pool those factors that allow the discrimination of resilient from non-resilient children.

To answer these questions, further investigation of the data collected by Phi Delta Kappa (Frymier, 1989) was undertaken to derive an operational definition of resilience. Antes and Mazely-Allen (1989) identified children in the data base who revealed evidence of being significantly at-risk. The data also revealed that some of the at-risk children in Phi Delta Kappa's study demonstrated evidence of reading comprehension, positive attitude toward school, and above average school performance. It was posited, therefore, that these academically competent at-
risk children were resilient. Since the data base provided by Phi Delta Kappa (PDK) contained the appropriate variables to make an operational definition of resilience, it was used to study relevant variables indicated by the literature to be supportive of resilience.

This study diverged from PDK's study because PDK sought to identify students collected from a national sample who were at-risk for failing school and, eventually, life in general (Nardini & Antes, 1991). The purpose of the present study was to determine if there were resilient children among the larger sample of at-risk children and to determine how those resilient children differ from those who were becoming casualties of their at-risk state. To accomplish this goal, the variables empirically associated with resiliency of children were delineated into intraindividual and extraindividual factors (Williams & Mooney, 1991).

Intraindividual factors were those specifically related to personality and one's phenomenological perspective. Studies reporting data concerning these factors typically addressed issues such as disposition (Moskovitz, 1985; Rutter, 1985), attribution of meaning (Bowlby, 1988; Werner, 1984), internal locus-of-control (Garmezy & Nuechterlein, 1972; Roos & Cohen, 1987), and androgyny (Roos & Cohen, 1987, Werner & Smith, 1982). Research data concerning extraindividual factors, typically related to factors in the environment, have also been reported. These factors include supportive relationships and family characteristics.
(Garmezy, Masten, & Tellegen, 1984; Roos & Cohen, 1987; Rutter, 1985, Werner & Smith, 1982). Since the focus of this study was the latter perspective, factors empirically associated with resiliency external to the individual child were investigated.

As noted by Cowen and Work (1988), a proximal goal inherent in studying resilient children would be the development of a more complete understanding of protective factors, while a more distal goal would be the construction of proactive prevention and treatment interventions. The importance of studying environmental factors associated with family relationships is directly related to prevention and treatment efforts. Without a clear distinction between factors empirically associated with resilient and non-resilient children, proactive approaches to tilt the balance in favor of adjustment cannot be effectively designed. This study was an attempt to resolve a portion of the difficulties encountered when generalizing data reported in previous studies of resiliency.

Statement of the Problem

Resilient children and their families afford psychology with an important avenue for studying the factors that contribute to applying the concept of prevention. Because psychology has tended to focus heavily upon maladjustment, the subjects of study have typically been the victims of life events, such as poverty or abuse. This focus on maladjustment has been an unfortunate trend since much can
be learned from investigating those able to succeed in the face of adversity. Consequently, research that included assessment of relative weaknesses as well as strengths would provide original data needed for the conceptualization of children and their families. Studying healthy individuals and families to enhance proactive approaches has not been a novel notion for many counseling psychologists who hold this admonition as their creed; however, it is a rather bold notion for the current psychological community involved in practice and scientific inquiry.

Although critical reviews of the resilience literature have been provided by Rutter (1985), Werner (1984), McClellan and Trupin (1989), Richmond and Beardslee (1988), and Cowen and Work (1988), the usefulness of the literature in resilience has been limited by a failure to adopt a consensus regarding terminology, empirical definitions, and factors associated with resiliency. These limitations fail to provide the clarity necessary for additional research and practice, which has resulted in a fairly narrow scope of inquiry.

Definitions employed in research concerning resilient children have varied widely. In addition, theoretical issues have either been largely overlooked or not carefully investigated. Cowen and Work (1988) stated that "presently, [resiliency] rests on a base of observational data and a small number of empirical studies" (p. 592). The following discussion reviews past efforts to resolve these
inadequacies. The discussion provided the premises on which the operational definitions advanced for use in the present study were based.

An exception to the theoretical dearth was the approach promulgated by Cowen and Work (1988) which utilized social learning theory to address the issues inherent in the acquisition of resiliency. The social learning approach has also been applied to the intraindividual factors associated with resiliency (Williams & Mooney, 1991). The present study integrated the theoretical approaches of family theories to address the extraindividual factors posited by the literature. Although social learning theory has application to extraindividual factors, social learning played only a minor role in the theoretical conception of this study.

Reviews of the resilience literature have indicated the paucity of quality research, consistent operational definitions, and cross-sectional samples (Luther & Zigler, 1991; Williams & Mooney, 1991). The construct of resiliency, in particular, has been unclear. For this study, Rutter's (1985) conceptualization of resilience as a state rather than a trait was employed. The trait approach to resilience implies that a particular person or group under no circumstances or duress exhibits difficulty or maladjustment. In contrast, accepting a state approach fulfills Luther and Zigler's (1991) admonition to consider that the emotional cost of adjustment must be included in a
useful definition of resilience. Consequently, a definition implying a state approach to resilience would require the inclusion of evidence that the child had experienced multiple stressors of marked gravity and had shown superior adjustment and adaptive capacities (Cowen & Work, 1988). In the present study, resiliency was theoretically defined as the ability of the individual to adapt and adjust in a healthful manner to stressful life events, environmental hazards, psychological injury, and the potentiating effects of these factors in combination, regardless of their magnitude.

It seemed plausible that the identification of factors related to the resilience of children allowed for the propagation of research and the conduct of effective practice. It was hypothesized that once a clearer delineation of the factors associated with resilience was promulgated, one could intervene in any child's life in an attempt to reverse a negative trend. By increasing a general awareness of the aforementioned items, Werner (1984) proposed that the scale can be tilted toward resiliency and away from vulnerability.

After reviewing studies related to resiliency, Garmezy and Masten (1986) posited that among the protective factors was the positive impact of "family cohesion and warmth and an absence of familial discord and neglect" (p. 511). In addition, they hypothesized that "the availability and utilization by parent and child of external support
resources" (p. 511) may also contribute to resilience. Garmezy and Masten, however, called for a greater specification of these reported attributes and their contribution to the understanding of resiliency. Furthermore, careful and detailed inquiry of adaptive and maladaptive individuals and families were deemed necessary goals of future research efforts; thus, a systemic examination of the personality dispositions and familial attributes of resilient and non-resilient children was encouraged.

Rutter (1979, 1985, 1987) also contributed to the positing of vulnerability factors associated with familial environment. Rutter indicated that the lack of support in familial relationships could be conceptualized as a vulnerability factor. Exposure to marked family discord was reported to increase risk for maladaptiveness in children, particularly males. According to Rutter, sequelae of family breakdown included parental withdrawal, parental fighting in the presence of children, increased negative behavior in children, and an increased likelihood of placement of children in institutional care.

In contrast, data were also reported that indicated a relationship between a good parent-child relationship and reduction of psychiatric risk. Even though Rutter reported that factors which contribute to a good familial environment are not known, a positive relationship was observed to exist between good parent-child relationships, lack of parental
marital discord, good parenting skills, and adaptive functioning of children. The role of familial factors was further implicated by Block's (1981) study of ego-resilient and ego-brittle children when he reported that ego-resilience was compromised by family environments with characteristics of discord and conflict. Conversely, ego-resilience was enhanced by patient, integrated, loving, and competent parenting relationships.

In Werner and Smith's (1982) 30-year longitudinal study of 700 children born on the Island of Kauai, one of the three clusters of protective factors was a supportive and warm family environment. Despite the identification of family environment as a protective factor, its function in relation to the factors of disposition and utilization of extrafamilial support and positive role models varied. Specifically, predictors of resilience during childhood included the presence of alternative caregiving roles by the parents. During adolescence, the children's perceived quality of the relationship with their family was associated with resilience.

Other factors relevant to the explication of the family environment involved family constellation. According to Shulman and Mosak (1988), each child has been born or placed into a family environment involving factors, such as ordinal position, characteristics of other members, values, and emotional atmosphere of the family. These family factors exerted influence on the development of the child through
modeling guidelines. Since the family has been posited to
be the primary socialization agent of the child (Manaster &
Corsini, 1982), family constellation has been identified as
an important formative influence on the child (Shulman &
Mosak, 1988).

In sum, a review of the resilience and at-risk
literature indicated the importance of studying the
variables residing in the environment of the family. These
family variables were as follows: family composition,
sibling order, parental divorce or separation, physical or
sexual abuse, siblings who dropped out of school, parental
attitude toward education, and familial drug or alcohol
abuse.

Delimitations

The delimitations of this study related primarily to
the sample.

1. Because this study included only fourth, seventh,
and tenth grade students, care must be exercised when
applying the results and conclusions to students from other
age groups.

2. Since all participants selected for this study
participated on a voluntary basis, the range of subjects was
limited with concomitant generalization limitations.

3. Only children from traditional schools were
included; students possessing learning disabilities,
intellectual impairment, or severe emotional handicaps that
prevent them from attending the aforementioned schools were
excluded from this study.

4. Schools selected for inclusion in this study necessarily limited the sample parameters; consequently, application of data yielded by the present study was limited to other communities of similar size, ethnic composition, economic strata, and geographic restrictions.

5. In selecting the independent variables for this study, other possibly significant variables were excluded from the scope of this study.

Definition of Terms

To facilitate a clearer understanding of the various terms to be utilized in this investigation, operational definitions are presented below. In addition to definitions of at-risk, resilient, and non-resilient children, variables selected for the evaluation of the extraintindividual environment will be explicated.

At-risk Children. Students were considered to be at-risk if they receive a score of 14 or above on the "At-Risk Scale" (Antes & Mazely-Allen, 1989).

Resilient Children. Resilient children were those who were determined to be at-risk and were demonstrating competence in the scholastic environment as evidenced by the following: average grade for last year was a B or above, rated as possessing a positive or very positive self-esteem, and received above the 60th percentile on a norm-referenced standardized achievement test in reading.

Non-resilient children. Non-resilient children were
those who were determined to have been at-risk and were not demonstrating competence in the scholastic environment as evidenced by the following: average grade for last year was a D or below, rated as possessing a negative or very negative self-esteem, and received at or below the 40th percentile on a norm-referenced standardized achievement test in Reading.

The variables derived from the "At Risk Scale" (Antes & Mazely-Allen, 1989) questionnaire addressed the environment of the student's family with regard to family composition, sibling order, parental divorce or separation, physical or sexual abuse, siblings who dropped out of school, parental attitude toward education, and familial drug or alcohol abuse. These variables were defined as follows (Antes & Mazely-Allen, 1989):

**Family composition.** Family composition was defined as the following: biological mother, biological father; biological mother, stepfather; stepmother, biological father; biological mother only; biological father only; extended family; foster parents, or institution.

**Sibling order.** Position in the family: only child, eldest, middle, or youngest.

**Parental divorce or separation.** Observation or student's report of parental divorce or separation during the past year.

**Physical or sexual abuse.** Observation of evidence that the student was abused, sexually or physically, during the
past year.

**Siblings who dropped out of school.** Number of siblings who dropped out of school according to school records: none, one, two, three, four or more.

**Parental attitude toward education.** Rating of observed parental attitude toward education: very negative, negative, neutral, positive, or very positive.

**Familial drug or alcohol abuse.** Observation of evidence that either parent drank excessively or was an alcoholic; or that a parental family member used drugs during the past year.

**Assumptions**

Assumptions implicit in this study included the following:

1. The participants adopted a candid approach to the measure employed in this study and inter-rater agreement was achieved.

2. The variables derived from the selected measure accurately reflected the independent variables.

3. The Phi Delta Kappa research committee members identified representative schools from the selected geographical areas and school officials identified typical students.

4. The participants complied with the guidelines for student selection and data collection in accordance with training sessions and the Manual of Instructions provided by Phi Delta Kappa.
Organization of the Remainder of the Dissertation

Chapter 2 is a review of related research concerning at-risk children, the construct of resiliency, and intraindividual and extraindividual factors of resilience. Chapter 3 is a description of the research methods, the instrument used, data collection, and data analysis. In Chapter 4, the results of the study are presented and discussed. A synopsis of the research, conclusions, implications, and recommendations for further research based on the findings are contained in Chapter 5.
Chapter 2

RELATED RESEARCH

The issue of resilient children has received considerable attention in the literature. Despite the popularity of the topic, significant concerns remain extant. Among those concerns are factors that relate to the child's ability to adapt and develop normally despite the impact of significant stressors. Recent reviews of the literature and empirical studies have focused on protective and risk factors. The importance of familial factors has also been indicated by recent research (Luthar & Zigler, 1991). As a result, the following review surveys, classifies, conceptualizes, and integrates the pertinent at-risk and resilience literature.

The Construct of At-Risk

A considerable amount of controversy has surrounded the construct of vulnerability or at-risk. In particular, the difficulties have been primarily related to specification of the factors that place children at-risk to develop psychopathology, academic difficulties, and failure in life. There has been a fair amount of agreement that failure in school, parental psychopathology, family discord, attachment
difficulties, parental alcoholism, illness, gender, sibling position, age, intelligence, coping strategies, low socioeconomic status, family size, and the child's temperamental characteristics contribute to vulnerability (Jensen, Bloedau, Degroot, Ussery, & Davis, 1990).

Risk for a child has been frequently defined on the basis of having a parent with a major psychiatric disorder (Jensen et al., 1990; Williams, Anderson, McGee, & Silva, 1990). In contrast, Worland, Weeks, Janes, and Stock (1984) reported the deleterious effect of parental psychopathology was mediated by the child's intelligence and academic competence. Risk has also been determined on the basis of being an ethnic minority, economically disadvantaged, or environmentally deprived (Horacek, Ramey, Campbell, Hoffmann, & Fletcher, 1987). The concept of at-risk has typically been defined by the capricious notion of the researcher determining which factors constitute a child being at-risk. As a result, the studies extant have either examined only one of these variables or a collection of them in concert.

Conceptual definitions of at-risk children have been faulted for a failure to account for significant interactions of a multiplicity of stressors and protective factors (Worland et. al, 1984). The conceptual definition advanced for the purposes of the present study included children who had been subjected to multiple sources of risk. Furthermore, only the variables supported by the literature
that were believed to contribute to increasing vulnerability in children were employed in the present study.

At-Risk Literature

The extant literature considering children who were determined to be at-risk contains a very similar focus to the resilience literature. Despite the similarity of emphasis placed on vulnerability and risk factors, the at-risk literature adds a dimension to the focus of the present research which was not derived from the resilience literature. Consequently, the following review considered factors, concepts, and variables germane to the present study.

Gurney (1987) reviewed investigations concerning the role of self-esteem. He reported that there was empirical evidence to support a positive association of self-esteem with academic achievement. Improvement in reading skill was also associated with increased levels of self-esteem. Additional contributions to enhancing self-esteem were programs aimed at fostering communication, cohesion, and solidarity in parent-child interactions. In each of these self-esteem studies was the significant correlation of positive adult comment on the child's adaptive behavior. Gurney concluded his review by reaffirming the importance of the relationship between self-esteem and academic progress and increasing positively connoted teacher-pupil and parent-child interactions.

Studies addressing the relationship of intelligence,
academic achievement, and classroom behavior to being at-risk have been conducted (Worland et. al, 1984). A sample of 158 children divided into a high risk (severe parental psychopathology) or moderate risk (moderate parental psychopathology) was employed. Data were collected by conducting measures of intelligence (WISC-R or WAIS-R), classroom behavior (Pupil Rating Form), and academic achievement (Wide Range Achievement Test). The direction of the relationships suggested that the behavior exhibited in school was the result of academic achievement rather than a cause of academic achievement. Parental psychiatric disorder was shown to affect the child's behavior; however, the effect of the disorder was mediated by both the child's intelligence and academic achievement. Consequently, it appeared that vulnerable individuals tend to have cognitive disturbances, school achievement problems, lower attendance, academic failure, and poor grades. In conclusion, the authors suggested that behavior problems were the consequence of academic achievement difficulties, and the effect of parental psychopathology was mediated by the child's intelligence and academic achievement.

Horacek et. al (1987) addressed two major issues in their study of high-risk children: identification before birth of at-risk children and the effectiveness of educational intervention to decrease the effect of the at-risk status on school performance. Using a control group treatment design, high-risk children benefitted from early
intervention in regard to math and reading achievement, while later intervention minimally impacted the same outcome indices. The investigators indicated some success in identifying at-risk children before birth; however, the findings were highly biased in regard to race and economic characteristics. Additionally, the authors suggested that a blend of cognitive factors, adaptive behaviors, attitudes, intellectual ability, achievement, motivation, interpersonal skills, peer relationships, and attitude toward authority play a part in overcoming vulnerability. Neither the combination of the aforementioned attributes nor the strengths that help children achieve despite being at-risk were determined.

In order to study the proposed link between the quality of peer acceptance, social behavior, and long-term adjustment, Ollendick, Greene, Weist, and Oswald (1990) looked at 225 children involved in the Social Competence Project. Fourth grade teachers nominated two male and two female children who met global criteria for aggressive, withdrawn, or well-adjusted behavior. At the five year follow-up, school records, court records, teacher-reported problems, peer nominations of social behavior, and peer nominations and ratings of acceptance were collected. Compared to well-adjusted children, the aggressive students were characterized by received lower grades, low achievement, low ability scores, experienced more failure, tended to drop out of school, and tended to be involved in
more crimes. In addition, they were viewed by their peers as aggressive and less likeable. The withdrawn and aggressive children, however, did not differ on measures of scholastic aptitude and achievement, grades, or overall peer acceptance. The authors concluded that teacher nominations were useful in identifying socially aggressive and withdrawn children who differed from well-adjusted children on measures of sociometric status, social behavior, and psychological characteristics. Of additional importance were the findings that well-adjusted children differed significantly from poorly adjusted children with regard to risk for failure of long-term adjustment.

Velez, Johnson, and Cohen (1989) conducted a two-year and eight-year longitudinal analysis concerning risk factors and prevalence of psychiatric diagnosis. The study used a random sample selected from the New York Child Longitudinal Study which was consisted of 776 children and their families. Data were collected from a structured interview conducted with the child's mother and instruments designed to produce DSM-III-R diagnosis. The short-term analysis revealed risk for diagnosis of conduct disorder (CDD) and oppositional disorder (OPP) to be related to household headed by mothers. The presence of a stepfather tended to increase risk for attention deficient disorders (ADD) and major depression disorders (MDD). In addition, sociopathy in the family increased risk for CDD, ADD, OPP, MDD, and over-anxious disorders (OVA). Children who reported seven
or more stressful life events during the previous years were nearly three times as likely to be diagnosed CDD and twice as likely to suffer from ADD and OPP. Among the most significant life events associated with receiving a diagnosis were problems at school or work, legal difficulties, and serious fights within the family. The long-term analysis confirmed that family structure was a risk factor associated with CDD and OPP. Parental sociopathy measured as drug, alcohol, or criminal problems was a significant risk factor for CDD and OPP. Evidence of parental pregnancy problems was a risk factor for all the diagnosis considered.

Risk factors for behavioral and emotional disorder in preadolescent children have been studied by Williams, Anderson, McGee, and Silva (1990). The results of this study indicated that it was possible to distinguish between children with and without behavioral and emotional disorder. Having a mother who had a history of depression and being a male was associated with disorder. Reading difficulties, single motherhood, and marital changes were also found to be risk factors and predictive of disorder. Williams et al. (1990) concluded that it was likely that the number of risk factors rather than the particular risk factors were the most predictive of psychiatric disorder in preadolescent children.

Stiffman, Jung, and Feldman (1986) evaluated the environment, behavior, and skills of 306 children with
mentally ill parents. Their analysis indicated that invulnerability to risk is determined by the balance between positive and negative factors residing in the social environment. Consequently, the proportion of mentally ill family members, familial relationships, and academic competence determined the child's behavior. In addition, those children who possess greater coping skills, as evidenced by competence in activities and school, revealed fewer behavior problems. According to the authors, these findings clearly indicated that competence interacts with environmental factors in determining risk.

Fergusson, Horwood, and Lawton (1990) addressed the vulnerability specifically related to family social background. According to these authors, the associations between social background and childhood problems tended to be rather weak. The associations, however, have pervasive and wide-ranging effects on conditions related to health, social, educational, and behavioral problems. Following analysis of data collected from 1265 children and their families involved in the longitudinal Christchurch Child Development Study, support was demonstrated for the authors' initial position. In particular, risks of childhood problems vary with social strata membership such that disadvantaged families revealed greater vulnerability.

The authors, therefore, concluded that social factors act as strong determinants of the child's general level of vulnerability to problems, despite the weak relationship of
these factors to specific outcomes. Family economic, material, social, emotional, and child-rearing practices were posited as vulnerability processes effected by social background. This relationship was proposed as an explanation of the relatively higher incidence of health problems, educational failure, conduct disorder, and juvenile offending found among children of disadvantaged families.

Another investigation addressing significant family determinants of at-risk children was the study conducted by Jensen, Bloedau, Degroot, Ussery, and Davis (1990). Using a sample of 134 children ranging in age from six to twelve years, a clinical sample was compared to controls. In regard to family size and sibling position, oldest children with smaller families were generally related to clinical group membership. Marital problems and divorce were significant predictors of group membership. Parental psychopathology, particularly maternal, was an important risk factor as was stressful life events. In a companion study (Jensen, Bloedau, & Davis, 1990), the child's psychiatric symptom levels were not sufficient to understanding clinic utilization. Consequently, the aforementioned risk factors were useful in conceptualizing the reasons why children used mental health services.

Tharinger and Koranek (1988) have conducted an exhaustive review of literature discussing parental alcohol use and its risk inducing effects on children. They noted
that parental alcoholism should be considered a form of psychological maltreatment of children. They further posited that children of alcoholics have been subjected to unhealthy patterns of familial relationships, interpersonal relationships, and emotional development. Parental drinking, consequently, has been the central influence on the child's psychological development.

General effects on the family included alcoholism's role as an organizing factor in the family system, parentification of children, and scapegoating of children. The results of these effects have been observed to be physical and emotional problems, conduct disorders, school problems, hyperactivity, delinquency, and dysfunctional drinking behavior. Self-esteem and future relationships are also adversely impacted by these effects of parental alcoholism. Those children who were able to overcome such risk have been noted to succeed at school, secure employment, have a fulfilling social life, and possess realistic goals and expectations. The relative balance of parental alcoholism, the accumulation of stressful life events, and protective factors within the children and their environment weighed heavily in the prediction of adaptive or maladaptive outcomes. Despite these findings, children of alcoholics were four to six times more likely than children of nonalcoholics to develop alcoholism.

The Construct of Resiliency

Rutter (1985), Werner (1984), McClellan and Trupin
(1989), Richmond and Beardslee (1988), and Cowen and Work (1988) have provided excellent reviews of the resilience literature. Despite the comprehensiveness of their efforts, the usefulness of the literature on resilience has suffered from several limitations. There has been a failure to adopt a consensus in terminology, operational definitions, and factors associated with resiliency. These limitations have failed to provide sufficient clarity for either the propagation of research or the conduct of effective prevention oriented practice. In this chapter, an attempt was made to address the issues facing one particular group of resilient individuals, specifically resilient children.

Although other labels have been employed, the construct of resiliency has been utilized to address a number of different studies. Resiliency implies the ability to endure, develop, and succeed despite the impact of stressors (Richmond & Beardslee, 1988). Cowen and Work (1988) described the gravity of this impact by stating that resilient children were being reared in a society marked by chronic buffetings in the form of environmental and familial stressors. The term chosen to refer to the survivors of this devastating mire, therefore, requires careful consideration.

Kauffman et al. (1979) referred to these children as superkids; however, the title is likely to encourage unrealistic images and does not reflect a readily definable concept. In addition, the all encompassing notion of coping
suffers from a failure to specifically connote positive outcome. As recognized by Compas (1987), "coping is not limited to successful efforts but includes all purposeful attempts to manage stress regardless of their effectiveness" (p. 394). This stated limitation has not minimized the significant contribution of the work of Compas in identifying a significant component of resilience. However, a recognition of the potential danger of broad interpretations inherent in employing coping as the subsuming force in the resilience phenomena has been critical. Coping should be considered an integral part of resilience, as it is neither a synonymous nor a separate concept.

According to Rutter (1985), the popular concept of invulnerability needs to be discarded because there has been a failure to recognize the relative, variable nature of resilience. It has also failed to recognize that the basis of resistance was environmental as well as constitutional. Likewise, Werner and Smith (1982) labeled their resilient subjects vulnerable, but invincible. Although an inspiring phrase, it perpetuates the notion of an absolute trait. In contrast, Rutter (1985) posited that resilience refers to individual variations in response to risk and should not be conceptualized as a fixed attribute.

Central to the purpose of addressing resilience as a state rather than a trait was the inherent danger of labeling a person or a population as resilient. To do so
implied that a particular person or group will not, under any circumstance or duress, exhibit difficulty or maladjustment. To the contrary, Luthar and Zigler (1991) have presented the position that the lack of overt symptoms does not preclude the existence of internalized symptoms such as depression. Consequently, a significant oversight of the trait approach to resilience has been the failure to recognize that resiliency was achieved at some emotional cost to the at-risk child.

Cowen and Work (1988) stated that "presently, [resiliency] rests on a base of observational data and a small number of empirical studies" (p. 592). What has been lacking in the literature was a consistent definition of resiliency. These authors discussed the concept of stressors impinging upon the individual along the lines of a continuum. One end of the continuum was labeled acute, with a single event serving as a significant stressor capable of being long-lasting (such as parental divorce, death of a close family member, illness); the other end consisted of a multiplicity of stressors concomitantly impinging upon the individual, such as chronic familial discord, poverty, or concentration camp experience. It was recommended, therefore, that a clear operational definition of resiliency be adopted in terms of this continuum. Such a definition would include "strong evidence that the child has indeed experienced multiple early stressors of marked gravity and shown superior adjustment and adaptive capacities in later
The construct of resiliency was theoretically defined for this study as the ability of the individual to adapt and adjust in a healthful manner to stressful life events, environmental hazards, psychological injury, and the potentiating effects of these factors in combination, regardless of their magnitude. Rather than a trait of mere survival, a continuum has been proposed which was marked by varying levels of the construct of resilience residing in all children.

Provided with this conceptual understanding of resilience, one can then meaningfully integrate the research concerning vulnerability (Murphy & Moriarty, 1976), risk variables (Rutter, 1985), protective factors (Garmezy, 1986), coping mechanisms (Compas, 1987), and stress buffers (Roos & Cohen, 1987).

Resilience Literature

A review of the literature indicated that the variables empirically associated with resiliency may be delineated into two perspectives of the resilient individual: intraindividual and extraindividual. The distinction between intraindividual and environmental influences has not been novel. Bowlby (1988) presented a similar dichotomy in his discussion of continuity verses discontinuity. Bowlby's definition of continuity involved the personality and phenomenological perspective: "There is a powerful influence of the individual's existing internal world on how
he or she construes and responds" (p. 6). In contrast, a behavioral emphasis contingent upon the environment was apparent from his definition of discontinuity: "how an individual's performance can change given changed conditions of life" (p. 6). Consequently, "adaptive coping cannot be characterized by a description of the individual's skills or resources alone, but instead lies in the relation between the child and the environment" (Compas, 1987, p. 394).

**Intraindividual Perspectives**

Studies in which the intraindividual characteristics of resilient individuals have been investigated can be categorized by consideration of the resilient individual's disposition, social skills, perceptions of meaning, perceptions of self, coping skills, locus of control, and androgyny.

With respect to dispositional traits, resilient children have been observed to possess a generally positive mood (McClellan & Trupin, 1989), a sense of humor (Rutter, 1985), and an autonomous nature (Murphy & Moriarty, 1976; Werner & Smith, 1982). They also revealed flexibility in responses (McClellan & Trupin, 1989), impulse control (Garmezy & Nuechterlein, 1972; McClellan & Trupin, 1989), and general adaptability to the environment (Moskovitz, 1985). In addition, the resilient child characteristically possessed strong interpersonal skills (McClellan & Trupin, 1989) and a strong social orientation (Block, 1981, Murphy & Moriarty, 1976). For example, the resilient child
demonstrated an assertiveness that does not overtax the resources of the caretakers, therefore resulting in receiving favorable attention (Moskovitz, 1985). It has also been reported that even though resilient adolescents fall within the average range of intelligence, they have better verbal communication skills than do non-resilient adolescents (Werner & Smith, 1982).

Furthermore, the meaning at-risk children attribute to their situation has been hypothesized to be associated with resiliency. Specifically, does the child see life "either as mostly enjoyable and to be lived to the full or else as a burden to be endured?" (Bowlby, 1988, p. 6). As noted by Rutter (1985), "It is certainly striking how very differently people respond to what is apparently the same situation" (p. 607).

Self-perception has also been researched as a factor contributing to resiliency. Resilient children have been identified as having higher self-esteem (McClellan & Trupin, 1989; Rutter, 1987) and higher self-efficacy (Rutter, 1987) as compared to non-resilient children.

Another intrapersonal domain involved at-risk children's coping strategies (Compas, 1987). In this area, it has been hypothesized by Rutter (1985) that "what is important may not be so much the specific method of coping than the existence of a coping process at all" (p. 607). Rutter posited that coping learned from parents was general in nature, rather than specific, such as how to tolerate
frustration without becoming aggressive. Another form of a coping strategy involved the resilient child's ability to emotionally distance from stressful situations (Rutter, 1987). The finding that resilient children tended to have hobbies in which they became absorbed (Werner, 1984) was associated with this emotional distancing. A final coping strategy which was prevalent in resilient children was the ability to delay gratification and to maintain a future orientation (Garmezy & Nuechterlein, 1972).

An internally oriented locus-of-control has been reported to act as a stress buffer for the resilient child (Garmezy & Nuechterlein, 1972; McClellan & Trupin, 1989; Roos & Cohen, 1987). Werner and Smith (1982) concluded that resilience was associated with internal scores on the Nowicki Locus of Control Scale for female adolescents; however, males exhibited a similar, but a nonsignificant trend. Furthermore, the internal locus of control characteristic was suggested to be associated with the finding that resilient children had the expectation that positive outcomes will follow from their efforts (Garmezy & Nuechterlein, 1972). Research has also demonstrated a link between locus-of-control and familial antecedents (Crandall, 1975). This research reported an internal locus-of-control facilitated by maternal emphasis on the child's independence.

Finally, androgyny has been reported to be empirically associated with resiliency. Androgynous subjects have shown
greater resiliency to recent life stress than does gender-typed or traditional role accepting subjects (Roos & Cohen, 1987). Werner and Smith (1982) reported androgyny to be associated with resilience: "While the gentle, emotionally responsive aspects of human nature were allowed expression in the resilient men, the resilient women possessed a number of personality attributes that enabled them to take the instrumental as well as the expressive role, depending on the demands of the situation" (p. 90).

Extraindividual Perspectives

The second category of research involved the importance of factors in the environment, such as external support, family characteristics, experiences of responsibility, and school experiences. Genetic influences have also been considered.

The importance of bonding in relationships to supporting resiliency has been well documented (McClellan & Trupin, 1989, Roos & Cohen, 1987; Werner & Smith, 1982). Bowlby (1988) discussed the importance of a responsive caregiver to whom the child can go in time of need: "A person's degree of vulnerability to stressors is strongly influenced by the development and current state of his or her intimate relationships" (p. 1). In addition, having relationships with teachers who served as effective role models has been associated with resilient students (McClellan & Trupin, 1989; Roos & Cohen, 1987).

Family characteristics of the resilient child have also
been investigated. Resilient children had parental supervision to provide control within the family (Roos & Cohen, 1987) and prevent the child from engaging in delinquent activities (Rutter, 1985). In general, the resilient child's family possessed cohesion and warmth (McClellan & Trupin, 1989; Werner & Smith, 1982), provided a moderate level of attention to the resilient child (Werner & Smith, 1982), and structure in the home (Werner, 1984). Also important was the finding that the family possessed an a multigenerational support network.

Experiences designed to develop responsibility were prominent in the resilient child's life. Part-time work (Elder, 1974), required helpfulness (Werner, 1984), domestic responsibilities (Elder, 1974), and social responsibilities (Werner, 1984; Werner & Smith, 1982) were all environmental factors associated with resiliency. In addition, resilient children encountered success and achievement in school (Rutter, 1985). It is important to note that the achievement was not necessarily academic, but also extracurricular, in activities such as sports, drama, or music (Werner, 1984).

A final factor, which falls outside the child's control, was genetics. Perhaps the most consistent finding in the literature was that females were more resilient than males (McClellan & Trupin, 1989). In addition, resilient children possessed temperamental characteristics that elicited positive responses from others (Roos & Cohen, 1987;
Werner, 1984). In general, resilient children possessed an aesthetic appeal to adults, such as being physically attractive (Moskovitz, 1985). A genetic influence implied by several of the investigators was typified by Werner's (1984) statement that even as babies, resilient children were described as "active, affectionate, cuddly, good natured, and easy to deal with" (p. 69).

Research in resiliency, therefore, has been reconceptualized into two perspectives. The first perspective considered the processes occurring within the individual, in terms of personality factors, cognitions, and beliefs. The second perspective related to those events that impinge upon the individual, such as environmental and genetic determinants. Although there have been numerous studies investigating resiliency, there is a paucity of empirical literature designed to simultaneously assess intraindividual and extraindividual factors employing a singular sample. Similarly, Rutter (1985) has stated that "the bases of resilience are both environmental and constitutional" (p. 599). Additionally, there have not been enough comprehensive investigations into resiliency that have incorporated a psychologically oriented theoretical explanation for the findings.

Scientific Implications of the Literature

Luthar and Zigler (1991) provided a review of scientific issues related to resiliency. In particular, their comments focused on defining constructs such as
stress, measuring stress or risk factors, defining and measuring competence and maladjustment, constructing models for vulnerability and resilience, and conceptualizing protective processes and moderating events (variables). The scientific implications for counseling psychologists are crucial and will be the focus of the following discussion.

Since the resilience literature focused on risk factors, an examination of the instruments used to assess risk was necessary. Luthar and Zigler (1991) noted that although the validity and reliability of life stress measures are adequate, their theoretical underpinnings may be based on false assumptions. A particular weakness of adjustment measures (primarily social competence indices) was the failure to measure the cost of psychological adjustment. Werner (1984) reported that although resilient individuals did not have behavior problems, they suffered unhappiness and more health problems than their control group counterparts. As such, the literature has been based on an errant trait notion which implied that resilient individuals have been and will be free of symptoms in every aspect of their lives.

Rutter's (1987) research indicated that although some children do remain resilient, the great majority that were resilient at one age become vulnerable at another. These issues revealed that in the resilience research there exists the mistaken maladjustment oriented approach to the resilience literature. Therefore, all of the relevant
issues and factors are not illuminated through the assessment of risk. Counseling psychologists should be aware that a proactive stance constructed solely upon risk assessment may omit the state-like nature of resilience and the role of protective factors. Protective factors lend themselves more toward preventive intervention and involve mechanisms that are amenable to treatment. Risk factors often involve calamitous events or socio-economic status which may be resistant to intervention of any kind.

Despite the concerns regarding the resilience literature, it can be carefully evaluated and revised with empirical definitions, agreement of terms, and theoretical clarity. In addition, cross-sectional research is necessary to identify whether resilient individuals are present in the common populace. Although longitudinal studies have been reported, little is known about the generalizability of the data produced by these studies. Consequently, research which employs unconfounded methods of measurement and sample selection procedures that verify the presence of significant stressors and demonstrate psychological and social competence of children was indicated. Furthermore, moderating effects must be partialed out so that their relationship to resilience can be fully understood. Finally, counseling psychologists need to lead the way in the identification and implementation of scientific and preventative strategies that will enhance the tenuous nature of resiliency.
Chapter 3

PROCEDURES

For the purposes of the present study, data previously collected by the Phi Delta Kappa Educational Foundation concerning "A Study of Students at Risk" (Frymier, 1989) was utilized. The study focused on a population composed of fourth, seventh, and tenth graders who participated in Phi Delta Kappa's national study. The following chapter is a description of the procedures employed in conducting the present study.

Description of the Sample

Phi Delta Kappa's (PDK) research was conducted in response to a determination by the society's council assembly that the at-risk student was the most critical concern for education in the 1990s (Nardini & Antes, 1991). The purpose of PDK's study was to identify and describe at-risk children from a cross section of typical students. In addition, PDK sought to determine what the schools were doing to help the identified at-risk students and whether the efforts were effective (Frymier, 1989). Consequently, a national research project was designed to collect a cross-sectional sample of elementary, junior, and senior high
school students.

Among the interview and survey data collected were information not only concerning students, but also teachers and principals. According to Frymier and Gansneder (1989), between 25 and 35 percent of the students surveyed were determined to be seriously at-risk. Significant factors contributing to the success of students in this research were determined to be reading comprehension, attitude toward school, and school performance (Nardini & Antes, 1991).

The sample studied was derived from a cross-sectional sample of 21,174 students collected from approximately 300 schools: 100 fourth, 100 seventh, and 100 tenth grades in the North America. The initial sample of 21,174 was collected by the following procedures. The schools and chapters were not randomly selected for inclusion in the study. The 100 local chapters of Phi Delta Kappa involved in the study selected three schools that were to be representative of the geographical area served by the chapter. All of the schools selected for the study were public schools, included the specified grade levels, and reflected regional cultural factors. No special schools were included in the study.

Each local project director worked with the principals, teachers, and counselors of each school to select approximately 100 typical students in each of three area schools. The final sample was composed of approximately 50 percent males and 50 percent females. In regard to
ethnicity by gender, of the females, there were 70 percent Caucasian, 16.5 percent Afro-American, 7.1 percent Hispanic, 2.8 percent Asian American, 2.4 percent Native American, and 1.2 percent identified as Other. For the males, there were 71.2 percent Caucasian, 15.6 percent Afro-American, 6.6 percent Hispanic, 2.7 percent Asian American, 2.3 percent Native American, and 1.5 percent identified as Other.

The present study diverged from the PDK's study in regard to purpose and focus. The present investigation sought to determine if there were resilient children among the larger sample of at-risk children and determine how those resilient children differed from those who were becoming a casualty of their at-risk state. The sample used in this study was comprised of the students identified as at-risk by scoring 14 or higher on the "At-Risk Scale" (Antes & Mazely-Allen, 1989). By employing this criterion, approximately 20 percent of the fourth grade sample, 20 percent of the seventh grade sample, and 30 percent of the tenth grade sample were selected for inclusion. This selection procedure produced an at-risk sample composed of 1307 fourth graders, 1745 seventh graders, and 2372 tenth graders.

Following the identification of the at-risk sample, cases were excluded from the sample that possessed insufficient data to identify the child's grade level in school, ethnic group, and gender. This group was further scrutinized to separate resilient and non-resilient
students. The resilient children had to have experienced multiple stressors of marked gravity while demonstrating superior adjustment and adaptive capacities. Meeting the objective criterion of a score of 14 or above on the "At-Risk Scale" (Antes & Mazely-Allen, 1989) provided observational evidence that the student had experienced multiple stressors of marked gravity. Evidence of an ability to adapt and adjust in a healthful manner to stressful life events, environmental hazards, psychological injury, and the potentiating effects of these factors in combination, regardless of their magnitude was established by the following criteria:

1. The student's scores were above the 60th percentile on norm-referenced standardized achievement tests in reading.

2. The observers' estimate of the student's sense of self-esteem was rated as positive or very positive.

3. The student's average grades for the preceding year averaged a B or better.

A comparison group of non-resilient students was then selected using a nested hierarchy design. The inclusion criteria was a score of 14 or above on the "At-Risk Scale" provided observational evidence that the student had experienced multiple stressors of marked gravity. Evidence of an inability of the individual to adapt and adjust in a healthful manner to stressful life events, environmental hazards, psychological injury, and the potentiating effects
of these factors in combination, regardless of their magnitude was established by the following criteria:

1. The student's scores were at or below the 40th percentile on norm-referenced standardized achievement tests in reading.

2. The observers' estimate of the student's sense of self-esteem was rated as negative or very negative.

3. The student's average grades for the preceding year averaged a D or worse.

These procedures produced an initial sample of 760 children. Of this group, 354 had at least one missing variable and were not included in the study. Of the 360 children remaining, 102 were resilient and 258 were non-resilient.

Table 1 and Table 2 provide descriptions of the criterion groups by grade in school, gender, and cultural affiliation.

Table 1. Composition of the Resilient Group (n = 102).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Gender</th>
<th>Euro-Amer.</th>
<th>Afro-Amer.</th>
<th>Hispanic</th>
<th>Native Amer.</th>
<th>Asian Amer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Female</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>9</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Female</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Female</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>21</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>65</td>
<td>19</td>
<td>5</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 2. Composition of the Non-resilient Group (n = 258).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Gender</th>
<th>Euro-Amer.</th>
<th>Afro-Amer.</th>
<th>Hispanic</th>
<th>Native Amer.</th>
<th>Asian Amer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Female</td>
<td>15</td>
<td>10</td>
<td>1</td>
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<td>0</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>14</td>
<td>12</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Female</td>
<td>23</td>
<td>5</td>
<td>2</td>
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<tr>
<td></td>
<td>Male</td>
<td>55</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Female</td>
<td>25</td>
<td>4</td>
<td>5</td>
<td>2</td>
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<tr>
<td></td>
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<td>12</td>
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<td>0</td>
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<tr>
<td>Total</td>
<td></td>
<td>183</td>
<td>53</td>
<td>15</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

In regard to ethnicity by gender, for the females there were 62.7 percent Euro-American, 18.6 percent Afro-American, 8.3 percent Hispanic, 8.3 percent Native American, and 2.1 percent Asian American. For the males, there were 73 percent Euro-American, 20.9 percent Afro-American, 3.7 percent Hispanic, 1.4 percent Native American, and 1 percent Asian American.

Instrumentation

The instrument selected as the source of data for the present study was developed by the National Committee of the Phi Delta Kappa Educational Foundation (Appendix A). Although other instruments were developed to execute their study of students at-risk, the survey employed to collect data from the student subjects was used as the data source.

The determination of students at-risk was facilitated by the development of an instrument which measured this general construct. Development of the content validity of
the measure was the result of a multi-phase process (Antes & Mazely-Allen, 1989). A committee of researchers, appointed by Phi Delta Kappa, conducted a careful review of the literature, including more than 100 studies, to determine a general definition of the at-risk construct. The 45 factors identified and specified were developed into a 45-item questionnaire. Ninety-seven experienced educators responded to the questionnaire indicating their judgment concerning the relative importance of each factor to being at-risk. Following this procedure, the items were listed in rank order and a weight was assigned to each factor.

The research team members collected data about students by completing surveys for each student selected for the study. Information was derived from responses to items of the At-Risk Scale by three persons who knew the student best such as a past or current teacher, counselor, or administrator. In training sessions, the raters were instructed to leave the item unmarked if the information could not be verified by the student's folder, school records, public fact, or the teacher's experience (Frymier, 1989).

Following the completion of the surveys, a frequency table of the original risk scores for the participants was compiled. Employing this data, a cut off score of five and below was considered to be expected from students at low risk or no risk. In contrast, students receiving a score of six and above were considered to be at high risk. The final
version of this survey form was comprised of 58 items. Based upon the distribution and consideration of the percent of students thought to be at-risk nationally, the scoring criteria was amended to 13 and below for the low to no risk group and 14 and above for the high risk group (Antes & Mazely-Allen, 1989). Although no claims concerning the validity and reliability of the "At Risk Scale" (Frymier, 1989) scores were initially promulgated, significant attempts to address content and convergent validity have been conducted.

Data Analysis

Data Preparation

The procedures necessary to conduct the present research involved a number of steps to properly prepare the data for sample selection and later analysis. The following is an explication of the steps and procedures required to conduct of this aspect of the research.

In approaching a data base containing 21,174 students, it was necessary to become familiar with the nature of the information collected and the form in which it was recorded. Consequently, all of the publications generated by Phi Delta Kappa concerning the procedures used for data collection were carefully studied and scrutinized for methodological and conceptual errors. Determination of the usefulness of the data was necessary prior to any further research commitments. In addition, it was important to determine
that the research questions previously derived from the aforementioned literature review could be ethically derived from the data base variables. Since the data were collected for a related but different purpose, it was possible that the data could be irrelevant to the proposed study.

The Phi Delta Kappa data was in a raw data state; therefore, modifying the data base to render it useful was critical. Since the data existed as a large pool of variables arranged according to identification numbers, the data had not been pre-sorted in any particular manner and was largely unprocessed. Since it was not analysis ready, programs were written to obtain the necessary information from the data base. For example, the writing of a program was required to describe the cases of interest in regard to gender, grade in school, and cultural affiliation. Additional programs were written to select a comparison group, code the variables, and conduct the statistical analysis.

Another concern was whether a sample and comparison group could be derived from the data base; therefore, a pilot selection program was written utilizing the strictest criteria supported by the literature. Since it was possible to select a sample using the pilot program, a more reasonable criteria, previously defined, was proposed for the actual selection program.

**Statistical Methodology**

Analysis of the collected data was completed by
employing a step-wise discriminant analysis. The rationale for selecting discriminant analysis was related to the need of determining whether there were differences between resilient and non-resilient children. In 1936, Fisher first proposed this method of data analysis to describe group differences (Pedhazur, 1982). For the purposes of this study, a stepwise discriminant analysis was conducted using the following variables derived from the "At Risk Scale": parental attitude toward education, sibling order, siblings who dropped out of school, family composition, parental divorce or separation, familial drug or alcohol abuse, and physical or sexual abuse. The use of this method of data analysis was expected to produce the most discriminating subset of variables regarding resilient and non-resilient children. The level of significance was set at \( p < .05 \).

Statistical analyses were conducted with the Statistical Package for the Social Sciences Release 4.1 at the Indiana State University Computer Center.

Limitations

The present study was subjected to the following limitations:

1. Selection biases may have introduced threats to external validity.

2. Limitations of the data collection instrument were related to reliance on personal and professional perceptions and ratings of family and child variables which were susceptible to subjective bias. In addition, the
instruments used to assess the variables under investigation possessed limitations in regard to reliability and validity.

3. Although reasonable efforts were attempted by PDK to select a cross-sectional sample, the collection sites were limited to the states and regions in which a local chapter of PDK resided. Consequently, regions that possess fewer institutions of higher education were under-represented.

4. Missing or incomplete data reduced the number of possible students that could be studied.

5. The variables that comprised the data cases were likely to have varied widely in reliability and validity. For example, the reading level of the student was established by recording results of standardized measures. In contrast, parental attitude was measured by teacher ratings on a five point Likert scale. Consequently, the meaningfulness of the constructs represented by the variables was likely to vary widely.

6. Another limitation related to the criteria used in identifying the resilient and non-resilient groups. This study assigned students to groups based primarily on academic competence. Although success in school has been supported by the literature as a significant indicator of success in life, other measures of success such as social competence or behavioral competence might have been employed. Thus, students who demonstrated competencies in areas other than academic success may have been overlooked.
by the selection criteria.

7. Since no manipulation of variables was attempted in this study, data analysis was limited to description of the compared groups.

8. As a result of the limitations, prediction of effective interventions have been proffered with caution.

Null Hypothesis

There is no significant difference between resilient and non-resilient children with regard to a subset of variables comprising parental attitude toward education, sibling order, siblings who dropped out of school, family composition, parental divorce or separation, familial drug or alcohol abuse, and physical or sexual abuse.
Chapter 4

RESULTS

The purpose of this study was to determine the differences between resilient and non-resilient children with respect to family composition, sibling order, parental divorce or separation, physical or sexual abuse, siblings who dropped out of school, parental attitude toward education, and familial drug or alcohol abuse. The two criterion groups under study were composed of 102 resilient and 258 non-resilient fourth, seventh, and tenth grade children.

In this chapter, the results of the study are reported in regard to the following null hypothesis:

Null Hypothesis. There is no significant difference between resilient and non-resilient children on a subset of variables comprising parental attitude toward education, sibling order, siblings who dropped out of school, family composition, parental divorce or separation, familial drug or alcohol abuse, and physical or sexual abuse.

The procedures used for the derivation of the discriminant function provided means, standard deviations, correlations, and univariate F-ratios. A stepwise
discriminate analysis was used to investigate the differences between the two criterion groups. The results of the discriminate function were reported, tested, and discussed.

Derivation of the Discriminant Function

The means, standard deviations, and variances of the independent variables from the discriminate analysis are reported in Table 3.

Table 3. Means and Standard Deviations for the Independent Variables by Group.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Composition</td>
<td>1</td>
<td>2.8529</td>
<td>1.7922</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.5892</td>
<td>1.7802</td>
</tr>
<tr>
<td>Sibling Order</td>
<td>1</td>
<td>2.7451</td>
<td>1.0117</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.6589</td>
<td>1.0695</td>
</tr>
<tr>
<td>Parental Divorce or Separation</td>
<td>1</td>
<td>0.2549</td>
<td>0.4380</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.1512</td>
<td>0.3589</td>
</tr>
<tr>
<td>Physical or Sexual Abuse</td>
<td>1</td>
<td>0.0490</td>
<td>0.2170</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.1124</td>
<td>0.3165</td>
</tr>
<tr>
<td>Sibling Dropouts</td>
<td>1</td>
<td>0.2647</td>
<td>0.6282</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.2752</td>
<td>0.7260</td>
</tr>
<tr>
<td>Parental Attitude</td>
<td>1</td>
<td>4.2941</td>
<td>0.7909</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.9767</td>
<td>1.0360</td>
</tr>
<tr>
<td>Familial Chemical Abuse</td>
<td>1</td>
<td>0.5588</td>
<td>0.7522</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.4380</td>
<td>0.6988</td>
</tr>
</tbody>
</table>

Group 1 = Resilient  Group 2 = Non-resilient

For the resilient group, the variables family composition, sibling order, parental divorce or separation, parental attitude, and familial chemical abuse had higher means than the non-resilient group. The resilient group,
however, had lower means on the variables, sibling dropouts and physical and sexual abuse, than the non-resilient group.

The intercorrelations included in the derivation of the discriminant analysis are presented in matrix form in Table 4. The matrix displays pooled within-group correlations which represents the interrelations among the predictor variables. Since the intercorrelations among the independent variables were relatively low, all of the variables were considered fairly equally in the discriminant analysis.

Table 4. Intercorrelations Among the Independent Variables.

<table>
<thead>
<tr>
<th></th>
<th>$X_1$</th>
<th>$X_2$</th>
<th>$X_3$</th>
<th>$X_4$</th>
<th>$X_5$</th>
<th>$X_6$</th>
<th>$X_7$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_1$</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_2$</td>
<td>-0.1188</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_3$</td>
<td>0.2078</td>
<td>-0.0213</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_4$</td>
<td>0.1321</td>
<td>-0.0167</td>
<td>-0.0585</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_5$</td>
<td>0.0942</td>
<td>0.2959</td>
<td>-0.0585</td>
<td>0.0232</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$X_6$</td>
<td>-0.0756</td>
<td>-0.0065</td>
<td>-0.0805</td>
<td>-0.1357</td>
<td>-0.0873</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>$X_7$</td>
<td>0.1616</td>
<td>0.0374</td>
<td>0.2083</td>
<td>0.1809</td>
<td>0.0940</td>
<td>-0.1291</td>
<td>1.000</td>
</tr>
</tbody>
</table>

$X_1 = \text{Family Composition}$

$X_2 = \text{Sibling Order}$

$X_3 = \text{Parental Divorce or Separation}$

$X_4 = \text{Physical or Sexual Abuse}$

$X_5 = \text{Sibling Dropouts}$

$X_6 = \text{Parental Attitude}$

$X_7 = \text{Familial Chemical Abuse}$

The discriminant analysis procedure provided Wilks'
lambda and corresponding univariate F-ratios for each of the predictor variables used as a criterion measure of discrimination. Table 5 presents Wilks' lambda and univariate F-ratios for the independent variables.

Table 5. Relative Importance of Predictor Variables in Relation to Group Membership.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Wilks' Lambda</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Composition</td>
<td>0.9956</td>
<td>1.596</td>
<td>0.2073</td>
</tr>
<tr>
<td>Sibling Order</td>
<td>0.9986</td>
<td>0.489</td>
<td>0.4847</td>
</tr>
<tr>
<td>Parental Divorce or Separation</td>
<td>0.9852</td>
<td>5.367</td>
<td>0.0211*</td>
</tr>
<tr>
<td>Physical or Sexual Abuse</td>
<td>0.9905</td>
<td>3.448</td>
<td>0.0642</td>
</tr>
<tr>
<td>Sibling Dropouts</td>
<td>0.9999</td>
<td>0.164</td>
<td>0.8981</td>
</tr>
<tr>
<td>Parental Attitude</td>
<td>0.7277</td>
<td>134.0</td>
<td>0.0000*</td>
</tr>
<tr>
<td>Familial Chemical Abuse</td>
<td>0.9942</td>
<td>2.092</td>
<td>0.1489</td>
</tr>
</tbody>
</table>

* p < .05 df = (1,358)

A review of the probability levels of the individual variables reported in Table 5 revealed that on a univariate basis, only parental divorce or separation and parental attitude displayed significant differences between group means. These results suggested that children who were resilient had parents whose attitude toward education was more positive than their non-resilient counterparts. In addition, the parents of resilient children were more likely to have experienced a divorce or separation during the past year than the parents of non-resilient children.
The stepwise discriminate analysis determined a subset of independent variables most efficient in discriminating between the resilient and non-resilient groups. Table 6 is a summary of the stepwise discriminate analysis procedure.

Table 6. Summary of Stepwise Discriminant Analysis.

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable Entered</th>
<th>Variables Retained</th>
<th>Wilks' Lambda</th>
<th>df</th>
<th>Equivalent F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Parental Attitude</td>
<td>1</td>
<td>0.7277</td>
<td>(1,358)</td>
<td>133.9590*</td>
</tr>
<tr>
<td>2</td>
<td>Divorce/ Separation</td>
<td>1,2</td>
<td>0.7123</td>
<td>(2,357)</td>
<td>72.0885*</td>
</tr>
<tr>
<td>3</td>
<td>Chemical Abuse</td>
<td>1,2,3</td>
<td>0.7045</td>
<td>(3,356)</td>
<td>49.7726*</td>
</tr>
<tr>
<td>4</td>
<td>Family Composition</td>
<td>1,2,3,4</td>
<td>0.7024</td>
<td>(4,345)</td>
<td>37.6092*</td>
</tr>
</tbody>
</table>

*p < .05

A review of the data displayed in Table 6 revealed that the four predictor variables that were entered into the analysis were retained.

Test of the Null Hypothesis

Since the stepwise procedure was statistically significant, the null hypothesis was tested by an analysis of the canonical discriminant function. The significance of the canonical correlation was tested by using the chi-square statistic and is reported in Table 7. The probability value of the function was p < .05; therefore, the null hypothesis was rejected. These results indicated that group differences were explained by the subset of variables
comprising parental attitude toward education, sibling order, family composition, parental divorce or separation, and familial drug or alcohol abuse.

Table 7. Significance of the Canonical Discriminant Function.

<table>
<thead>
<tr>
<th>Wilks' Lambda</th>
<th>Chi-squared</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7023627</td>
<td>125.78</td>
<td>4</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Analysis of the Discriminant Function

Since the discriminant function can be statistically significant without providing meaningful information concerning the dependent variables, the canonical discriminant functions were further analyzed. A review of Table 8 reveals the computations employed in the analysis of the canonical function.

Table 8. Canonical Discriminant Functions.

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>Eta-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.42377</td>
<td>0.5455614</td>
<td>0.2977</td>
</tr>
</tbody>
</table>

Interpretation of the canonical correlation coefficient can be derived from the concept of the analysis of variance known as eta (Klecka, 1980). The groups can be conceptualized as an independent variable which influences the values on the discriminant function, the dependent variable. Since the eigenvalue cannot be interpreted directly, the degree of difference between the group means
on the function was measured by eta (canonical correlation). When eta was squared, it reflected the proportion of variance in the discriminant function that was explained by the criterion groups. Therefore, 29.77 percent of the variance in the dependent variable could be explained by the following subset of four independent variables: parental attitude toward education, parental divorce or separation, familial chemical abuse, and family composition. The variables, however, did not account for the large proportion of the unexplained variance in the dependent variable.

Validation of the Discriminant Function

The validation of the discriminant function provided an analysis of the usefulness of the function in predicting criterion group membership. The validation involved several important considerations including the determination of the group centroids, construction of the classification matrices, and determination of the classification accuracy relative to chance.

Group centroids represent the mean of the individual Z-scores for each group (Hair, Anderson, & Tatham, 1987). Consequently, the group centroids are used to interpret the discriminant function results from a global perspective. The group centroid for the resilient group was 1.03244 and the non-resilient group was -0.40817. These aggregate Z-scores were the number of standard deviations each group was away from the average of both groups. Figure 1 is a graphic presentation of the separation of the two criterion group
The predictive accuracy of the discriminant function using the test sample was provided. The procedure computed the proportion of correctly classified cases and the number of cases classified into each criterion group. The procedure considered the original 760 cases to select a test sample of 419 cases in which all of the discriminating variables were present. The separation of the group centroids was reflected in the classification matrix. Since the centroid for the non-resilient group approaches zero, more classification errors were made when predicting non-resilient group membership. Table 9 summarizes the results of the classification procedure.

Table 9. Classification of Test Sample Based on the Discriminant Function.

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>Number of Cases</th>
<th>Predicted Resilient</th>
<th>Group Non-resilient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilient</td>
<td>109</td>
<td>94 (86.2%)</td>
<td>15 (13.8%)</td>
</tr>
<tr>
<td>Non-resilient</td>
<td>310</td>
<td>97 (31.3%)</td>
<td>213 (68.7%)</td>
</tr>
</tbody>
</table>

Total Cases Correctly Classified: 73.27%
Further analysis of the classification data was conducted to determine whether the 73.27 percent total cases classified exceeded the proportion of cases that would have been correctly classified without the discriminant function. Hair et al. (1987) recommended the use of the following formula to compute the proportional chance criterion for unequal group sizes:

$$C_{pro} = p^2 + (1-p)^2$$

In this study, $p$ was the proportion of individuals in the resilient group and $1 - p$ was the proportion of individuals in the non-resilient group. After substituting the appropriate numbers in the formula, the proportional chance criterion was 61.5 percent. Since the classification function correctly predicted 73.27 percent, the discriminant function classified cases more accurately than would be expected by chance. However, the magnitude of the classification improvement was small.

Klecka (1980) suggested an additional statistical evaluation, tau, of the amount of discrimination contained in the variables. Because tau is a proportional reduction in error statistic, it yields a standardized measure of improvement. Tau is computed by identifying the number of cases correctly classified on the basis of random assignment to groups in proportion to prior probabilities and summing them: $$.50 \times 109 + .50 \times 310 = 209.5$$. The difference of
the total number of cases correctly classified from the prior probability of group membership \((307 - 209.5 = 97.5)\) divided by the total cases to be classified minus the prior probability of group membership \((419 - 209.5 = 209.5)\) equaled \(\tau\) \((97.5 / 209.5 = .465)\). Consequently, the classification based on the discriminating variables made 46.5 percent fewer errors than would be expected by random assignment (i.e., 112 actual errors versus 209.5 expected by chance).

**Discriminant Loadings of the Function**

Further information and clarification was provided by considering the canonical discriminant loadings of the function. The loadings determine the relative importance of the contribution of each independent variable to the discriminant analysis. The standardized correlation coefficients are derived by converting the unstandardized coefficients as if the original data had standard deviations of 1.0. See Table 10 for the unstandardized and standardized correlation coefficients.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized</th>
<th>Standardized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Attitude</td>
<td>1.01542</td>
<td>0.98816</td>
</tr>
<tr>
<td>Divorce or Separation</td>
<td>0.54186</td>
<td>0.20746</td>
</tr>
<tr>
<td>Familial Chemical Abuse</td>
<td>0.25897</td>
<td>0.18498</td>
</tr>
<tr>
<td>Family Composition</td>
<td>0.58417</td>
<td>0.10430</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-3.77741</td>
<td></td>
</tr>
</tbody>
</table>
The results of the computation of the pooled within-groups correlations between discriminating variables and canonical discriminant functions are ordered from top to bottom by the magnitude of the loading (see Table 11). It should be noted that structure coefficients are simple bivariate correlations; as a result, they are not affected by relationships with the other variables as are the unstandardized and standardized canonical correlations.

Table 11. Within-Groups Structure Coefficients.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ranking</th>
<th>Function 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Attitude</td>
<td>1</td>
<td>0.93968</td>
</tr>
<tr>
<td>Divorce or Separation</td>
<td>2</td>
<td>0.18808</td>
</tr>
<tr>
<td>Familial Chemical Abuse</td>
<td>3</td>
<td>0.11743</td>
</tr>
<tr>
<td>Family Composition</td>
<td>4</td>
<td>0.10256</td>
</tr>
<tr>
<td>Physical or Sexual Abuse</td>
<td>5</td>
<td>-0.07986</td>
</tr>
<tr>
<td>Sibling Dropouts</td>
<td>6</td>
<td>-0.07123</td>
</tr>
<tr>
<td>Sibling Order</td>
<td>7</td>
<td>-0.01634</td>
</tr>
</tbody>
</table>

A comparison of the standardized coefficients (Table 10) and the within-groups structure coefficients (Table 11) revealed that the structure coefficients were slightly smaller. These findings were not surprising because structure coefficients are typically smaller than standardized coefficients. In addition, a comparison of the rankings of the coefficients indicated that the order of the contribution of each variable to the discriminant function remained unchanged.
Discussion

The purpose of this investigation was to determine if there were significant differences between resilient and non-resilient fourth, seventh, and tenth graders. The null hypothesis, which assumed no differences between the two groups of students, was rejected at $p < .05$. The stepwise discriminant analysis produced the most parsimonious subset of discriminating variables which was parental attitude toward education, parental divorce or separation, familial chemical abuse, and family composition. Of these variables, the univariate-F tests indicated that parental attitude and parental divorce or separation were significant in predicting group membership at $p < .05$.

A comparison of these results with the canonical discriminant loadings revealed that parental attitude toward education was the single most important indicator of resilience while variables of divorce or separation, chemical abuse, and family composition played a much smaller role in predicting group membership. Based on these results it is likely that parental attitude toward education accounts for the major proportion of the variance.

The classification function of the discriminant analysis proved rather successful because the discriminating variables predicted group membership better than would be expected by chance. Consequently, the prediction equation derived by considering parental attitude toward education, divorce or separation, chemical abuse, and family
composition together was useful. However, only a small proportion of variance in the criterion groups was explained by the four independent variables, 29.77 percent. Other factors not identified in this study, therefore, must be involved in predicting resilient and non-resilient group membership.

The protective effect of positive familial environments was posited by the literature (Bolby, 1988; Garmezy & Masten, 1986; Luthar & Zigler, 1991; McClellan & Trupin, 1989; Roos & Cohen, 1987; Werner & Smith, 1982). As noted by Rutter's (1979, 1985, 1987) data, a positive parent-child relationship, good parenting skills, and adaptive functioning of children was associated with a reduction of risk. Moreover, the question of the contribution of parental attitude to developing resilience to risk was raised by Horacek, Ramey, Campbell, Hoffmann, and Fletcher (1987).

In regard to the findings of the present study, the best predictor variable explaining group differences was a positive parental attitude toward education. Not only was this variable significant (p < .05) on the univariate-F test, it also contributed the greatest proportion to the stepwise discriminant analysis when considered with the variables parental divorce or separation, familial chemical abuse, and family composition. The results indicated that at-risk children who had parental figures who possessed a positive or very positive attitude were more likely to be
resilient than at-risk children whose parental figures possessed a poor or very poor attitude toward education.

As expected, the results of this study confirmed that parental attitude toward education was one factor that may contribute to a good familial environment. Furthermore, Adlerian theory (Manaster & Corsini, 1982) suggested that parental involvement in children's education produces improved academic performance and family environment. In this study, resilient children were defined as being at-risk and possessing above average grades, positive self-esteem, and reading competence. Consequently, the resilient group was academically competent. The importance of the relationship between at-risk students' success in academic endeavors and their parents' attitude toward education was supported by the present study. In response to Garmezy and Masten's (1986) call for specification of the adaptive familial attributes of resilient children, the results of the present study supported the significance of parental attitude in mediating the deleterious effects of risk factors.

Parental divorce or separation was also significant in explaining differences between resilient and non-resilient children on the univariate-F test ($p < .05$). Although the variable of parental divorce or separation proved significant in the prediction of group differences when considered with parental attitude, familial chemical abuse, and family composition, it provided only a small
contribution. The results of this study also indicated that children whose parents had experienced divorce or separation in the past year were more likely to be resilient than those children whose parents had not experienced divorce or separation in the past year.

It was not expected that resilient children would have parents who were experiencing a higher rate of divorce or separation than the parents of non-resilient children. These results were not supported by the findings reported in the literature, which had indicated that disruptions such as divorce or separation were deleterious to the family environment and predictive of instability in the child (Block, 1981; Degroot, Ussery, & Davis, 1990; Williams, Anderson, McGee, & Silva, 1990).

In contrast, Worland, Weeks, Janes, and Strock (1984) and Stiffman, Jung, and Feldman (1986) found that some at-risk children did not reveal behavioral and emotional disturbance. They concluded that intelligence, achievement, and academic competence mediated the deleterious effects of parental psychopathology in at-risk children. Since the resilient children in the present study were academically competent, possessed positive self-esteem, and revealed achievement, it is possible that these factors are mediating the disruptions of parental divorce or separation.

The variable, familial chemical abuse, was useful in determining group differences when considered with parental attitude, divorce or separation, and family composition.
The presence of drug and alcohol abuse in the family, however, was not predictive of group differences on a univariate basis. In addition, the results suggested that there were more reported problems with chemical abuse in the homes of resilient than non-resilient children.

Tharinger and Koranek (1988) noted, when considering the results of their comprehensive literature review, that parental chemical abuse was typically associated with children characterized by physical and emotional problems, conduct disorders, school problems, hyperactivity, delinquency, and dysfunctional drinking behavior. Tharinger and Koranek concluded that those children who overcome these deleterious effects of parental alcohol and drug abuse were noted to be successful in school and generally socially competent. Consequently, the non-resilient group appears to be most similar to Tharinger and Koranek's group of children whose risk was increased by parental chemical abuse. In contrast, the resilient children of the present study were similar to the group of children who were able to overcome the risk associated with familial drug and alcohol abuse.

The final variable useful in predicting group differences when considered in concert with parental attitude, divorce or separation, and chemical abuse was family composition. The consideration of whether the child was from a family consisting of a biological mother and biological father, biological mother and stepfather, stepmother and biological father, biological mother only,
biological father only, extended family, foster parents, or institution was not significant in predicting group differences on a univariate basis. In comparison to non-resilient children, the results indicated that resilient children were more likely to have come from homes headed by a single biological parent, extended family, foster parents, or an institution. In contrast, homes in which non-resilient children lived were more likely to be headed either by both biological parents or a biological parent and a step-parent.

The results of the present investigation were not supportive of Williams et al.'s (1990) findings, which indicated that single motherhood was predictive of behavioral and emotional disorder. In contrast to Williams et al., Mc Clellan and Trupin (1989), Werner (1984), and Werner & Smith (1982) found that the effects of family composition were mediated by the characteristics of the family unit such as cohesion and warmth, a multigenerational network of kin, structure in the home, and the provision of moderate levels of attention to the resilient child. It is possible that the caretakers available to the resilient children in the present study possessed similar characteristics. In addition, the results of the present study were supportive of Moskovitz' (1985) conclusion that resilient children have the ability to solicit support without overtaxing the resources of their caretakers.

Variables not supported as determining differences
between resilient and non-resilient children were sibling position, physical or sexual abuse, or having a sibling who has dropped out of school. It may not be surprising that having experienced physical or sexual abuse was not a significant discriminating variable because of the high rate of under-reporting associated with its occurrence (Giovannoni, 1989). Despite reporting problems, it should be noted that physical or sexual abuse approached significance (0.0642) as a predictor of group differences on the univariate-F test.

In regard to sibling order, Jensen, Bloedau, Degroot, Ussery, and Davis (1990) reported that older children were at a greater risk for being referred for psychiatric treatment than younger children. Interestingly, both groups of resilient and non-resilient children in the present study tended to be the youngest child. Having a sibling who dropped out of school was not useful in predicting group membership. In both criterion groups, nevertheless, a low incidence of sibling dropout was reported. Given this finding, the modeling effect of sibling dropout as suggested by social learning theory (Cowen and Work, 1988) was not useful in determining group differences.
Chapter 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This study was designed to investigate whether fourth, seventh, and tenth grade children determined to be at-risk and grouped by evidence of the state of resilience or non-resilience could be differentially described by a subset of seven variables including: parental attitude toward education, sibling order, siblings who dropped out of school, family composition, parental divorce or separation, familial drug or alcohol abuse, and physical or sexual abuse.

The study was considered important for addressing research issues such as a lack of cross-sectional studies, geographically restricted sample selection, studies that partialed out moderating effects that confounded the understanding of resilience, and the gleaning of greater knowledge by employing a data base. Since the extant literature has generally adopted an errant trait notion, it has not been conducive to the promulgation of preventative treatment strategies. Consequently, the ultimate importance of this study resides in the contribution to proactive
approaches to theory, intervention, and conceptualization of at-risk and resilient children.

A review of the literature considered studies which dealt with protective and risk factors related to personality characteristics of resilient children, psychosocial environments of healthy and unhealthy families, and the consequences of those factors. In addition, the at-risk literature was explored and issues similar to those noted in the resilience literature were identified and considered. The literature was then reconceptualized as factors related to variables residing within the individual, intraindividual, and those found external to the individual, extraindividual. This reconceptualization allowed greater clarity in identifying the independent variables related to the family environment addressed by the present study. No research was found that considered, in concert, the effects of the selected extraindividual characteristics of parental attitude toward education, sibling order, siblings who dropped out of school, family composition, parental divorce or separation, familial drug or alcohol abuse, and physical or sexual abuse.

The sample employed was derived from "A Study of Students at Risk" (Frymier, 1989) conducted by the Phi Delta Kappa Educational Foundation and consisted of a cross-sectional sample of 21,174 students collected from approximately 300 schools; 100 fourth, 100 seventh, and 100 tenth grades in the United States. Survey data were
collected concerning these students which identified approximately 20 percent of the fourth grade sample, 20 percent of the seventh grade sample, and 30 percent of the tenth grade sample as being at-risk (Antes & Mazely-Allen, 1989). These children were then assigned to resilient and non-resilient groups based on the following criteria:

1. Resilient children possessed scores on norm-referenced standardized achievement tests in reading above the 60th percentile, positive or very positive ratings of the sense of self-esteem, and grades received for the preceding year averaged B or better.

2. Non-resilient children possessed scores on norm-referenced standardized achievement tests in reading at or below the 40th percentile, negative or very negative ratings of the sense of self-esteem, and grades received for the preceding year averaged D or worse.

Scores for the selected characteristics were derived from the variables located in each participant's data case. Participants were excluded when insufficient data were available to identify them in regard to gender, cultural affiliation, grade level, or the discriminating predictor variables. Of the selected sample of 760 resilient and non-resilient children, 354 had at least one missing variable and were not included in the study. The final sample employed consisted of 360 children and was comprised of 102 resilient and 258 non-resilient fourth, seventh, and tenth grade children.
Generated from a review of the literature, the following null hypothesis was investigated:

Null Hypothesis. There is no significant difference between resilient and non-resilient children with regard a subset of variables comprising parental attitude toward education, sibling order, siblings who dropped out of school, family composition, parental divorce or separation, familial drug or alcohol abuse, and physical or sexual abuse.

A stepwise discriminant analysis was utilized to test the null hypothesis. The results of the statistical analysis for the criterion groups were as follows:

A significant Wilks' lambda and concomitant Chi-square (p < 0.0000) was obtained using a subset of the predictor variables including parental attitude, parental divorce or separation, familial drug and alcohol abuse, and family composition. Consequently, the null hypothesis was rejected.

Approximately 30 percent of the variability in discriminant space could be attributed to group differences when the four predictor variables were considered together. A test sample was then derived by employing 419 of the original 760 children selected to test the classification function. Employing this sample, 73.27 percent of the cases were correctly classified, which exceeded the predicted proportion that could be expected by chance. The classification test was useful in demonstrating not only a
significant, but also a practical result.

Conclusions

The question addressed by the study was whether there were differences between resilient and non-resilient children in terms of parental attitude toward education, sibling order, siblings who dropped out of school, family composition, parental divorce or separation, familial drug or alcohol abuse, and physical or sexual abuse. The following conclusions drawn from an analysis of the results of the study are offered within the limitations described in Chapter 3.

1. At-risk children who show educational resilience are few in number. Less than 3 per cent of children determined to be at-risk ever reached satisfactory achievement in school or behaved in ways that allowed them to participate effectively in the educational environment. Although other studies have been able to identify resilient children, no studies were found that suggested the proportion of at-risk children who were resilient. The value and utility of employing a cross-sectional data base to investigate resilient children was supported. Consequently, studies that collected samples of resilient children without access to a national sample were likely to have produced selection bias and spurious results.

2. As children progress through the educational system, they are more likely to be classified as at-risk. In the present study, a much higher proportion of tenth
grade students were classified as at-risk compared to their younger counterparts in grades four and seven. As many professionals have believed, national trends suggest that approximately one in five children who enter high school drop out prior to graduation (Weiner, 1980). In addition, Werner and Smith (1982) noted that resilient children followed a pattern of increased risk over time for developing physical, emotional, and employment problems. The cumulative effect of constant risk over time, therefore, appears to have significant consequences.

3. Resiliency appeared to cross ethnic and gender boundaries. Resiliency in cultural minorities were equivalent to those found in the majority. Furthermore, resiliency was not limited by ethnicity or gender. This conclusion is important given the finding that at-risk children were somewhat more likely to be male and ethnically described as Afro-American, Hispanic, or Native American.

4. Positive parental attitudes toward schooling was the most effective predictor of success in school for at-risk children. The results of this study lend support for the premise promulgated by many authors (Bolby, 1988; Garmezy & Masten, 1986; Luthar & Zigler, 1991; McClellan & Trupin, 1989; Roos & Cohen, 1987; Rutter, 1979, 1985, 1987; Werner & Smith, 1982) that positive parent-child relationship, good parenting skills, and adaptive functioning of at-risk children were associated with a reduction of risk. In particular, a positive parental
attitude appeared to mediate other vulnerability processes affecting at-risk children. In regard to the present study, caretakers of resilient children had more positive attitudes toward school than caretakers of non-resilient children.

In addition, it is clear that negative parental attitudes toward school did not provide moderating effects to reduce the impact of the symptoms associated with risk. Children who are at-risk may have the characteristics of resilience; however, the lack of positive parental support may well destroy any chance to develop resilience and thus do well in school. The impact of parental attitudes on the functioning of at-risk children, therefore, must be considered when developing programs to assist them. Counseling psychologists' efforts to address any aspect of the at-risk child should include interventions intended to directly assist the child's parental figures. This conclusion is particularly important when considering the cumulative effect of divorce or separation, familial chemical abuse, and non-traditional family composition.

5. Among at-risk children, divorce or separation between parents or caretakers did not seem to have had the same negative effect as was previously indicated. In this study, divorce or separation was higher among at-risk children who were classified as resilient. Despite the relationship between parental marital discord and increased vulnerability to risk, noted by Block (1981), Jensen, Bloedau, Degroot, Ussery, and Davis (1990), and Williams,
Anderson, McGee, and Silva (1990), the protective effect of academic achievement and competence was reported by Stiffman, Jung, and Feldman (1986) and Worland, Weeks, Janes, and Strock (1984). Since the resilient children in the present study were by definition academically competent, it was concluded that divorce or separation may play less of a risk factor for some at-risk children who are bright or creative enough to find other alternatives, solutions, diversions, or supports during this time of familial crisis.

Divorce or separation requires the willingness of parental figures to take assertive action to resolve marital discord. Consequently, the support of a positive parental attitude toward school may have indicated a parental value of taking positive action to improve one's situation in life. According to Adlerian theory, family values are often evidenced by an inclination to similar behavior, values, and moral concepts (Dreikurs, 1957). Similarities of character traits and coping strategies of children, therefore, are a reflection of the family atmosphere. It is reasonable to conclude that growing up in an environment where caretakers take action to relieve distress can be learned and imitated by some children as a strategy to address their own at-risk state.

6. Resilient at-risk children seem to be less affected by familial chemical use or abuse than other children. Even though more chemical use or abuse was evident by caretakers of resilient children, this fact did not keep them from
attaining a positive educational experience. This finding was not fully expected because the literature clearly substantiated the relationship between familial chemical abuse, dysfunctional coping, and symptoms of children (Tharinger & Koranek, 1988).

Some studies have shown that children who were predicted to be dysfunctional based on the observation of familial chemical problems, however, were in fact functioning well (Tharinger & Koranek, 1988). As noted by Shulman and Mosak (1988), the effect of an ineffective parent is not always negative. They suggested that the child may respond positively by using the alcoholic parent as a negative role model and seek to become an effective and responsible person. Consequently, it is important to note that the resilient children in this study were functioning well and had parents who possessed a positive attitude toward school and were willing to take assertive action to resolve marital discord. The presence of familial chemical use, therefore, may not predict the actual effect of the problem when characteristics of the child and family are considered.

7. Resilient at-risk children are more apt to come from families headed by single biological parent caretakers than at-risk non-resilient children. As noted in the literature (Garmezy & Masten, 1986; Roos & Cohen, 1987; Werner, 1984), children who were resilient had secured a positive support system from the familial resources provided
even though the family may not be free of dysfunction. For example, resilient children have been noted to demonstrate an assertiveness that does not overtax the resources of their parental figures and school teachers, which often results in receiving favorable attention (Moskovitz, 1985). It seems reasonable to conclude that the findings of this study support the notion that it is the positive attitude and action orientation of at-risk children and their parental figures that support resilience in the face of adversity.

8. Psychologists have not yet been able to identify important elements of resilience, in particular educational resiliency. Of the factors identified in the literature as contributing elements of resilience, only a relatively small percentage of the variance could be accounted for by those factors in this study. Consequently, other important factors in educational resilience are yet to be identified and/or discovered.

Implications

The following implications are proposed based on the findings of the present study.

1. In reference to the impact of parental attitude in explaining group differences on the resilience of at-risk children, several inferences are warranted. It is clear that counseling psychologists who work in agencies, schools, and institutions should consider the implementation of programs designed to improve parental attitude toward
schooling. Since there is a possible relationship between at-risk children, who are academically competent, and positive parental attitudes toward school, intervention strategies should be conceptualized and designed with the involvement of the child's parental figures to ensure compliance.

The system should be revised to include some provision for involving parents of at-risk children during the onset of their children's problems at school or in the community. Furthermore, the parents of at-risk children should be involved in preventative efforts to resolve any concern noted by the agency, school, or institution before dysfunction is observed. During these interactions, efforts should be initiated to improve parental attitudes, parenting skills, and parental coping strategies.

2. In regard to at-risk children, individuals working in agencies, schools, or institutions must recognize that the observation of parental divorce or separation may not predict dysfunction. Rather, a number of factors should be considered, including the parents' willingness to take positive action to resolve marital discord or other problems. This implication is particularly noteworthy when there is evidence that chemical abuse has been a problem in the family and the composition of the family is non-traditional. It will be important for therapists, teachers, and social servants to widen their perspective concerning the effects of divorce or separation when working with at-
risk children.

3. Those counseling psychologists working in agencies, schools, and institutions that assist at-risk children must be sensitive to the possibility that familial chemical abuse may not function by increasing risk. This implication is most accurate when observation of the family reveals a positive parental attitude, divorce or separation, and non-traditional family composition. In no way should it be assumed, however, that the presence of drug and alcohol problems in the family is to be ignored. Rather, it is suggested that the aforementioned factors be considered together prior to making a determination of the effect of familial chemical abuse on at-risk children. The attitudes and actions on the part of the parent to address familial chemical abuse may interact to produce a more healthy environment for the child who is at-risk.

4. One of the most socially important findings of this study is the observation that homes headed by a single parent, extended family, foster care, or institution did not increase dysfunction when issues of positive parental attitude, divorce or separation, and familial chemical abuse were considered. It is suggested that one of the aforementioned family compositions will not solely predict that a child will be non-resilient. The literature clearly indicated that any supportive authority figure can function to increase resilience in at-risk children. Consequently, those who work with at-risk children should be cognizant of
their ability to provide the support that may tilt the balance of risk towards resilience. Psychologists should also encourage at-risk children to reach out to other supportive persons including extended family members, friends, and teachers.

5. The results continue to support the revision of psychology towards prevention and research methods that consider well-adjusted individuals. Neglect of this orientation has led to the failure of psychologists to consider the strengths as well as the weaknesses of the individual to cope with varying levels of risk. Werner (1984) has concluded that: "when the stressful life events outweigh the protective factors, even the most resilient child can develop problems" (p. 89). Werner (1984) and Luthar and Zigler (1991) asserted the need to maintain a balance between the stress and the protective factors, either by decreasing the child's exposure to chronic environmental stressors or by increasing the number of protective factors available to the child. Emphasis upon controlling the positive and negative factors in the child's life is clearly rooted in a proactive intervention approach. This position echoes conceptualizing resilience as a state of the child, rather than a stable and enduring trait; thus, all children may be capable of resilience, given the proper circumstances.

6. Psychologists need to remain sensitive to the individual differences each client may possess. This
implication is particularly important given the difficulty in ascertaining the nature of those mechanisms that support resiliency in the face of adversity. Werner (1984) presented a pertinent discussion for those individuals who work with children by proposing the acceptance of children's temperamental idiosyncracies and allowing them experiences that challenge, not overwhelm, their coping abilities. In addition, she noted the importance of conveying a sense of responsibility, caring, helpfulness, and cooperation. In particular the results of the present study support modeling the courage to be competent despite the inevitable adversities that each of person encounters. She concluded with an existential philosophy regarding this arena of research, stating: "faith can develop and be sustained, even under adverse circumstances, if children encounter people who give meaning to their lives and a reason for commitment and caring" (p. 71).

7. The results of the study also support changes in the training and practice of counseling psychologists. In particular, training should include an emphasis on family theory to provide psychologists with the skills necessary to conduct family-oriented prevention strategies, counseling interventions, and assessment methods. Since this study implied the importance of the family's impact on the at-risk child, psychologists currently in practice should consider familial issues when working with children. Interventions directed at children, therefore, should involve the family
system to increase effectiveness.

Recommendations for Further Research

1. Since only 29.77 percent of the total variance in resilience was accounted for by the subset of variables, it is recommended that studies exploring the unknown 70 percent of the variance be conducted. Suggestions for possible variables in further investigations include: age, gender, interventions conducted by the school, intellectual level, socio-economic level, death of a parent or family member, behavioral disorders, parental mental or physical disorders, where the family lives, religion, social support, roles of extended family members, and family history.

2. It is recommended that alternative groups be compared to resilient children. In particular, comparison with a group of children who were functioning well but not at-risk, or not functioning well and not at-risk.

3. In addition, it is recommended that this study or a similar investigation be repeated and that selection criteria for resilience and non-resilience other than academic competence be employed. Criteria could include a lack of behavioral problems, psychological adjustment, and/or success in extra-curricular activities.

4. Furthermore, counseling psychologists ought to be involved in research and study focused on designing and developing strategies which might improve the climate existing between family and school. The present research revealed that what we know about that climate now is just
not sufficient.

5. Another suggestion is that the Phi Delta Kappa data, generated by their study of at-risk students, be utilized for additional investigations. Clearly, data in reference to resilient children remain to be explored. In addition, this approach to research continues to produce additional findings without risking the use of additional human participants.

6. The resilient sample used in the present research could be investigated further by studying the resilient students case by case in a qualitative manner. This approach would be particularly helpful in determining other salient characteristics of resilient children.

7. Finally, it is recommended that the findings of this study be used in quasi-experimental investigations that test the utility of prevention-oriented interventions, and also test treatments designed to enhance the state of resilience in at-risk children.
BIBLIOGRAPHY


APPENDIXES
APPENDIX A

AT-RISK SCALE

Ethnic Group:
  White__
  Black__
  Hispanic__
  Native American__
  Asian__

1. Father's Occupation:
   Professional__
   Manager, Technician__
   Skilled Laborer__
   Unskilled Laborer__
   Househusband__
   Unemployed__

2. Father's Level of Education:
   Did not graduate from high school__
   Graduated from high school only__
   Finished 1-3 years post-secondary__
   Graduated from college__

3. Mother's Occupation:
   Professional__
   Manager, Technician__
   Skilled Laborer__
   Housewife__
   Unemployed__

4. Mother's Level of Education:
   Did not graduate from high school__
   Graduated from high school only__
   Finished 1-3 years post-secondary__
   Graduated from college__

5. Number of Siblings:
   None__
   One__
   Two__
   Three__
   Four or more__
6. Position in Family:
   Only child__
   Eldest__
   Middle__
   Youngest__

7. Siblings who dropped out of school:
   None__
   One__
   Two__
   Three__
   Four or more__

8. Family Grouping:
   Real mother, real father__
   Real mother, stepfather__
   Stepmother, real father__
   Real mother only__
   Real father only__
   Extended family__
   Foster Parents__
   Institution__

9. Language used most in the home:
   English__
   Spanish__
   Asian__
   European__
   Other__

10. Estimate of parents' attitude toward education:
    Very Negative__
   Negative__
   So-so, In between__
   Positive__
   Very Positive__

11. Area of community in which the student resides:
    Rural__
    Small town__
    Small city__
    Suburban__
    Metro urban__
   Inner city urban__

12. Number of schools attended by the student during past five years (including this year):
    One__
    Two__
    Three__
    Four__
    Five or more__
13. Student's scores on norm-referenced standardized achievement tests in reading:
   Below 20th percentile__
   Between 21st and 40th percentile__
   Between 41st and 60th percentile__
   Between 61st and 80th percentile__
   Over 80th percentile__

14. Student's score on norm-referenced intelligence or aptitude test:
   Below 80__
   81 to 90__
   91 to 110__
   111 to 120__
   Above 120__

15. Number of courses failed last school year:
   One__
   Two__
   Three__
   Four__

16. Age relative to other students in same grade level:
   Two years younger than others__
   One year younger than others__
   Same age as others__
   One year older than others__
   Two years older than others__

17. Number of times this student has been retained in grade:
   Never__
   One__
   Two__
   Three or more__

18. Number of days student was absent during the school year:
   10 or less__
   11-20__
   21-30__
   31-40__
   41 or more__

19. Number of times student was suspended (in-school or out-of-school):
   None__
   One__
   Two__
   Three__
   Four or more__
20. Number of times student was expelled during 1987-88 school year:
   None__
   One__
   Two__

21. Number of extra-curricular activities (i.e., school sponsored) in which the student currently participates:
   None__
   One__
   Two__
   Three__
   Four or more__

22. Estimate of the student's sense of self-esteem:
   Very Negative__
   Negative__
   So-so, /In between__
   Positive__
   Very Positive__

23. Average grades student received last year:
   F__
   D__
   C__
   B__
   A__

24. Has the student been diagnosed as being in a special education category?
   No__
   Learning disabled__
   Mentally retarded__
   Physically handicapped__
   Deaf__
   Blind__
   Other__

25. Has the student changed his or her place of residence during the past year?
   No__
   Yes__

26. Has the student changed the school that he or she attends during the past year?
   No__
   Yes__

27. Have either of the student's parents had a major change on health status during the past year?
   No__
   Yes__
28. Has the student had either a father or mother die during the past year?
   No___
   Yes___

29. Did a parent attempt suicide during the past year?
   No___
   Yes___

30. Did a parent lose his or her job during the past year?
   No___
   Yes___

31. Did the student's parents go through a divorce or separation during the past year?
   No___
   Yes___

32. Did the student have a close friend who died during the past year?
   No___
   Yes___

33. Did the student have a close friend who died during the past year?
   No___
   Yes___

34. Did a brother or sister die during the past year?
   No___
   Yes___

35. Was the student dropped from an athletic team during the past year?
   No___
   Yes___

36. Did the student attempt suicide during the past year?
   No___
   Yes___

37. Did a pregnancy occur during the past year?
   No___
   Yes___

38. Is there evidence that the student has been using drugs or engaged in substance abuse of any kind during the year?
   No___
   Yes___
39. Is there evidence that the student has been selling or pushing drugs of any kind during the past year?  
   No  
   Yes  

40. Has a family member used drugs during the past year?  
   No  
   Yes  

41. Is there evidence that the student has been drinking alcohol during the past year?  
   No  
   Yes  

42. Is there evidence that either parent drank excessively or was an alcoholic during the past year?  
   No  
   Yes  

43. Is there evidence that the student was arrested for driving while intoxicated during the past year?  
   No  
   Yes  

44. Is there evidence that the student was arrested or convicted for any illegal activity during the past year?  
   No  
   Yes  

45. Is there evidence that the student was abused, sexually or physically, during the past year?  
   No  
   Yes  

46. Was this student placed in a class that was smaller than typical for instructional purposes?  
   No  
   Yes  

47. Has this student been provided computerized instruction opportunities?  
   No  
   Yes  

48. Has this student been placed in a low group or lower track courses?  
   No  
   Yes  

49. Has this student been referred to special education for diagnosis or instruction?  
   No  
   Yes
50. Has the school provided individualized instruction to this student?
   No__  Yes__

51. Has the school provided flexible scheduling for the student?
   No__  Yes__

52. Has the school provided flexible scheduling for the student?
   No__  Yes__

53. Has the school provided extra homework for this student?
   No__  Yes__

54. Has the school provided extra opportunities for parental involvement for this student?
   No__  Yes__

55. Has the school provided extra instruction in the basic skills for this student?
   No__  Yes__

56. Has the school referred this child to the psychologist or for other special services?
   No__  Yes__

57. Has the school provided special instructional materials for this student?
   No__  Yes__

58. Has the school provided special teachers for this student?
   No__  Yes__