TEST OF RESILIENCY MODELS ON DEPRESSIVE SYMPTOMATOLOGY AMONG SUBSTANCE ABUSING RUNAWAYS AND THEIR PRIMARY CARETAKERS

THESIS

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ABSTRACT

Research focus on understanding at risk youth and families is often driven by a deficit model and few evaluations of at-risk youth and their strengths, competence and resilience are available. Models of resiliency have the potential to provide information regarding how at-risk youth and their families cope with adversity. This information can be used to identify targets for preventative interventions. In the current study, the differential utility of three models of resiliency, for predicting depressive symptomatology in a high risk sample of substance abusing runaway youth and their primary caretakers, were evaluated. Findings supported the challenge model for predicting adolescent depressive symptoms, though no model was effective for understanding resilience among their primary caretakers. In addition, risk and protective factors differed by adolescent gender and between primary caretakers and the adolescent. In summary, even in the face of significant stress and risk for depressive symptoms, family members showed significant strengths which buffered their experience of depressive symptoms. The findings also suggest that moderate levels of risk can be beneficial for the runaway adolescents, consonant with the challenge model of resiliency.
Dedicated to my resilient family
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CHAPTER 1

INTRODUCTION

Youth homelessness has gained recognition as a critical social problem in the U.S. Runaway youth are one of the most understudied and vulnerable homeless population nationwide. The National Runaway Switchboard (2001) estimates that everyday 1.3 million runaway and homeless youth live on the streets of America and one out of every seven children will run away before the age of 18 (Son, 2002).

Given the growing problem of youth homelessness, research focus on runaway youth has increased in recent years. Several studies have focused on a variety of psychosocial factors associated with running away as well as the consequences of the runaway behavior. Research concludes that families with a runaway adolescent cope with significant amounts of family and individual stress (Dadds et al., 1993; Patel & Greydanus, 2002). These families have been characterized as having poor interpersonal relationships (Thompson, Maguin, & Pollio, 2003), high levels of family conflict (Whitbeck & Hoyt, 1999) including parental abuse of children as well as neglect (Bao, 2000).

In addition to the dysfunctional family interactions, runaway youth report a variety of emotional and behavioral struggles such as high rates of alcohol and drug abuse (Greene, Ennett, & Ringwalt, 1997), and poor conflict resolution skills (Whitbeck
& Hoyt, 1999). These youth are susceptible to depression, with 29% to 83.6% of runaway youth meeting diagnostic criteria (Shaffer & Caton, 1984; Unger et al., 1997; Yates et al., 1988). Research suggests that these youth are at higher risk for attempting suicide than adolescents in the general population (33-50% versus 2-13%, respectively) (Greene & Ringwalt, 1996; Yoder, 1999).

Given that runaway youth and their families experience significant stress and conflict, conceptualization of depression as an interpersonal phenomenon is crucial. Family oriented researchers assert that depression is best understood when considering interactions among family members (Coyne, 1976; Lara & Klein, 1999; Sheeber, Hops, & Davis, 2001). Some studies indicate that parental depression predicts depression among children and adolescents, especially among mothers and daughters (Davies & Windle, 1997; Slesnick & Waldron, 1997). Family systems researchers have shown that families with a depressed member show deficits in communication and interpersonal relations (Hughes & Gullone, 2008; Slesnick & Waldron, 1997).

From a family systems perspective, several risk and protective factors have been associated with depressive symptomatology among adolescents and their families. In particular, several studies suggest that higher levels of perceived family conflict (Cole & McPherson, 1993; Forehand, Biggar, & Kotchick, 1998) and verbal aggressiveness (Gracia, 1995; McGee et al., 1997) are risk factors for depression among family members. Higher perceived family cohesion or bonding functions as a protective factor within the family, decreasing the levels of depressive symptoms for both adolescents (Barber & Buehler, 1996) and parents (Farrell & Barnes, 1993).
Coping strategies also predict mental and physical well-being (Haley, et al., 2004), problematic substance use, suicidality, and depression (Kidd & Carroll, 2007; Votta & Manion, 2003). Studies show that task-oriented coping is a positive coping strategy, while emotion-focused and avoidance coping are negative (Billings & Moos, 1982). Thus, task oriented coping is related to resilience, by which youths’ task oriented coping protects against depressive symptoms. Although familial and individual correlates of adolescent and parental depression within the family have been well-documented in the literature, most studies have focused on the normative samples. That is, depressive symptomatology within the families of runaways needs to be further explored.

Another gap in the literature is that the majority of studies have explored problems experienced by these at-risk youth and families with intervention studies often taking a deficit perspective that focus on decreasing youth problem behaviors. Few studies have examined the strengths among members in at risk families including families of runaway youth. As Kumpfer and Alvarado (2003) suggested in their review of prevention programs, interventions that targeted increasing strengths in the family, enhancing parenting skills and utilizing communication in the family, were most effective in decreasing youth problem behavior (p. 458). This strategy, to learn from the strengths of families coping with stress, might help to identify effective prevention strategies to enhance positive youth development and family functioning (Zimmerman & Arunkumar, 1994).

This study addressed the need in the literature to reveal the strengths, rather than deficits, in the family system among substance-abusing runaway adolescents and their primary caretakers. Identification of the strengths of runaway youth and their primary
caretakers can provide useful information about how families overcome and resist risks. Thus, the resiliency perspective was utilized in the current study as a framework for understanding the relationships between risk and protective factors of depressive symptoms in the family system. Resilience refers to “a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development” (Masten, 2001, p. 228). In this framework, risk factors increase the likelihood of a negative outcome whereas protective factors either compensate or negate the occurrence of a negative outcome.

The present study used existing data collected from substance abusing runaways and their primary caretakers in Columbus, Ohio. The proposed model for predicting adolescent and primary caretakers’ depressive symptoms included protective factors (family cohesion, task oriented coping) and risk factors (family conflict, verbal aggression of parent, verbal aggression of adolescent, and depression of the other family member). Three models of resiliency (Compensatory, Risk-Protective, and Challenge Models) were tested to determine which model was most useful in explaining adolescent and primary caretaker resilience to depressive symptomatology. According to the resilience framework (Garmezy, Masten, & Tellegen, 1984), The Compensatory Model suggests that risk factors have independent and direct effects on increasing a negative outcome while protective factors counteract or neutralize the effects of risk by having a direct effect on the outcome (Garmezy, Masten, & Tellegen, 1984; Masten et al., 1988). The Risk-Protective Model suggests that protective factors interact with risk factors to produce a buffering effect that can dampen or amplify the impact of the risk factor on the outcome (Garmezy, Masten, & Tellegen, 1984; Masten, 2001). Finally, the Challenge
Model asserts that a moderate amount of risk exposure is more beneficial than no exposure to risk in reducing the negative outcome (Garmezy, Masten, & Tellegen, 1984; Masten, 2001). That is, the presence of risk factors can enhancers the positive outcome. The primary goal of the current study was to test these models of resiliency on depressive symptomatology of substance abusing, runaway youth and their primary caretakers. To that aim, the analysis focused on two major steps. First, the independent effects of risk and protective factors associated with depressive symptoms were explored. Second, the cumulative effects of risk and protective factors in relation to each other were tested via resiliency models. This study is unique in the sense that resiliency models have never been empirically tested on runaways as a sub-population of at-risk youth. Discovering the strengths and coping mechanisms of the families with runaways has crucial implications not only for preventing adolescent problem behaviors and transition to homelessness but also for promoting positive youth development despite adverse conditions.
2.1 Construct of Resilience

‘Resiliency’ or ‘construct of resilience’ is an umbrella term, emphasizing the ability of individuals to achieve positive and normative development despite challenging conditions, risks and stressors in their lives (Masten, 2001; Waller, 2001; Zimmerman, & Arunkumar, 1994). The resilience approach proposes a paradigm shift from problem-oriented, deficit based approach to understanding strengths of individuals. The operationalization of the construct has three important dimensions. First, the individual is claimed to be ‘at-risk’ only if s/he is exposed to adverse conditions. These conditions could involve either chronic stressors such as challenging life circumstances (i.e. parental psychopathology, poverty, racism) or acute stressors like traumatic life experiences and events (i.e. death of a parent, parental divorce, abuse) (Garmezy, 1971; Luthar, 1993; Waller, 2001). Second, the individual develops positive outcomes despite these risks. Positive outcomes could refer to lacking any type of psychopathology or achieving healthy, normative development in adulthood (Garmezy, 1971; Luthar, 1993). These outcomes might be related to the well-being of the individual in terms of social, emotional and cognitive competence. Third, the term adaptability emphasizes the dynamic nature of the construct where the individual is actively involved in utilizing
his/her own agency. Throughout development, the individual rebounds from the stressful situation, reintegrates, and achieves empowerment (Masten, 2001).

The construct of resilience emerged through empirical findings of longitudinal research on at-risk children in developmental psychopathology and psychiatry in the early 1970s (Cowen, 1988; Waller, 2001). Project Competence in the US (Garmezy, 1983; Garmezy & Tellegen, 1984), Kauai Longitudinal Study (Werner & Smith, 1982), and Isle of Wight Studies in the UK (Rutter et al., 1975; 1979) were the pioneers of the resilience approach. These studies on the characteristics of ‘survivors’ revealed that many children who experienced chronic and profound stressors could still manifest competence and develop to be healthy adults (Cowen, 1988; Richardson, 2002). These findings drew attention of the researchers to exploring how these children were able to beat the odds in their lives and maintain their well-being. To that aim, early studies on resilience typically explored mental health, coping, academic and social competence of at-risk children (Olsson et al., 2003; Waller, 2001).

Early resilience research had an individualistic approach in understanding single effects of risk and protective factors on building resilience (Dyer & McGuinnes, 1996). In that framework, resilience referred to a human potential and personal strength (Anthony, 1974; Werner & Smith 1982). The definition relied solely on an individual’s ability to achieve positive outcomes. Within-person factors, mainly temperament, cognitive abilities (intelligence), personality traits, and coping skills, were major determinants of resilience (Luthar, 2003; Waller, 2001). Since the definitions had strong emphases on the success of the individual, resilient children were named ‘hardy,’ ‘invulnerable,’ ‘invincible’, ‘super kids’, ‘survivors’, and ‘stress resistant’ (Luthar, 2003;
Masten, 2001; Waller, 2001).

However, the second generation of resilience researchers argued that the conceptualization of resilience as focused on within-person factors promoted the view that non-resilient individuals were “deficient, weak, blameworthy,” “personally responsible of their failure,” and they “failed” to solve their problems on their own (Walsh, 1998). This individualistic approach was criticized for overvaluing human agency for healthy development and for “blaming the victim” for any failure (Luthar, 2003; Walsh, 1998).

The ecosystemic/ecological framework of resilience, on the other hand, emphasized the dynamic interaction of risk and protective factors at different systemic levels, including family, community and society (Dyer & McGuinnes, 1996). In this framework, resilience is not a stable, inherent personal characteristic, but an outcome of the bidirectional relationship and mutual adaptation between the individual and his/her environment (Rutter, 1985, 1987). That is, Bronfenbrenner’s ecological systems perspective was incorporated in resilience research, conceptualizing human development as nested in multiple systems of ecology (Bronfenbrenner, 1979). Within this model, the individual not only adapts to the environment, but the environment positively or adversely affects the individual’s development. Resilience, in that perspective, is a dynamic, interrelational construct, it is a product of the transaction within and between multiple systems of development (Luthar, Cicchetti, & Becker, 2000).

The study of ‘healthy kids in stressful situations’ from an ecological perspective gained further significance with the convergence of resilience research with the prevention field (Coie et al, 1993; Zimmerman & Arunkumar, 1994). Researchers began
to explore how risk and protective factors pervade multiple domains of development—that is, stressful life events and protective processes do not occur in isolation, but in combination with other factors. Identification of risk and protective factors became the crucial concern of researchers to explore resilience of at-risk children. A risk factor, in prevention research, is defined as a potential precursor of a dysfunction in health (Coie et al., 1993; Fraser & Richman, 1999). A risk factor refers to a condition that either increases the likelihood of onset, severity or duration of a disorder, psychological problem or a negative outcome (Earvolino-Ramirez, 2007). A protective factor, on the other hand, is defined as a condition that eliminates the effects of risk, and is associated with health functioning of the individual (Fraser & Richman, 1999; Zimmerman & Arunkumar, 1994). Since exposure to risk and protective factors occur in diverse settings and systems of development, resilience develops in a cumulative fashion between additive or multiplicative effects of these precursors (Fraser & Richman, 1999; Zimmerman & Arunkumar, 1994). Thus, risk and protective factors can occur at the individual level (i.e. neurobiological disorders, intelligence, social competence, and religiosity), family level (i.e. parental monitoring, family conflict), community (i.e. community bonding, cohesion, detachment) or societal level (poverty, racism) (Coie et al., 1993).

Since the resilience approach originated from mental health practice, it has potential implications for preventative and therapeutic interventions. Using this framework, preventative efforts target at-risk children or youth in stressful situations and focus on decreasing or eliminating the risk factors and enhancing protective factors within various contexts of development. Thus, the major goal is building new
psychosocial skills as well as enhancing the available strengths and resources within the ecological contexts of the individual.

2.2 Resiliency Models

Researchers who take an ecological perspective of resilience argue that resilience is a quantifiable phenomenon of normative development and can be tested empirically via series of statistical procedures and analyses (Garmezy, Masten, & Tellegen, 1984, Masten et al., 1988). Several models of resiliency were developed by early resiliency researchers. These models tested interactions between risk and protective factors and how they related to the outcome of interest (Garmezy, Masten, & Tellegen, 1984). There are three major models of resiliency in the current literature, as presented in Figure 1. The operational definitions of resiliency models and the statistical approaches to test these models are as follows:

The Compensatory Model suggests that risk factors have independent and direct effects on increasing a negative outcome while protective factors counteract or neutralize the effects of risk by having a direct effect on the outcome (Garmezy, Masten, & Tellegen, 1984; Masten et al., 1988). As shown in Model A of Figure 1, risk and protective factors combine additively to predict the outcome variable, and they have direct effects on the outcome variable. Since the compensatory model of resiliency proposes independent effects of risk and protective factors, this model would be statistically supported only if both main effects of risk and protective factors are significant in the regression analysis (Garmezy, Masten, & Tellegen, 1984).

The Risk-Protective Model, sometimes referred to as “Buffering Model”
“Moderation Model”, or “Multiplicative Model” (Masten, 2001), is the most widely studied model in the literature (Zimmerman & Arunkumar, 1994). In this model, protective factors interact with risk factors to produce a buffering effect that can dampen or amplify the impact of the risk factors on the outcome (Garmezy, Masten, & Tellegen, 1984; Masten, 2001). That is, a protective factor moderates the effect of the risk factor on the outcome of interest (Figure 1, Model B). Due to this interaction between risk and protective factors, this model suggests that protective factors have a greater effect on the outcome at one particular level of risk than other levels of risk (Garmezy, Masten, & Tellegen, 1984). Statistically, the risk-protective model is tested in the regression analysis by adding an interaction term to the equation. This model is supported when the interaction effect of the risk and protective factors is significant in the regression equation (Garmezy, Masten, & Tellegen, 1984).

It is important to note that the Risk-Protective model outlines a different relationship between risk and protective factors than the compensatory model. In the interactive model, protective factors have an indirect effect on the outcome through risk factors (i.e., they buffer the effects of risk on the outcome) while in compensatory model, protective factors directly affect the outcome and independently compensate for the effects of risk factors.

The Challenge Model, also referred to as “Inoculation” or “Steeling Model” (Rutter, 1987), suggests that a moderate amount of risk exposure is more beneficial than no exposure to risk in reducing the negative outcome (Garmezy, Masten, & Tellegen, 1984; Masten, 2001). That is, certain levels of risk factors function as potential enhancers of the positive outcome variable (Figure 1, Model C). Zimmerman and Arunkumar
(1994) argue that, moderate, rather than a low or high level of risk may be a “protective” factor since moderate risk provides a *challenge* for the individual: the challenge is not easy, but is possible to overcome (p. 6). This model claims that once the challenge is met, one has the potential to strengthen his/her competence to prepare for the next difficulty (Zimmerman & Arunkumar, 1994).

This model has rarely been tested in the resiliency literature since researchers typically focus on functions of protective factors, whereas primary concern of challenge model is the effect of different levels of risk on outcome (Masten, 2001). Due to the differential effects of risk exposure, the ideal way of testing the challenge model of resiliency is utilizing longitudinal data. Zimmerman and Arunkumar (1994) suggest assessing the challenge model using path or structural equation modeling in a longitudinal dataset so that the developmental trajectories of the individual under changing levels of risk can be examined. However, early resiliency researchers propose that the challenge model can be tested via hierarchical regression analysis in cross-sectional data (Garmezy, Masten, & Tellegen, 1984). According to that recommended analysis, the challenge model is tested by adding a quadratic term of risk factors (interaction of risk and risk factors) in the regression equation. Since the model implies a curvilinear relationship between risk and outcome variables, statistical significance of this quadratic term supports the model (Garmezy, Masten, & Tellegen, 1984).

It is important to note that the models of resiliency are not mutually exclusive (Masten, 2001; Zimmerman & Arunkumar, 1994). That is, a protective factor might compensate for a risk factor in predicting an outcome, whereas the same protective factor might interact with a risk factor to have a different effect on a different outcome. Thus,
different effects of risk and protective factors on a given domain are crucial to consider since the implications could be different for subpopulations of at-risk youth, including substance abusing runaways.

2.3 Family Systems Approach and Family Resilience

The family systems perspective conceptualizes the family as an organized whole of social interactions in which all family members are interdependent and interconnected (Bowen, 1978; Minuchin, 1985). Rather than focusing on the particular components and separate parts of a system, the family systems approach emphasizes the interactions between multiple parts within the system (White & Klein, 2002). That is, the family is an emotional unit where behaviors of each member are reciprocally influenced by the organization of the family as a system. In that framework, family members respond and adjust to each other’s needs and expectations (White & Klein, 2002). Each member is expected to play a role in the system, and fulfill the agreed upon definitions of a particular role. Connectivity and reactivity between family members further make individuals interdependent (White & Klein, 2002). As these social interactions are repeated, boundaries and patterns develop in the family that either maintain the equilibrium in the system or change the existing patterns to achieve equilibrium (Bowen, 1978).

The family systems approach further states that families are complex, organized, and emotional systems where subsystems of dyadic relationships (i.e. parent-child subsystem, sibling sub-system, spouse subsystem) also exist (Bowen, 1978; Minuchin, 1985). These subsystems interact with each other and are influenced by the behaviors of
the family members. In this reciprocal relationship, the individual not only effects the dynamics of subsystems and the system as a whole, but is also influenced by the systems within which s/he is nested (Bowen, 1978; Minuchin, 1985). That is, behaviors of a particular family member create a cycle of interaction between family members in the family system which is hypothesized to result in feedback to that family member (White & Klein, 2002).

The family systems has been also utilized in understanding psychopathology within the family (Bowen, 1978). Contrary to the individualistic perspective of psychiatry, the family systems approach conceptualizes psychopathology as a symptom of malfunction within the family system, rather than a symptom of a personal disorder that the family member is suffering from (Bowen, 1978). Moreover, it is claimed that psychopathology of a family member initiates a circular interaction pattern, having an impact on the functioning of the whole family system as well as its subsystems which in turn influences the individual (Bowen, 1978).

Given that the family systems approach provides an adequate perspective in understanding complex interactions in both normative and dysfunctional families, some researchers claim that this approach could be integrated with the construct of resilience (Walsh, 1998). Since the ecosystemic/ecological framework of resilience focuses on the specific layers and domains of systems that the individual is nested in, it is suggested that family context as a microsystem of development could be conceptualized and analyzed from a family systems perspective.

Furthermore, one of the methodological and conceptual problems of resilience research is a need for a framework to explain mechanisms of change, adaptation and
normative development that the individual goes through (Luthar, 1993; Masten, 2001). As Luthar (1993) argues, resilience is context dependent and context specific. That is, an individual might show competencies in one context, but might fail to function in a different context. As a result, Luthar warns researchers in overgeneralizing resilience across multiple contexts and recommends taking into account the specific characteristics of a given system. Likewise, resilience researchers who primarily focus on the family as a particular ecology of development propose that the family systems perspective sheds light on explaining dynamics of resilience in the family context. As a result, the construct of family resilience emerged as an attempt to integrate the family systems perspective, ecological framework of resilience, and the principles of interactions between risk and protective factors (Walsh, 1998).

Hawley and DeHaan (1996), define family resilience as “the path a family follows as it adapts and prospers in the face of stress, both in the present and over time.” (p. 293). As the principles of adaptation and adjustment suggest, resilient families develop their unique ways of responding to the adverse conditions through an interactive combination of risk and protective factors within the family system. Rutter (1987) argues that resilience results from successful engagement with risk, rather than the avoidance or evasion of risk. Similarly, family resilience outlines the family’s and family members’ capabilities to achieve a high level of functioning despite significant risks. From a family systems perspective, the dynamic interplay between risk and protective factors influence not only the individual, but all subsystems of family and the family system as a whole. Since the members are connected, resilience might occur in family interaction patterns as
the adaptive response of one particular member repeats itself for the sake of maintaining the equilibrium.

In line with that integrative approach, protective mechanisms in the family resilience framework coincide with the characteristics of well functioning families in when using a systems perspective. That is, family cohesion and connectedness are protective for family members (Walsh, 1998; 2002). Risk factors, on the other hand, reveal the characteristics of chronically stressed families, such as high levels of conflict, abuse and hostility (Walsh, 1998; 2002).
CHAPTER 3

LITERATURE REVIEW

3.1 Early Resiliency Literature

In the early 1970s, the majority of the studies in developmental psychology and psychiatry focused on negative effects of chronic stress on cognitive, social and psychological development of children. That is, researchers were taking a deficit-oriented perspective, investigating the risk factors associated with abnormality. However, few longitudinal studies of that era were considered controversial in terms of understanding normative development of children.

One of the pioneering empirical studies on resiliency is Project Competence (also known as Minnesota Risk Research Project), which is a series of longitudinal studies conducted by Garmezy and his colleagues at the University of Minnesota (Garmezy, 1983; Garmezy & Tellegen, 1984). From a sample of 612 third to six grade children of schizophrenic parents, 200 children were selected to investigate their cognitive and behavioral functioning. These children and their families were studied intensively from 1971 to 1982, using a variety of methodologies. During the data collection process, in-depth interviews were conducted with parents to explore family interaction patterns and stressful life events. Laboratory measures were utilized to assess impulsivity, attention focus and delay of gratification of children. Also, self-report questionnaires were
distributed to teachers, and peers to measure children’s academic and social competence at school. It was found that disadvantaged children with low IQ, low SES and low family functioning were generally less socially and academically competent and showed higher levels of disruptive behavior at school. However, most disadvantaged children did not become maladaptive adults and did not display problem behaviors, but showed high expectancies, self-esteem, self-discipline, good problem solving skills and humor. These findings lead the researchers to focus on how disadvantaged children were able to overcome the stress in their lives.

Another empirical study in the early resiliency literature is Werner and Smith’s (1982) Kauai Longitudinal Study. Researchers studied 700 multiracial children, born on the island of Kauai in 1955. Data were collected over 30 years on 200 children who were at highest risk due to prenatal stress, poverty, and parental psychopathology. Results revealed that about one third of the whole sample showed serious behavior and learning problems until the age of 18, while a specific cohort was significantly more competent than others despite the stress exposure. These children showed relatively lower levels of disruptive behaviors. In the long run, they developed to be socially responsible, tolerant, achievement oriented and self-confident adults. Werner and Smith (1982) further evaluated this sub-population of ‘invincible’ children and found that they were affectionate, socially responsive, and easy tempered in infancy, they had warm and supportive families and received peer and adult support throughout their development. The researchers emphasized the personal characteristics and hardiness of these ‘invincible’ children and raised questions about protective factors for at-risk children to achieve good developmental outcomes.
British psychiatrist Michael Rutter and his associates (Rutter et al., 1975; 1979) conducted a longitudinal study in rural island of Wight and inner-city London and studied 125 children of clinically diagnosed mentally ill parents over a decade. It was found that approximately one-quarter of the children did not become mentally ill themselves or show maladaptive behavior. Rutter (1979) identified these children as ‘invulnerable’ since they were ‘steeled adjustively to traumatic experiences and chronic stress.’ In order to investigate how these children were able to beat the odds, Rutter (1985) conducted studies on at-risk children and found that resiliency is associated with individual’s competence, self-efficacy, ability to deal with change and problem solving skills.

As these three major studies suggest, early resiliency studies share some important characteristics. First, the primary focus was on infants and children under chronic stress, such as trauma, poverty or severe psychopathology in the family. Second, resilience was investigated through individual’s personality predispositions and temperament in infancy and coping skills throughout the development. Although familial and contextual factors were integrated into the studies, they were treated as ‘control’ factors. Recent work in resilience research addresses these gaps in the early studies, by taking a broader, ecological perspective. However, there is a notable paucity of research on at-risk youth in the resiliency literature and other than the studies described above, adolescent’s development in the face of adversity remains relatively unexplored.
3.2 Resilience and Depression

Family systems researchers conceptualize depression as an interpersonal phenomenon. In that framework, the dynamic interplay of several risk and protective factors are associated with depression among adolescents and their parents.

Risk factors

*Psychopathology in the Family*

As the principle of interdependence and connectedness suggest, a family systems perspective predicts that psychopathology of a family member has an impact on the functioning of other individuals in the system (Hughes & Gullone, 2008). In line with that hypothesis, research suggests that adolescents of depressed parents tend to have high rates of psychiatric disorders, particularly depressive disorders compared to adolescents of non-disordered parents (Biedarman, 2001). Similarly, parents of depressed adolescents report higher levels of distress and depressive symptoms (Davies & Windle, 1997). Taken together, studies on depression in the family system provide additional support for the co-occurrence of psychopathology, particularly depression (Hughes & Gullone, 2008).

*Family Conflict and Aggression*

Characteristics of the family environment have been widely investigated as primary risk factors for depression among family members. Research suggests that family dysfunctionality appear to be associated with both adolescent and parental depression. That is, adolescents whose families show communication problems (Carbonell, Reinherz, & Gioconia, 1998), and high levels of family conflict (Cole & McPherson, 1993; Harold et al., 1997) are at higher risk of having psychological and behavioral problems.
Specifically, adolescent internalizing symptoms were associated with high parent-child conflict (Greenberger & Chen, 1996) and parent-child aggression (Sheeber & Soransen, 1998) in the family system. Similarly, verbal aggressiveness and high family conflict, hostility and discord were related to parental depression (De Ross et al., 1999; Gracia, 1995), but specifically maternal distress (Vendewater & Lansford, 2005). While reciprocal relationships between family conflict, aggression and depression in the family remain unclear, the literature provides convincing evidence showing a strong association between family dysfunction and depression.

Protective factors

*Family Cohesion*

Adolescent and family resilience research has consistently emphasized the importance of family functioning to achieve positive outcomes (Olsson et al., 2003). Family cohesion, parental communication and support are associated with lower levels of internalizing symptoms (Barber & Buehler, 1996; Carbonell, Reinherz, & Gioconia, 1998), and suicidality (Perkins & Jones, 2004). However, the promotive effect of family cohesion in regard to depression is higher for girls than boys (Grossman et al., 1992). That is, being a part of a highly cohesive and connected family enhances the capacity of family members to alleviate distress and promotes resilience to depression, especially for girls (Grossman et al., 1992). Researchers suggest that highly cohesive and caring families are more supportive to family members, and those family members’ social and emotional competencies are enhanced (Olsson et al., 2003; Smith, 1999). Masten et al. (1999) further argue that family cohesion, connectedness and interaction patterns are
global protective factors for adolescents that result in positive outcomes in a variety of domains. Family cohesion is also associated with individual characteristics of the family members such as coping and self-efficacy (Olsson et al., 2003).

*Coping strategies*

Coping is conceptualized as the cognitive and behavioral strategies individuals utilize to tolerate, minimize or escape stress (Billings & Moos, 1982; Lazarus, 1966). Research suggests that adolescents whose coping strategies are centered on problem solving are more resilient to depressiveness (Dumont & Provost, 1999). This task-oriented coping is functional for youth since they seek information and advice from others, are more open to accept social support and are active in solving the problem (Dumont & Provost, 1999). These strategies, in turn, alleviate the level of stress and moderate its effects. From a family systems perspective, the experience of stress in one component of the system has an influence on the whole system. As a result, problem centered coping strategies of an adolescent not only implies a resilient response to family stress, but also functions to benefit family members by reducing the stress in the whole system (Billings & Moos, 1982).

*Studies on Resiliency Models*

Although compensatory and interactive effects of protective factors on adolescent problem behaviors have been intensively investigated, only three studies empirically tested all resiliency models in relation to each other. These studies analyzed resiliency models on different outcomes such as adolescent aggression (Hollister-Wagner, Foshee,
& Jackson, 2001), adolescent victimization (Christiansen & Evans, 2005), and depression/anxiety (Gomez & McLaren, 2006). Overall, risk factors included exposure to violence, family conflict, parental monitoring, social connectedness, and neighborhood cohesion. Protective factors included religiosity, self-esteem, parental support, adult supervision, communication skills, anger management and constructive expression.

Results suggested that mechanisms of resiliency models varied by the selected outcome variable and also by gender. Specifically, the challenge model of resiliency was supported for girls’ aggression, but none of the resiliency models was associated with boys’ aggression. It was also found that as the protective factors increased cumulatively, girls, rather than boys, were less likely to be aggressive (Hollister-Wagner, Foshee, & Jackson, 2001). The challenge model was also supported for adolescent victimization, and there were no gender differences in predicting the victimization experiences of adolescents (Christiansen & Evans, 2005). For adolescent depression and anxiety, resiliency models operated differently for a particular protective factor. For instance, when mother’s support was taken as a protective factor, there was support for compensatory, risk-protective and challenge models of resiliency whereas for father’s support, only the compensatory and challenge models were supported. When these protective factors were evaluated together to predict depression, they showed a cumulative effect of protection for the adolescent. That is, adolescents were least likely to be depressed if both parents were supportive (Gomez & McLaren, 2006).

Although Zimmerman and Arunkumar (1994) propose that it is hard to find empirical support for the challenge model of resiliency, these studies provide evidence for the model in understanding adolescent problem behavior. However, it is important to
note that adolescents in these studies were recruited from either high schools or colleges. That is, adolescents were nested in schools, and the extent to which they were particularly ‘at-risk’ is of question. Support for the challenge model might be spurious, given that high school students are exposed to relatively lower levels of risk - and school samples, by definition, do not include drop-outs and absenteees as highly at-risk youth. Therefore, resiliency models need to be tested on populations that are either chronically under stress or currently exposed to multiple risks. There is a significant need for research to focus on at-risk youth’s capacity and ability for healthy functioning.

3.3 Depression among Runaway Youth and Their Parents

Runaway youth constitute a vulnerable sub-population of youth in adolescent development literature. Runaways are defined as ‘at-risk’ since they experience a variety of life stressor events, and problems on the street. Although some runaways maintain their contact with their families to some extent, they are still prone to detach from the family and become chronically homeless (Son, 2002).

The National Runaway Switchboard (2001) estimated that “every year, assault, illness and suicide claim the lives of approximately 5000 runaway and homeless youth” (p. 2). Runaways report difficulties meeting their basic needs, accessing health care, and many report experiencing mental and physical health problems (Son, 2002). Given the potential stressors in their lives while living on the streets (i.e. victimization, abuse), depression among runaways is prevalent. Research shows that runaway youth are more susceptible to depression, with 29% to 83.6% of runaway youth meeting diagnostic criteria (Shaffer & Caton, 1984; Unger et al., 1997; Yates et al., 1988) and suicide
attempts (33-50% versus 2-13%, respectively) than adolescents in general (Greene & Ringwalt, 1996; Yoder, 1999). Furthermore, significant gender differences were found for depression. That is, runaway females report having greater depression than runaway males (Maxwell, 1992).

Research suggests that families with a runaway adolescent experience significant amounts of stress (Dadds et al., 1993; Patel & Greydanus, 2002). These families have been characterized as ‘dysfunctional’ in the sense that they report having poor interpersonal relationships (Thompson, Maguin, & Pollio, 2003), high levels of family conflict (Whitbeck & Hoyt, 1999), and aggression (Gracia, 1995; McGee et al., 1997). In addition to that, parental substance use and depression are prevalent in families of runaway youth. From a family systems perspective, there is a cyclical relationship between adolescent’s repetitive runaway behavior and family dysfunctionality. One can claim that adolescents run away as a reaction to the problems in the family system which in turn influences the family by escalating the stress. This enhanced stress might provide feedback to the family system, resulting in higher aggression, hostility and conflict that further influence the runaway adolescent. That is, high levels of depressive symptoms of family members in these families might be associated with this process.

Although vulnerability of runaway youth has been intensely investigated, resilience of runaways remains unexplored. Few studies have focused on psychosocial skills of runaway youth, especially in regard to self-efficacy (Son, 2002), self-esteem (Maxwell, 1992) and coping (Landow & Glenwick 1999) as potential contributors to resilience. Some studies, on the other hand, reveal protective effects of peer support (Bao, Whitbeck, & Hoyt, 2000) and service utilization (Kipke et al., 1997) among runaway
youth. However, none of the studies specifically tested resiliency models among these at-risk youth and their families. The current study aims to address this gap in the literature by focusing on the resilience of runaways and their parents.

3.4 The Current Study

The present study aims to shed light on resilience of runaways and their primary caretakers. Taking into account the gaps in the resilience and at-risk youth literature, this empirical test of resiliency is needed for several reasons. First, runaway youth are relatively at higher risk compared to adolescents in general. That is, current findings of resilience studies conducted on high school samples may not be applicable to that of a vulnerable population. Second, the resiliency framework conceptualizes poverty as one of the most important environmental stressors (i.e. Werner & Smith, 1982), but models of resilience have never been tested on economically disadvantaged groups. Third, runaway youth reveal distinctive characteristics compared to other at-risk adolescents. For instance, there is compelling evidence in the adolescent development literature suggesting that when family conflict and violence escalate, boys are more likely to exhibit disruptive and aggressive behaviors while girls tend to internalize and become depressed (Kolbo, 1996). However, it has been shown that runaway girls are relatively more aggressive and delinquent than other adolescent girls (Feitel et al., 1992), and they are more likely to get involved in criminal activities (Patel & Greydanus, 2002). That is, a gender gap in resilience might not apply to runaways, since their life conditions and stressors are distinctive from other populations. Finally, studies on runaway youth and their families focus on individual and environmental risk factors of problem behaviors.
This approach has the potential to blame the victim while a broader perspective on strengths of runaways and their families would be useful to guide effective intervention efforts. To address these issues, the primary goal of this study was to test resiliency models on depressive symptomatology of runaways and their primary caretakers.
CHAPTER 4

RESEARCH DESIGN

4.1 Participants

The data come from a larger study of treatment outcomes among runaway, substance abusing adolescents and their primary caretakers. The baseline data of the original study was utilized for the current project. Data were collected from a sample of 140 adolescents and their primary caretakers who were recruited from the only runaway crisis shelter in Columbus, OH from February 2005 to April 2007. To be eligible for the study, youth had to meet The Department of Health and Human Services’ criteria for either runaway status, defined as ‘being away from home without the permission of his or her parents or legal guardian or is absent from home or place of legal residence at least overnight without permission’ or homeless status, defined as ‘being in a situation in which a youth has no place of shelter and is in need of services and a shelter where he or she can receive supervision and care.’ To participate in the study, youth had to be between the ages of 12 and 17, have the legal option of returning to a home situation (including foster home or with another family member) and meet DSM-IV diagnostic criteria for Psychoactive Substance Use or Alcohol disorder as assessed by the computerized Diagnostic Interview Schedule for Children (CDISC; Shaffer, 1992). Since the original study targeted intervention to families of runaways, youth had to have a
connection with at least one parent, or a surrogate parent (primary caretaker) willing to participate in the study.

Characteristics of the sample were as follows:

*Adolescents*: Of the 140 youth, 72 (51.4%) were female and 68 (48.6%) were male (Table 1). The age of youth ranged from 12 to 17 years (M = 15.5, SD = 1.2). The majority of youth were African American (62.9%) and approximately one third of the youth were White and non-Hispanic (31.4%) whereas 1.4% of youth were Hispanic and 1.4% were American Indian/Alaskan Native. Adolescents reported repetitive runaway episodes, (M = 3.2, SD = 6.3) and high alcohol and substance use with an average percentage of 28.8% days of use in the prior 90 days (Range = 3.42-100, SD = 27.2) (Table 2). Adolescents’ average Beck Depression Inventory-II score was 14.7 (Range = 0-48, SD = 12.5). Girls (M = 17.5) reported significantly higher symptoms of depression than boys (M = 12.3) (F = 5.87, p < .05).

*Primary Caretaker Demographics*: The majority of the primary caretakers were female (85.2%). They ranged in age from 17 to 69 years and averaged 41.5 (SD = 8.5) years old. The ethnic distribution of these primary caretakers included 63.9% African American, 31.6% White, 1.5% Hispanic, and 2.3% American Indian/Alaskan Native. Of the 140 primary caretakers, 91 (65%) reported being the adolescent’s biological mother, 17 (12.1%) reported being the adolescent’s biological father and others (14%) were either relatives (grandmother, aunt, and cousin), or unrelated legal guardians. Primary caretakers’ depressive symptoms, as reported on the BDI-II, averaged 9.73 (Range = 0-46, SD = 9.85). As presented in Table 2, majority of the primary caretakers showed minimal levels of depressive symptoms.
4.2 Procedure

Youth at the runaway shelter who were identified as potentially eligible for participation were interviewed in-person by a research assistant (RA). Recruitment took place in the first 24 hours of youth’s arrival to the shelter. Youth were screened by a RA and those passing eligibility criteria were engaged into the project. Prior to the youth’s assessment, RAs contacted the adolescent’s parent or legal guardian via phone to arrange an appointment to meet, review the study requirements, sign the consent statement, and arrange a time to return to complete their evaluation. Once parental signed consent was obtained, the adolescent’s signed assent was obtained. The interviewer administered the CDISC (Shaffer, 1992) to the adolescent, which included sections on alcohol, marijuana and other substance use to determine formal eligibility. Those who were not eligible continued with the shelter program whereas those who met the diagnostic criteria for substance abuse were included in the study and were administered the self-report and interview questionnaires. The adolescent assessment required approximately three hours to complete and adolescents were reimbursed a $40 gift card at the completion of the interview. Primary caretakers’ assessments were conducted at their home and required one hour to complete. Primary caretakers received $25 cash for their participation. All procedures in the study were approved by the Institutional Review Board at The Ohio State University.

4.3 Measures

The current study utilized various measures to analyze resiliency within the
context of the family. The scales used for the study are presented in Appendix A. Both primary caretakers and their youth completed the following measures.

A demographic questionnaire was used to assess age, gender, ethnicity, education, income sources, school information, and legal history of the family for both adolescents and their primary caretakers. The demographic questionnaire also covered the youth’s runaway behavior as well as the youth’s experiences of homelessness and victimization.

Shaffer’s CDISC (1992) was utilized in the study for determining formal eligibility. CDISC is a computerized instrument, consisting of 263 items. It was developed specifically to measure the criteria for DSM IV diagnoses among children and adolescents. In the current study, only the sections on alcohol and substance use were administered.

The Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) was used to measure youth and primary caretaker depressive symptomatology through the assessment of mood, cognitive and somatic aspects of depression. The BDI is comprised of 21 items rated on a 4 point likert scale, ranging from 0 to 3. These items were summed to create an index of depressive symptoms. Possible scores of the BDI-II ranged from 0 to 63, and higher scores indicate higher levels of depressive symptoms. In the current study, cronbach alphas for adolescents and primary caretakers were .94 and .93, respectively.

The Family Environment Scale (FES; Moos & Moos, 1986) was utilized to assess perceptions of the family environment and family relations. The 90 true-false items identify ten subscales which measure the following social-environmental characteristics of families: Cohesion, Expressivity, Conflict, Independence, Achievement-Orientation,
Cultural-Religious Emphasis, Organization, and Control. Given that family conflict and cohesion have been shown to predict negative communication exchanges in delinquent and clinically referred families (Mas, 1986), these two subscales were used to assess family functioning and disturbance in the current study. After reverse items were coded, 9 items for each subscale were added to compute Conflict and Cohesion subscales. The possible scores ranged from 0 to 9 for each subscale, with higher scores indicating higher levels of cohesion and conflict. Internal consistencies of Conflict and Cohesion ranged from .55 to .73 in the current study.

The Conflict Tactics Scale (CTS; Straus, 1979) was administered to assess the occurrence of various methods of conflict resolution in close relationships. CTS include 36 items, rated on a 0 (never) to 6 (more than 20 times) in a 7 point likert-type scale. The scale has 3 subscales that measure the extent to which reasoning, verbal aggression, and physical violence are employed as a means to resolve disagreements. One advantage of using CTS was that the respondent reports not only his/her own reasoning, verbal aggressiveness, violence in a conflictual situation, but also his/her perception about other family member’s reasoning, verbal aggressiveness, violence. That is, CTS taps into perceived conflict tactics of self and the other, revealing the family interaction patterns in the family system. Given the high level of conflict and high verbal aggression among runaway youth and families (Patel & Greydanus, 2002; Thompson, Maguin, & Pollio, 2003), the verbal aggression subscale was utilized for the study. Each verbal aggressiveness subscale (verbal aggressiveness of self and verbal aggressiveness of other) included 6 items. After controlling for reverse codings, the items were summed up to compute verbal aggressiveness subscales for self and other. Possible range of scores was
from 0 to 36, higher scores indicating higher levels of verbal aggressiveness. Cronbach alphas varied from .65 to .80 for the current sample.

The Coping Inventory for Stressful Situations-Adolescent version (CISS-A; Endler & Parker, 1990) was used to measure youths’ coping. The CISS-A consists of 48 items rated on a 1 (not at all) to 5 (very much) in a 5 point Likert-type scale. The three factor analytically derived subscales are task-oriented coping, emotion-oriented coping, avoidance-oriented coping. Adolescent task oriented coping was utilized for the current study since research shows that task-oriented coping is a positive coping strategy which is related to resilience (Billings & Moos, 1982), and reliability of the scale for this sample was .97.

Table 4 presents the comparison of reliability and descriptive statistics of the study measures between study sample and the standard sample. In general, current sample reveal similar characteristics to distressed/outpatient samples, especially in family conflict and family cohesion measures. Depressive symptoms of primary caretakers and runaway youth are higher than the normative samples, but did not reach the levels of clinical sample. This comparison suggests that depressive symptoms are moderate for the current sample while family functioning is relatively weaker than normative sample.

4.4 Statistical Analysis

Preliminary analyses focused on diagnostic checks to identify characteristics of the data. To that aim, the sample distribution of each variable was examined to verify normal distribution. It was found that the sample distribution of all variables was in an acceptable range of ±1.96 in their skewness and kurtosis. Thus, the assumption of
normality was supported for the current data (Grimm & Yarnold, 2006). Since the research hypothesis required utilization of regression analysis, intercorrelations between variables were also computed to control for possible multicollinearity problems. This diagnostic check was important to test whether the theoretically proposed risk and protective factors had correlations in the expected directions.

After the preliminary analyses were finalized, statistical analyses focused on specific risk and protective factors and their individual effects on depressive symptomatology. To address the first research question, all risk and protective factors were entered in the multiple regression equation in an enter method to test for the independent effects of each variable in predicting adolescents’ and their primary caretakers’ depressive symptoms. This type of regression analysis was preferred since it is advantageous to test models of association as well as partition the variance for each variable (Cohen & Cohen, 1983). Since gender differences in risk and protective factors of depressive symptoms were expected, statistical analysis was conducted separately for boys and girls. Table 3 outlines the proposed model for the multiple linear regression analyses.

The second part of the analysis aimed to address the main research question. That is, the analysis focused on testing the resiliency models via the cumulative effects of risk and protective factors on depressive symptomatology. Based on the Pollard and Hawkins’ (1999) statistical analysis approach, standardized z-scores were calculated for each of the specific predictors since scales had different ranges. Then, z-scores of risk factors for adolescents (primary caretaker depressive symptoms, adolescent’s report of verbal aggression of himself/herself, adolescent’s report of verbal aggression of his/her primary
The same procedure was utilized for computing protective indices, for which z-scores of protective factors for adolescents (adolescent’s report of family cohesion, adolescent’s task oriented coping) and primary caretakers (primary caretaker’s report of family cohesion, adolescent’s task oriented coping) were added and means were calculated to indicate “youth protective index” and “primary caretaker protective index.” Those final indexes reveal the aggregation of multiple factors.

This strategy was utilized to control for challenges in interpretation of multiple risk and protective factors. In the current literature, cut-off scores for identifying risk and protective factors are not standardized (Fergus & Zimmerman, 2005; Zimmerman & Arunkumar, 2005). Moreover, cutting distributions of the scales at a certain percentile may result in dichotomization and therefore further loss of information (Fraser, Richman, & Galinsky, 1999; Pollard, Hawkins, & Arthur, 1999). To address those problems, the aggregation of scores from the means of standardized scales was utilized to compute the cumulative effects of risk factors and protective factors to test for models of resiliency as suggested in similar studies (e.g. Christiansen & Evans, 2005).

Finally, the interaction terms were computed following the suggested procedure in the literature (Garmezy, Masten, & Tellegen, 1984). The risk index and protective index were multiplied to create risk and protective interaction. Similarly, the risk index
and risk index were multiplied to compute for risk and risk interaction (the quadratic term). These indices were utilized to test for risk-protective and challenge models of resiliency, respectively (Fergus & Zimmerman, 2005; Pollard, Hawkins, & Arthur, 1999).

Hierarchical linear regression analysis was utilized to test for compensatory, risk-protective and challenge models of resiliency. This statistical approach was preferred since it allowed the unique effects of each variable in the model to be controlled. The order of entry relied on strategies recommended in the literature (Fraser & Richman, 1999; Garmezy, Masten, & Tellegen, 1984; Pollard, Hawkins, & Arthur, 1999). The risk index was entered first in building the statistical models, followed by the protective index as a second step (Compensatory Model). For the third block, the interaction term of the risk and protective index was included to test for risk-protective model. Finally, the risk and risk index was included in the model as a fourth step to test for challenge model of resiliency.

As Fraser and Richman (1999) suggest, this stepwise approach takes an “immunization” perspective. That is, the risk index serves as a “pathogen” and the effect of the protective index, as a vaccine, would be meaningful only if risk was present. Interaction terms were entered in the final blocks since they would be meaningful only after controlling for the main effects of risk and protective indices.
5.1 Correlational Analysis

Most of the intercorrelations between key study variables for adolescents and their primary caretakers were low to medium in magnitude (Table 5). As expected, risk factors were positively correlated, and protective factors were negatively correlated with the depressive symptoms. Likewise, risk factors were positively correlated with each other, and negatively correlated with the protective factors. Specifically, adolescent depressive symptoms were significantly associated with primary caretaker depressive symptoms (r = .283). Adolescent’s perceived verbal aggression of his/her primary caretaker was highly correlated with adolescents’ own verbal aggression (r = .711). Similarly, primary caretakers’ perceptions of adolescents’ verbal aggression was positively correlated with primary caretakers’ report of their own verbal aggression (r = .723). Perceived family conflict and family cohesion were negatively correlated for both adolescents (r = -.513) and their primary caretakers (r = -.471).

5.2 Independent Effects of Risk and Protective Factors

In an effort to relate these findings to predict depressive symptoms, multiple linear regression was utilized to analyze predictors of primary caretakers’ and
adolescents’ depressive symptoms (Table 6 and Table 7). Results revealed that high family cohesion predicted lower levels of depressive symptoms for primary caretakers (p = .03) and girls (p = .000), functioning as a protective factor within the family system. Adolescents’ depressive symptoms were highly significant predictors of depression for primary caretakers (p = .000). On the other hand, depressive symptoms of primary caretakers functioned as a risk factor only for boys’ depressive symptoms (p = .034). Girls’ depressive symptoms were associated with perceived verbal aggression of their primary caretakers (p = .035). The full models with all variables explained 20%, 18% and 39% of the variance in primary caretakers’, boys’ and girls’ depressive symptoms, respectively.

In summary, results suggested that boys were more likely to report depressive symptoms if their primary caretakers also reported depressive symptoms. Family cohesion was associated with lower levels of depression for girls and their primary caretakers, but not for boys, indicating gender differences in those variables predicting depressive symptoms.

5.3 Test of Resiliency Models

Hierarchical linear regression analysis was utilized to test the models of resiliency. Results showed that for primary caretakers, the risk index was the only significant factor predicting depressive symptoms (Table 8). Total risk exposure explained 8.5% of the variance in the model (p = .028). Since the protective index was not significant (p > .05), there was no support for the compensatory model of resiliency. Although the interaction (risk X protective) and quadratic terms (risk X risk) explained
some additional variance in depression, their effects were not significant. None of the resiliency models was supported for primary caretaker depressive symptoms.

Figure 2 outlines the linear trend of the risk index for primary caretakers. As their levels of risk exposure increased, primary caretakers reported higher levels of depressive symptoms, suggesting evidence for the cumulative effects of risk, but not for resilience.

In addition to that, findings revealed significant gender differences in predicting depressive symptoms among adolescents (Table 9). For girls, neither the risk nor the protective index was significant in predicting depressive symptoms. Since there was no main effect for either index, the compensatory model of resiliency was not supported. The only significant predictor in girls’ depressive symptoms model was the quadratic term (risk X risk) (p = .035). Thus, there was support for the challenge model of resiliency, which accounted for an additional 7.5% variance in depressive symptoms (Table 9).

Contrary to the results for girls, the risk index was a significant predictor of depressive symptoms for boys (p = .035). That is, boys’ depressive symptoms were likely to increase as their levels of exposure to risk increased. However, the challenge model was also supported for boys (p = .010) and the quadratic term suggested a 12% increase in the explained variance in depressive symptoms. The final model of resiliency explained 22% and 23% of variance in depressive symptoms of girls and boys, respectively (Table 9). Figure 2 illustrates the curvilinear trend of depressive symptoms and risk exposure for boys and girls. Thus, low and high levels of risk were associated with higher depressive symptoms among adolescents regardless of gender. In other words, adolescents were more resilient to depression at medium levels of risk exposure.
CHAPTER 6

DISCUSSION

The aim of the current study was to test the effectiveness of three resiliency models for understanding the relationship among risk and protective factors and depressive symptoms among runaway youth and their primary caretakers. Results showed that depressive symptoms were related to perceptions of the family environment and family interactions. Also, the risk and protective factors associated with depression symptoms were different for primary caretakers than for adolescents. Among adolescents, risk factors predicted depressive symptomatology in a cumulative fashion, and regardless of gender, the challenge model of resiliency was supported. Contrary to expectations, no model of resiliency was supported for understanding primary caretakers’ depressive symptoms.

**Adolescents**

This study showed that boys were more likely to report depressive symptoms if their primary caretaker had also reported high levels of depressive symptoms. As verbal aggression, family conflict and depressive symptoms of primary caretakers increased cumulatively, boys’ depressive symptoms also increased. However, when the risks within
the family system were in the moderate range, versus high or low, boys were less likely to report depressive symptoms supporting the challenge model of resiliency. It is important to note that none of the individual protective factors in the model was supported whereas the overall moderate level of aggregated risk, both at individual and family level, was the protective factor for boys.

The challenge model of resiliency was also supported for girls. In addition, higher levels of primary caretakers’ verbal aggression was associated with higher depressive symptoms. Also, girls benefited from family cohesion which was negatively associated with their depressive symptoms. Thus, family cohesion functioned as a protective factor.

In sum, as hypothesized, gender differences in risk and protective factors among adolescents were found. These differences are important to consider since they suggest that although the challenge model was supported for both girls and boys, different factors operated within this model to contribute to depressive symptoms. That is, susceptibility of depressive symptoms was related to primary caretakers’ depressive levels for boys, and primary caretakers’ verbal aggression for girls. Although in this study girls reported protective mechanisms such as family cohesion, the compensatory model of resiliency was not supported for either girls or boys. Specifically, adolescents who experienced moderate levels of primary caretaker depressive symptoms, in addition to family conflict and verbal aggression, had lower levels of depressive symptoms compared to those who experienced either low or high risk exposure. That is, the results indicate that the levels of risk factors, rather than the availability of protective factors, were associated with adolescents’ depressive symptoms.

*Support for the Challenge Model*
The challenge model of resiliency asserts that a moderate level of risk is functional since it provides an opportunity for the individual to resist adversity and develop the skills to cope effectively. Thus, the current study revealed that youth could function relatively better, even if protective factors were not available or adequate in the family system, as long as the risks were moderate.

Prevention researchers have focused on either reducing risk factors or increasing protective factors to promote positive youth development (Catalano et al., 2001). However, the current study suggests that risks, at least in this sample, are not necessarily ‘negative’, rather, their association with depressive symptoms of youth differs due to the level of risk. That is, the functioning of risk is complex and depends not only on the presence of risk but also on how risks relate to other risks. The intensity, or level of risk, is also crucial to consider when implementing prevention and treatment strategies.

*Primary Caretakers*

In the present study, primary caretakers’ verbal aggression was associated with girls’ depressive symptoms while primary caretakers’ depressive symptoms were related to boys’ depressive symptoms. These gender differences with respect to primary caretaker aggression and depressive symptoms reveal that risk factors vary by gender in the family system, due to different interaction patterns. Further research is needed to explore how verbal aggression and depressive symptoms interact dynamically over time. In the present study, there did not appear to be a relationship between primary caretakers’ verbal aggression and boys’ report of depressive symptoms. Instead, only depressive behavior among primary caretakers was a risk factor for boys’ depressive symptoms.
Although family cohesion was found to protect against primary caretakers’ depressive symptoms, the cumulative effects of protective factors within the family neither compensated for, nor interacted with, the risk factors of primary caretakers’ depressive symptoms. Thus, family cohesion was a substantial protective factor in the family, but it alone was not sufficient to eliminate or terminate the effects of aggregated risks within the family system. As the levels of adolescent depression, family conflict and aggression increased cumulatively, primary caretakers, regardless of the cohesiveness of their families, were more likely to report depressive symptoms. Future research is needed to explore temporal ordering of these relationships.

The failure to find support for any of the resiliency models for primary caretakers should be interpreted cautiously. It does not necessarily indicate that primary caretakers are not ‘resilient.’ Although primary caretakers might be expected to cope with depressive symptoms through family cohesion (e.g., receiving/providing support from/to family members), they appear to need more protective mechanisms as the level of depressive symptoms in their youth increase. Future research is needed to identify other protective factors for primary caretakers that could potentially be targeted by intervention strategies.

Limitations

Several limitations of the current study need to be considered when evaluating the findings. First, the current study used a cross sectional design but a longitudinal design would offer the ability to assess how the relationship between risk and protective factors changes over time (Garmezy, Masten, & Tellegen, 1984). Thus, longitudinal data is
needed in order to examine the temporal ordering of events and draw conclusions regarding causality.

Another limitation was that the current study focused on resilience only at family and individual level, whereas the ecological framework conceptualizes resilience as a multifaceted and multidimensional construct that is pervasive across different systems of development. Further research is needed to explore resilience of runaway youth and their families at the community and societal levels.

Furthermore, statistical analysis implied a limitation to the study since it relied on creating composite scores to examine the cumulative effects of risk and protective factors. This strategy inevitably results in the loss of information regarding the effects of each individual variable (Fraser, Richman, & Galinsky, 1999; Luthar, 1993; Masten, 2001). That is, each risk and protective factor was given an equal weight in contributing to the outcome when risk and protective indexes were computed. However, there is no consensus in the resiliency literature to utilize a specific statistical procedure (Masten, 2001). To address this problem, full models that included all risk and protective factors were run before the cumulative risk and protective factors were tested for resiliency. This strategy was utilized to clarify the results and validate interpretation of findings.

Finally, the extant literature on resilience does not provide an agreed upon operationalization and measurement of adolescent and family resilience (Fraser, Richman, & Galinsky, 1999; Luthar, 1993; Masten, 2001). In addition to that, resiliency, by definition, is a context-specific phenomenon that makes it difficult to operationalize, analyze and evaluate for research (Luthar, 1993). One common problem is that findings
differ due to the definitions of risk and protective factors. These problems of validity are a considerable limitation for the current study.
CHAPTER 7

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Despite these limitations, the current study is unique in its focus on testing resiliency models with at-risk youth. Research suggests that resiliency models are usually tested on general adolescent populations, primarily high school students whose protective mechanisms are functioning properly while risk exposure is relatively lower than special populations (Fraser, Richman, & Galinsky, 1999). To our knowledge, this is the first study that attempts to systematically operationalize and test resiliency theory among runaway youth and their primary caretakers. Findings provide support for the challenge model of resiliency which is very controversial in terms of implications for interventions. This is an important contribution to the literature since the current findings suggest that resiliency models may operate differently for runaways as a sub-population of at-risk youth compared to the general population of adolescents.

Another contribution is that the present study captures the available protective mechanisms and strengths within the family system of substance abusing runaway youth. Even though at-risk families are ‘vulnerable’ to experiencing higher levels of depressive symptoms, successful coping mechanisms are also present in the family system.

Taking into account the findings of the current study, several implications for future studies, preventative interventions, and family therapy strategies can be offered.
Although prevention strategies usually aim to decrease risk factors (Catalano et al., 2001), support for the challenge model of resiliency in this study suggests that moderate risk can benefit runaway youth. Since family cohesion was associated with lower levels of depressive symptoms among primary caretakers, future research might determine that enhancing family cohesion can promote well-being among family members. More research is needed to shed light on effective strategies that utilize the challenge model of resiliency for understanding resilience and intervening in the lives of at risk youth and their families.
BIBLIOGRAPHY


Interpersonal and Biological Processes, 39(1), 28-40.


of Orthopsychiatry, 57(3), 316-331.


APPENDIX A

MEASURES
Demographic Questionnaires

Intake Demographic Interview
Primary Caretaker

(Legal guardian and/or primary adult responsible for care of adolescent)

Demographics
1. Gender: M / F

2. Relationship with adolescent:
   Mother: _____   Father: _____   Other (state relationship): ______

3. Age: ______

4. Ethnic group:
   ____ (1) American Indian or Alaskan Native
   ____ (2) Asian, Asian-American, or Pacific Islander
   ____ (3) Black or African-American
   ____ (4) Hispanic, Cuban
   ____ (5) Hispanic, Mexican
   ____ (6) Hispanic, New Mexican (or Spanish-American)
   ____ (7) Hispanic, Puerto-Rican
   ____ (8) Hispanic, Other Latin American
   ____ (9) White, not of Hispanic origin
   ____ (10) Other: Please specify: ____________________

13. **Current** Marital Status (Check one for each):
    Primary Caretaker (You)          Adolescent’s Birth Parents
    ____ (1) Single, never been married  ____ (1) Single, never been married
    ____ (2) Legally married (for how many years?___)  ____ (2) Legally married
    ____ (3) Cohabiting with a partner  ____ (3) Cohabiting with a partner
    ____ (4) Separated but still married  ____ (4) Separated but still married
    ____ (5) Divorced  ____ (5) Divorced
    ____ (6) Widowed  ____ (6) Widowed

14. Employment Status
    (Check one for primary caretaker and one for Other Adult Family Member):
    Primary Caretaker (You)          Other Adult Family Member in the house (Specify the relationship ______)
    (1) Work 40+ hours a week  ______  ______
    (2) Work fewer than 40 hours a week  ______  ______
    (3) Homemaker  ______  ______
    (4) Retired  ______  ______
    (5) Unemployed  ______  ______
What is your total **annual** family income?  
Total annual income $________________  

<table>
<thead>
<tr>
<th>Income Range</th>
<th>0-$5,000</th>
<th>$5,001-$15,000</th>
<th>$15,001-$30,000</th>
<th>$30,001-$45,000</th>
<th>$45,001-$60,000</th>
<th>$60,001-$75,000</th>
<th>$75,001 or above</th>
</tr>
</thead>
</table>

What is the highest degree that family members have?  

<table>
<thead>
<tr>
<th>Degree Type</th>
<th>0) No degree</th>
<th>1) Graduate Equivalent Degree (GED)</th>
<th>2) High School Diploma</th>
<th>3) Trade School Certificate</th>
<th>4) Associate Degree</th>
<th>5) Bachelors Degree</th>
<th>6) Masters Degree</th>
<th>7) Doctoral Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Caretaker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Adult Family Member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Demographic Interview (Adolescent)

Demographics
1. Gender: M / F

2a. Date of Birth: _________ 2b. Age: _________

3. Ethnic group:

<table>
<thead>
<tr>
<th>Adolescent</th>
<th>Adolescent’s Birth Mother</th>
<th>Adolescent’s Birth Father</th>
<th>Which one?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(1)</td>
<td>(1)</td>
<td>American Indian or Alaskan Native</td>
</tr>
<tr>
<td>(2)</td>
<td>(2)</td>
<td>(2)</td>
<td>Asian, Asian-American, or Pacific Islander</td>
</tr>
<tr>
<td>(3)</td>
<td>(3)</td>
<td>(3)</td>
<td>Black or African-American</td>
</tr>
<tr>
<td>(4)</td>
<td>(4)</td>
<td>(4)</td>
<td>Hispanic, Cuban</td>
</tr>
<tr>
<td>(5)</td>
<td>(5)</td>
<td>(5)</td>
<td>Hispanic, Mexican</td>
</tr>
<tr>
<td>(6)</td>
<td>(6)</td>
<td>(6)</td>
<td>Hispanic, New Mexican (or Spanish-American)</td>
</tr>
<tr>
<td>(7)</td>
<td>(7)</td>
<td>(7)</td>
<td>Hispanic, Puerto-Rican</td>
</tr>
<tr>
<td>(8)</td>
<td>(8)</td>
<td>(8)</td>
<td>Hispanic, Other Latin American</td>
</tr>
<tr>
<td>(9)</td>
<td>(9)</td>
<td>(9)</td>
<td>White, not of Hispanic origin</td>
</tr>
<tr>
<td>(0)</td>
<td>(0)</td>
<td>(0)</td>
<td>Other</td>
</tr>
</tbody>
</table>

4. Last Grade Completed:
Current GPA: ___________
Currently enrolled? Yes/No School_________

14. Current Marital Status (Check one for each):

<table>
<thead>
<tr>
<th>Adolescent Primary Caretaker</th>
<th>Adolescent’s Birth Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Single, never been married</td>
<td>(1) Single, never been married</td>
</tr>
<tr>
<td>(2) Legally married</td>
<td>(2) Legally married</td>
</tr>
<tr>
<td>(3) Cohabiting with a partner</td>
<td>(3) Cohabiting with a partner</td>
</tr>
<tr>
<td>(4) Separated but still married</td>
<td>(4) Separated but still married</td>
</tr>
<tr>
<td>(5) Divorced</td>
<td>(5) Divorced</td>
</tr>
<tr>
<td>(6) Widowed</td>
<td>(6) Widowed</td>
</tr>
</tbody>
</table>
15. Employment Status
(Christ one for primary caretaker and one for Other Adult Family Member):

<table>
<thead>
<tr>
<th></th>
<th>Adolescent</th>
<th>Primary Caretaker</th>
<th>Other Adult Family Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Work 40+ hours a week</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>(2) Work fewer than 40 hours a week</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>(3) Homemaker</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>(4) Retired</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>(5) Unemployed</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>(6) Student</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

16. What is your highest level of education?

<table>
<thead>
<tr>
<th></th>
<th>Adolescent</th>
<th>Primary Caretaker</th>
<th>Other Adult Family Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>0) Unknown</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>1) First grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>2) Second grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>3) Third grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>4) Fourth grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>5) Fifth grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>6) Sixth grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>7) Seventh grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>8) Eighth grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>9) Ninth grade For GED recipients</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>10) Tenth grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>11) Eleventh grade</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>12) High school graduate (not GED)</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>13) One year full-time post-secondary</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>14) Two years full-time post-secondary</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>15) Three years full-time post-secondary</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>16) Four years full-time post secondary: college graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>17) One year full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>18) Two year full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>19) Three years full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>20) Four years full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>21) Five years full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>22) Six years full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>23) Seven years full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>24) Eight years full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>25) Nine years full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>26) Ten years full-time post-graduate</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>
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This copy of the Beck Depression Index has been removed due to potential copyright issues.
This copy of the Beck Depression Index has been removed due to potential copyright issues.
Coping in Stressful Situations Adolescent (CISS-A)

Instructions: The following are ways people react to various difficult, stressful, or upsetting situations. Please circle a number from 1 to 5 for each item. Indicate how much you engage in these type of activities when you encounter a difficult, stressful, or upsetting situation.

Task-oriented Coping Sub-scale

| Not at all | 2 | 3 | 4 | 5 | 1. Focus on the problem and see how I can solve it. |
| Not at all | 2 | 3 | 4 | 5 | 2. Do what I think is the best. |
| Not at all | 2 | 3 | 4 | 5 | 8. Blame myself for having gotten into this situation. |
| Not at all | 2 | 3 | 4 | 5 | 11. Try to go to sleep. |
| Not at all | 2 | 3 | 4 | 5 | 13. Feel anxious about not being able to cope. |
| Not at all | 2 | 3 | 4 | 5 | 16. Tell myself that it is really not happening to me. |
| Not at all | 2 | 3 | 4 | 5 | 19. Become very upset. |
Family Environment Scale

Instructions

There are 90 statements in this booklet. They are statements about families. You are to decide which of these statements are true of your family and which are false. Make all your marks on the separate answer sheet. If you think the statement is True or mostly True of your family, make an X in the box labeled T (true). If you think the statement is False or mostly False of your family, make an X in the box labeled F (false).

You may feel that some of the statements are true for some family members and false for others. Mark T if the statement is true for most members. Mark F if the statement is false for most members. If the members are evenly divided, decide what is the stronger overall impression and answer accordingly.

Remember, we would like to know what your family seems like to you. So do not try to figure out how other members see your family, but do give us your general impression of your family for each statement.

Family Cohesion Sub-scale

| T | F | 1. Family members really help and support one another. |
| T | F | 11. We often seem to be killing time at home. |
| T | F | 21. We put a lot of energy into what we do at home. |
| T | F | 31. There is a feeling of togetherness in our family. |
| T | F | 41. We rarely volunteer when something has to be done at home. |
| T | F | 51. Family members really back each other up. |
| T | F | 61. There is very little group spirit in our family. |
| T | F | 71. We really get along well with each other. |
| T | F | 81. There is plenty of time and attention for everyone in our family. |

Family Conflict Sub-scale

| T | F | 3. We fight a lot in our family. |
| T | F | 13. Family members rarely become openly angry. |
| T | F | 23. Family members sometimes get so angry they throw things. |
| T | F | 33. Family members hardly ever lose their tempers. |
| T | F | 43. Family members often criticize each other. |
| T | F | 53. Family members sometimes hit each other. |
| T | F | 63. If there is a disagreement in our family, we try hard to smooth things over and keep the peace. |
| T | F | 73. Family members often try to one-up or out-do each other. |
| T | F | 83. In our family, we believe you don’t ever get anywhere by raising your voice. |
Conflict Tactics Scale

No matter how well youth and parents get along, there are times when they disagree on major decisions, get annoyed about something the other person does, or just have disagreements or fights. They also may use many different ways of trying to settle their differences. I’m going to list some things that you and a parent/guardian may have done when you had a dispute. **First, I’d like you to tell me if you or your parent/guardian have EVER done any of these things.** Second, I’d like to know how many times you and your parent/guardian have done these things **in the past 12 months.**

Verbal Aggression Sub-scale

<table>
<thead>
<tr>
<th>You or parent/guardian-ever happened?</th>
<th>You-in the past year?</th>
<th>Parent/guardian-in the past year?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>d. Insulted or swore at the other person</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>e. Sulked and/or refused to talk about it</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>f. Stomped out of the room or house</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>g. Cried</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>h. Did or said something to spite the other person</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>i. Threatened to hit or throw something at the other person.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Runaway Youth (N=140)</td>
<td>Primary Caretakers (N=140)</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Female 51.4%, N=72</td>
<td>Female 85.2%, N=104</td>
</tr>
<tr>
<td></td>
<td>Male 48.6%, N=68</td>
<td>Male 14.8%, N=18</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>Mean=15.5</td>
<td>Mean=41.5</td>
</tr>
<tr>
<td></td>
<td>Range= 12-17</td>
<td>Range=17-69</td>
</tr>
<tr>
<td></td>
<td>SD=1.2</td>
<td>SD=8.5</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td>African American 62.9%</td>
<td>African American 63.9%</td>
</tr>
<tr>
<td></td>
<td>White 31.4%</td>
<td>White 31.6%</td>
</tr>
<tr>
<td></td>
<td>Hispanic 1.4%</td>
<td>Hispanic 1.5%</td>
</tr>
<tr>
<td></td>
<td>American Indian/Alaskan</td>
<td>American Indian/Alaskan</td>
</tr>
<tr>
<td></td>
<td>Native 1.4%</td>
<td>Native 2.3%</td>
</tr>
<tr>
<td><strong>Education Status</strong></td>
<td>Highest Degree</td>
<td>Highest Degree</td>
</tr>
<tr>
<td>Sixth Grade</td>
<td>.8%</td>
<td>Graduate Equivalent Degree(GED)</td>
</tr>
<tr>
<td>Seventh Grade</td>
<td>7.6%</td>
<td>4.7 %</td>
</tr>
<tr>
<td>Eighth Grade</td>
<td>21.8%</td>
<td>High School Diploma 38.3 %</td>
</tr>
<tr>
<td>Ninth Grade</td>
<td>34.5%</td>
<td>Trade School Certificate 6.3%</td>
</tr>
<tr>
<td>Tenth Grade</td>
<td>19.3%</td>
<td>Associates Degree 9.4 %</td>
</tr>
<tr>
<td>Eleventh Grade</td>
<td>15.1%</td>
<td>Bachelors Degree 10.9 %</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>(Not GED) .8%</td>
<td>Masters Degree 2.3 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Doctoral Degree .8 %</td>
</tr>
<tr>
<td>Currently enrolled in</td>
<td>88.2%</td>
<td>No degree 27.3</td>
</tr>
<tr>
<td>school</td>
<td>N=112</td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td>Single, never married 98.3%</td>
<td>Single/never married 44.4%</td>
</tr>
<tr>
<td></td>
<td>Currently legally married .8%</td>
<td>Currently, legally married 24.1%</td>
</tr>
<tr>
<td></td>
<td>Widowed .8%</td>
<td>Cohabitating with a partner 1.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separated but still married 11.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Divorced 15.8%</td>
</tr>
<tr>
<td><strong>Total Annual Income</strong></td>
<td>n/a</td>
<td>0-$5,000 10.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$5,001-$15,000 25.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$15,001-$30,000 29.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$30,001-$45,000 18.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$45,001-$60,000 5.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$60,001-$75,000 2.8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$75,001 or above 7.5%</td>
</tr>
</tbody>
</table>

Table 1: *Sample Characteristics*
Runaway Behavior

- Number of Time Runaway from home
  - Mean = 3.15
  - Range = 0-50
  - SD = 6.31

- Times Homeless/Nowhere to go
  - Mean = 1.04
  - Range = 0-20
  - SD = 2.65

- The last time that youth left home for 30 days or longer
  - Within last month 20.7%, N = 29
  - 1-6 months ago 65%, N = 91
  - 7-12 months ago 5.7%, N = 8
  - 1-3 years ago 1.4%, N = 2

- Reasons of being away from home
  - Family conflict/argument 50.5%, N = 48
  - Got angry, left home on his/her decision 26.3%, N = 25
  - Parents asked to leave 18.9%, N = 18
  - Police/arrest 4.2%, N = 4

Frequency of Substance Use

- Mean = 28.8% days of use in the prior 90 days
- Range = 3.42-100
- SD = 27.2

Depressive Symptoms

<table>
<thead>
<tr>
<th>Type</th>
<th>Girls</th>
<th>Boys</th>
<th>Primary Caretakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal (0-13)</td>
<td>44.9%, N = 31</td>
<td>65.6%, N = 42</td>
<td>74.4%, N = 99</td>
</tr>
<tr>
<td>Mild (14-19)</td>
<td>17.4%, N = 12</td>
<td>10.9%, N = 7</td>
<td>11.3%, N = 15</td>
</tr>
<tr>
<td>Moderate (20-28)</td>
<td>14.5%, N = 10</td>
<td>12.5%, N = 8</td>
<td>7.5%, N = 10</td>
</tr>
<tr>
<td>Severe (29-69)</td>
<td>23.2%, N = 16</td>
<td>10.9%, N = 7</td>
<td>6.8%, N = 9</td>
</tr>
</tbody>
</table>

Clinically Diagnosed Major Depressive Disorder

- Yes = 5%, N=7

Suicide Attempt

- Yes = 33.1%, N = 39

Ever arrested

- Yes = 34.4%, N = 45

Continued

Table 2: Characteristics of Runaways as a Subsample of At-risk Youth
Table 2 continued

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gang involvement</strong></td>
<td>11.5%</td>
<td>15</td>
</tr>
<tr>
<td><strong>System Involvement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foster home</td>
<td>28.2%</td>
<td>37</td>
</tr>
<tr>
<td>Group home</td>
<td>22.1%</td>
<td>29</td>
</tr>
<tr>
<td>Juvenile Detention</td>
<td>22.9%</td>
<td>30</td>
</tr>
<tr>
<td>Jail overnight</td>
<td>16.8%</td>
<td>22</td>
</tr>
<tr>
<td>Ward of state</td>
<td>5.3%</td>
<td>7</td>
</tr>
<tr>
<td>No System Involvement</td>
<td>50%</td>
<td>70</td>
</tr>
<tr>
<td><strong>Problems of Homelessness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate Food</td>
<td>18.3%</td>
<td>21</td>
</tr>
<tr>
<td>Inadequate Clothing</td>
<td>27.8%</td>
<td>32</td>
</tr>
<tr>
<td>Inadequate Clean up</td>
<td>13.2%</td>
<td>14</td>
</tr>
<tr>
<td>Inadequate Medical care</td>
<td>15.7%</td>
<td>18</td>
</tr>
<tr>
<td>Untreated physical health</td>
<td>4.3%</td>
<td>4</td>
</tr>
<tr>
<td><strong>Victimization Experiences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Assault</td>
<td>25.9%</td>
<td>30</td>
</tr>
<tr>
<td>Sexual Assault</td>
<td>5.9%</td>
<td>7</td>
</tr>
<tr>
<td>Burglary</td>
<td>5.9%</td>
<td>7</td>
</tr>
<tr>
<td>Robbery</td>
<td>11.9%</td>
<td>13</td>
</tr>
<tr>
<td>Rape</td>
<td>5%</td>
<td>6</td>
</tr>
<tr>
<td>Outcome</td>
<td>Predictors</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Primary Caretakers’</td>
<td>Risk Factors</td>
<td></td>
</tr>
<tr>
<td>Depressive Symptoms</td>
<td>Adolescent Depressive Symptoms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family Conflict</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTS Verbal aggression-You</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTS Verbal aggression-Other</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protective Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family Cohesion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adolescent Task-oriented coping</td>
<td></td>
</tr>
<tr>
<td>Adolescents’</td>
<td>Risk Factors</td>
<td></td>
</tr>
<tr>
<td>Depressive Symptoms</td>
<td>Primary Caretakers’</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depressive Symptoms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family Conflict</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTS Verbal aggression-You</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTS Verbal aggression-Other</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protective Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family Cohesion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adolescent Task-oriented coping</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: *Variables in the Proposed Models*
### CURRENT SAMPLE

<table>
<thead>
<tr>
<th></th>
<th>Primary Caretakers</th>
<th>Runaway Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of items</td>
<td>Mean</td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td>21</td>
<td>9.73</td>
</tr>
<tr>
<td>Verbal aggression-you</td>
<td>6</td>
<td>11.02</td>
</tr>
<tr>
<td>Verbal aggression-other</td>
<td>6</td>
<td>14.3</td>
</tr>
<tr>
<td>Family Conflict</td>
<td>9</td>
<td>4.62</td>
</tr>
<tr>
<td>Family Cohesion</td>
<td>9</td>
<td>5.75</td>
</tr>
<tr>
<td>Task Oriented Coping</td>
<td>16</td>
<td>-</td>
</tr>
</tbody>
</table>

### STANDARD SAMPLE

<table>
<thead>
<tr>
<th></th>
<th>Normative</th>
<th>Distressed/Outpatient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of items</td>
<td>Mean</td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td>21</td>
<td>1.56</td>
</tr>
<tr>
<td>Verbal aggression-you</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Verbal aggression-other</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Family Conflict</td>
<td>9</td>
<td>3.18</td>
</tr>
<tr>
<td>Family Cohesion</td>
<td>9</td>
<td>6.73</td>
</tr>
<tr>
<td>Task Oriented Coping</td>
<td>16</td>
<td>49.43</td>
</tr>
</tbody>
</table>

Table 4: Comparison of Study Measures between The Study Sample and The Normative Sample
### Table 5: Intercorrelations of Measures of Depressive Symptoms, Risk Factors, and Protective Factors

Note. Primary Caretaker data are shown above the diagonal; runaway youth’s data are below the diagonal.

*\(p < .05\).  **\(p < .01\).
### Predictors

#### Risk Factors

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>10.05</td>
<td>4.99</td>
<td>-.</td>
<td>2.01*</td>
</tr>
<tr>
<td>Adolescent’s Depression</td>
<td>.30</td>
<td>.08</td>
<td>.35</td>
<td>3.68***</td>
</tr>
<tr>
<td>Primary Caretaker’s report of verbal aggression of himself/herself</td>
<td>.24</td>
<td>.190</td>
<td>.17</td>
<td>1.28</td>
</tr>
<tr>
<td>Primary Caretaker’s report of verbal aggression of his/her youth</td>
<td>-.030</td>
<td>.150</td>
<td>-.03</td>
<td>-.20</td>
</tr>
<tr>
<td>Family Conflict</td>
<td>-.31</td>
<td>.59</td>
<td>-.06</td>
<td>-.52</td>
</tr>
</tbody>
</table>

#### Protective Factors

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent’s Task Oriented Coping</td>
<td>.030</td>
<td>.05</td>
<td>.054</td>
<td>.57</td>
</tr>
<tr>
<td>Family Cohesion</td>
<td>-1.03</td>
<td>.47</td>
<td>-.24</td>
<td>-2.21*</td>
</tr>
</tbody>
</table>

#### Full Model

- Overall F: 3.91**
- Total R²: .20
- Adjusted R²: .15

Table 6: *Results of Multiple Linear Regression Analysis for the Prediction of Primary Caretakers’ Depressive Symptoms*

NOTE: B, SE, β are presented for the final model after all predictor variables have been entered.

*p < .05. **p < .01. ***p < .001.
### Predictors

#### Boys

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>13.1</td>
<td>7.96</td>
<td>-</td>
<td>1.65</td>
</tr>
<tr>
<td>Primary Caretaker’s Depression</td>
<td>.42</td>
<td>.19</td>
<td>.32</td>
<td>2.19*</td>
</tr>
<tr>
<td>Adolescent’s report of verbal aggression of himself/herself</td>
<td>-.15</td>
<td>.39</td>
<td>-.09</td>
<td>-.37</td>
</tr>
<tr>
<td>Adolescent’s report of verbal aggression of his/her primary caretaker</td>
<td>.31</td>
<td>.37</td>
<td>.19</td>
<td>.82</td>
</tr>
<tr>
<td>Family Conflict</td>
<td>.003</td>
<td>1.13</td>
<td>.000</td>
<td>.002</td>
</tr>
</tbody>
</table>

#### Protective Factors

| adolescent’s task oriented coping                | -.09 | .09  | -.14 | -.92 |
| Family Cohesion                                  | -.62  | .84  | -.12 | -.74 |

#### Full Model

**Overall F** 1.64 (NS)

Total R² .18

Adjusted R² .07

### Girls

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>14.61</td>
<td>1.91</td>
<td>-</td>
<td>7.65***</td>
</tr>
<tr>
<td>Primary Caretaker’s Depression</td>
<td>-2.74</td>
<td>2.09</td>
<td>-.17</td>
<td>-1.31</td>
</tr>
<tr>
<td>Adolescent’s report of verbal aggression of himself/herself</td>
<td>-.94</td>
<td>4.00</td>
<td>-.032</td>
<td>-.23</td>
</tr>
<tr>
<td>Adolescent’s report of verbal aggression of his/her primary caretaker</td>
<td>6.03</td>
<td>2.77</td>
<td>.37</td>
<td>2.17*</td>
</tr>
<tr>
<td>Family Conflict</td>
<td>1.33</td>
<td>3.39</td>
<td>.07</td>
<td>.39</td>
</tr>
</tbody>
</table>

#### Protective Factors

| adolescent’s task oriented coping                | 1.33  | 3.39 | .07  | .39  |
| Family Cohesion                                  | -14.61 | 1.91 | -.857 | 7.65*** |

#### Full Model

**Overall F** 4.9**

Total R² .39

Adjusted R² .31

---

Table 7: Results of Multiple Linear Regression Analysis for the Prediction of Runaway Youth’s Depressive Symptoms

NOTE: Table represents the final model after all predictor variables have been entered.
### Predictors

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictor</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Y Intercept</td>
<td>9.77</td>
<td>1.32</td>
<td>-</td>
<td>7.39***</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>Risk Index</td>
<td>3.74</td>
<td>1.67</td>
<td>.23</td>
<td>2.23*</td>
<td>.085**</td>
</tr>
<tr>
<td>2</td>
<td>Protective Index</td>
<td>-1.57</td>
<td>1.36</td>
<td>-.12</td>
<td>-1.15</td>
<td>.009</td>
</tr>
<tr>
<td>3</td>
<td>Risk X Protective Index</td>
<td>1.70</td>
<td>2.33</td>
<td>.07</td>
<td>.73</td>
<td>.002</td>
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<td>4</td>
<td>Risk X Risk Index</td>
<td>2.18</td>
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<td>.11</td>
<td>1.06</td>
<td>.010</td>
</tr>
</tbody>
</table>

**Full Model**

- Overall F: 2.87*
- Total R²: .11
- Adjusted R²: .07

Table 8: Results of Hierarchical Regression Analysis for the Prediction of Primary Caretakers’ Depressive Symptoms: Test of Resiliency Models

NOTE: B, SE, β are presented for the final model after all predictor variables have been entered, ΔR² is presented for the model after each step.

*p < .05. **p < .01. ***p < .001.
### Boys

**Predictors**

<table>
<thead>
<tr>
<th>Step</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y Intercept</td>
<td>10.5</td>
<td>2.05</td>
<td>-</td>
<td>5.12***</td>
<td>-</td>
</tr>
<tr>
<td>1 Risk Index</td>
<td>5.25</td>
<td>2.42</td>
<td>.33</td>
<td>2.16*</td>
<td>.068</td>
</tr>
<tr>
<td>2 Protective Index</td>
<td>-4.25</td>
<td>2.25</td>
<td>-.26</td>
<td>-1.89</td>
<td>.045</td>
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<tr>
<td>3 Risk X Protective Index</td>
<td>.92</td>
<td>2.95</td>
<td>.05</td>
<td>.31</td>
<td>.000</td>
</tr>
<tr>
<td>4 Risk X Risk Index</td>
<td>6.74</td>
<td>2.5</td>
<td>.36</td>
<td>2.7*</td>
<td>.115*</td>
</tr>
</tbody>
</table>

**Full Model**

- Overall F: 3.61*
- Total R²: .23
- Adjusted R²: .16

### Girls

<table>
<thead>
<tr>
<th>Step</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y Intercept</td>
<td>14.61</td>
<td>1.91</td>
<td>-</td>
<td>7.652***</td>
<td>-</td>
</tr>
<tr>
<td>1 Risk Index</td>
<td>1.33</td>
<td>3.39</td>
<td>.06</td>
<td>.393</td>
<td>.119*</td>
</tr>
<tr>
<td>2 Protective Index</td>
<td>-2.74</td>
<td>2.09</td>
<td>-.17</td>
<td>-1.31</td>
<td>.015</td>
</tr>
<tr>
<td>3 Risk X Protective Index</td>
<td>-.94</td>
<td>4.00</td>
<td>-.032</td>
<td>-.23</td>
<td>.012</td>
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<tr>
<td>4 Risk X Risk Index</td>
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<td>2.78</td>
<td>.37</td>
<td>2.17*</td>
<td>.075*</td>
</tr>
</tbody>
</table>

**Full Model**

- Overall F: 3.46*
- Total R²: .22
- Adjusted R²: .16

---

**Table 9: Results of Hierarchical Regression Analysis for the Prediction of Runaway Youth’s Depressive Symptoms: Test of Resiliency Models**

NOTE: B, SE, β are presented for the final model after all predictor variables have been entered, ΔR² is presented for the model after each step.

*p < .05. **p < .01. ***p < .001.
APPENDIX C

FIGURES
Model A: Compensatory Model

Model B: Risk-Protective Model

Model C: Risk-Risk (Challenge) Model

Figure 1: Models of Resiliency
Levels of risk exposure are categorized as “Low Risk” (1 SD below the mean), “Medium Risk” (mean) and “High Risk” (1 SD above the mean).

Figure 2: Depressive Symptoms as a Function of Levels of Risk Exposure