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Stress Exposure, Secure Base Scriptedness, Psychosocial Needs Satisfaction And Behavioral Problems Among At-Risk Urban Adolescents

Kelsey Sala-Hamrick
Wayne State University,

STRESS EXPOSURE, SECURE BASE SCRIPTEDNESS, PSYCHOSOCIAL NEEDS SATISFACTION AND BEHAVIORAL PROBLEMS AMONG AT-RISK URBAN ADOLESCENTS

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Kelsey J. Sala-Hamrick

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CHAPTER 1

Introduction

This study sought to examine a sample of urban, socioeconomically disadvantaged adolescents at-risk for behavior problems. The adolescent period of development is associated with increases in internalizing (e.g., depression & anxiety), externalizing (e.g., rule breaking & aggression), and other problem (e.g., social problems, attention problems, & thought problems) behaviors compared to prior developmental periods. Cumulative risk factors associated with environmental disadvantage are positively associated with and thought to exacerbate these difficulties. Previous research has demonstrated associations between both secure attachment relationships with parents and the satisfaction of psychosocial needs with decreases in behavior problems. The current study went one step further and examined the relative effects of environmental stress exposure, attachment security, and psychosocial needs satisfaction on adolescent behavioral problems. Therefore, this study recruited an at-risk, socioeconomically disadvantaged, and primarily African American sample of urban adolescents and their caregivers from Detroit, MI. It aimed to (1) describe the levels of environmental disadvantage, stress exposure, and behavior problems in this sample, (2) examine relations between stress exposure, secure base scriptedness, psychosocial needs satisfaction, and adolescent behavior problems, and (3) explore the unique, relative, and combined contributions of stress exposure, secure base scriptedness, and psychosocial needs satisfaction on behavior problems in this at-risk adolescent sample and how potential interactions among these variables contribute to resiliency in this at-risk population.

Adolescence and Behavior Problems

The adolescent period of human development is a time of many cognitive, physical, and emotional advancements (Steinberg & Morris, 2001). Fostered by rapid changes in cognitive processes and physical characteristics, adolescent youth continue to develop autonomy by making more independent decisions, acquiring additional rights and responsibilities, and establishing more complex social relationships as they progress towards adulthood (Zimmer-Gembeck & Collins, 2003). During this developmental period, people begin negotiating new relationships, roles, and responsibilities with respect to their parents, peers, schools, institutions, and society (Allen & Land, 1999; Lerner, Boyd, & Du, 2009). Young people establish greater self-reliance, improve their own self-regulation, and develop a stronger identity as they transition from childhood to young adulthood (Zimmer-Gembeck & Collins, 2003).

Adolescence can be a tumultuous period, when youth are at greater risk for developing behavioral, emotional, and psychological problems compared with earlier ages (Achenbach, McConaughy, & Howell, 1987; Aneshensel & Sucoff, 1996). Longitudinal and epidemiological research studies have found that prevalence rates of psychological symptoms and disorders, including depression, suicide, substance use, social anxiety, panic disorder, and conduct problems, increase across the course of adolescence (Arnett, 1999; Compas, Hinden, & Gerhardt, 1995; Costello, Mustillo, Erkanli, Keeler & Angold, 2003; Kessler, Avenevoli, & Ries Merikangas, 2001). Research suggests that adolescence is a particularly salient time for the development of psychological problems, with one systematic literature review finding median prevalence rates of having one or more psychiatric disorder to be 8% for preschool children, 12% for preadolescent children, and 15% for adolescents (Roberts, Attkisson, & Rosenblatt, 1998). The risk of developing disorders including oppositional defiant disorder, conduct disorder, major depression,

anxiety disorders, and substance use disorders is considered to be linked to the start of adolescence (Cohen, Cohen, Kasen, Velez, Hartmark, Johnson, ... & Streuning, 1993; Costello, Angold, Burns, Stangl, Tweed, Erkanli, & Worthman, 1996; Wittchen, Nelson, & Lachner, 1998). The National Comorbidity Survey Replication – Adolescent Supplement (NCS-A), in a face-to-face survey of 10,123 13- to 18-year old U.S. teens, found that 2 in 4 to 5 youth met criteria for a severely impairing mental disorder, with anxiety disorders affecting 31.9%, mood disorders affecting 14.3%, and substance use disorders affecting 11.4% of the overall sample (Merikangas, He, Burstein, Swanson, Avenevoli, Cui, ... & Swendsen, 2010). Such research findings emphasize the importance of conducting multivariate study of the factors that may contribute to the development of problem behaviors in adolescence.

Demographic Risk

Among adolescents, youth living in urban, socioeconomically disadvantaged environments have been found to be at greater risk for the development of psychological difficulties compared to adolescents of other demographic backgrounds. For instance, one study of 1,520 low-income urban early adolescents found higher rates of internalizing and externalizing problems compared to representative normative data for the age group (Grant, Katz, Thomas, O'Koon, Meza, DiPasquale, …, Bergen, 2004). Another study analyzed data from the National Longitudinal Study of Adolescent Health and found that the variables of concentrated community poverty, family economic hardship, low parental educational achievement, single parenthood, and being of African American or Hispanic ethnicity significantly predicted depressive symptoms in adolescents (Wickrama & Bryant, 2003).

Numerous studies of youth growing up in socioeconomically disadvantaged environments have found them to be more likely to be exposed to stressful and traumatic life events compared

to their more economically advantaged counterparts. Potential stressors at-risk youth face include witnessing or directly experiencing community violence, crime, and other traumas (Deardorff, Gonzales, & Sandler, 2003; Grant, Compas, Stuhmacher, Thurm, McMahon, & Halpert 2003; Wickrama & Bryant, 2003). Other environmental threats, such as poor-quality housing and few community resources, increase an individual's risk for depression and amplify the effects of negative personal stressors on depressive symptoms (Cutrona, Wallace, & Wesner, 2006). One study examining 144 inner-city students found that youth experiencing negative life events were significantly more depressed and anxious than children from low risk backgrounds, even after accounting for their level of positive resilience factors (Luthar, 1991). Another study of 245 African American and Latino boys in socioeconomically disadvantaged urban areas found that exposure to violence in the community was significantly related to increases in depression and aggression (Gorman-Smith & Tolan, 1998).

Cumulative risk theory postulates that at-risk individuals experience distress and maladaptive psychological outcomes due to the accumulation of multiple individual stressors throughout their lifetime (Appleyard, Egeland, Dulmen, & Alan Sroufe, 2005; Evans & Kim, 2007; Evans, Kim, Ting, Tesher, & Shannis, 2007; Forehand, Biggar, & Kotchick, 1998; Masten & Wright, 1998). One study found the accumulation of the risks of neighborhood disadvantage, experiences of stressful environmental events, and perceived discrimination significantly predicted depressive symptoms and delinquent behaviors in low income urban adolescents (Prelow, Danoff-Burg, Swenson, & Pulgiano, 2004). Moreover, this study found that perceived discrimination increased the effects of other cumulative risks on depressive and delinquent symptoms among African American adolescents in their sample (Prelow et al., 2004). Another study found that the cumulative risk of family turmoil, violence, poverty, family separation, single parenthood,

maternal high school dropout, housing problems, home crowding, and community noise predicted a significantly higher allostatic load based on a variety of physiological measures of wear and tear (Evans et al., 2007). Research suggests that cumulative ecological risk factors undermine caregivers' abilities to provide adequate nurturance, leading to poorer mental health outcomes among their children. For instance, a study of toddlers living in socioeconomically disadvantaged environments and at risk for the development of conduct problems found that the level of cumulative environmental risk experienced by children and their caregivers had an indirect effect on the development of internalizing and externalizing problems via undermining involved and sensitive parenting (Trentacosta, Hyde, Shaw, Dishion, Gardner, & Wilson, 2008).

Gaining a more comprehensive understanding of the connection and mechanisms between socioeconomic disadvantage, environmental stress exposure, and psychopathology will better inform research on how to help the high numbers of young people exposed to at-risk situations. According to the National Center for Children in poverty, in 2012, 19% or 4.7 million U.S. adolescents ages 12 to 17 years were living in poor families and 41% or 10.0 million U.S. adolescents were living in low income families (Jiang, & Skinner, 2014). Jiang and Skinner (2014) defined poor families as families with annual incomes less than 100% the federal poverty line ($23,364 for a family of four with two children and $15,825 for a family of two with one child) and low income families as families with annual incomes less than 200% of the federal poverty line. Research suggests that families with an average income of about two times the federal poverty level have enough financial resources to meet their most basic needs (Cauthen & Fass, 2008) Based on these standards, 41% of U.S. adolescents are thought to be living in families without the financial capability to have their most basic needs (e.g., food, shelter) met. Minorities are overrepresented in these poor and low-income populations, with Black and Hispanic

adolescents making up 21% and 32% of low income youth and 24% and 34% of poor youth, although they are only 14% and 22% of the total population (Jiang & Skinner, 2014). Moreover, as discussed previously, increased exposure to racism and discrimination put African American and other minority youth at higher risk for the damaging effects of poverty and its related cumulative stressors than Caucasian youth.

Attachment

Research supports the importance of the parent –child relationship and the role parents play across their child's development. One of the most salient concepts of the caregiver – child relationship is attachment, the child's emotional bond with their primary caregiver. Attachment theory was first proposed by Bowlby (1953), in which he states that an attachment relationship is a dynamic association between mother and child, beginning in infancy, in which the child inherently knows to seek out his or her caregiver in times of distress. This theory posits that children are inherently motivated to seek proximity to their familiar caregivers when distressed and that caregivers can, in the case of secure attachment relationships, provide a stable base for children to return to and be comforted by. Although all children are believed to have the capacity to form attachment relationships, individual differences have been identified regarding the extent to which children are securely or insecurely attached (Ainsworth, Blehar, Waters, & Wall, 1978). Individual differences in attachment security have been found to be a function of a child's past experiences of receiving sensitive care from a particular attachment figure, usually their mother or father (de Wolf & van IJzendoorn, 1997).

Secure attachment relationships are characterized by a child's behavior indicating the underlying belief that the caregiver will be available and responsive in times of distress and provide help while they navigate new experiences and environments. Individual differences in child

attachment security have been shown to be related to differential experiences in caregiver sensitivity to a child's needs (de Wolf & van IJzendorn, 1997). Thus, they promote the child's expectations that their parent will be able to care for them effectively, providing useful assistance and recognizing and fulfilling their basic needs.

As children develop into the toddlerhood and preschool years, they begin not only to internalize, but also to generalize their early attachment relationships into beliefs about how others will relate and react to them in various social situations (Anan & Barnett, 1999). This generalization directs how children regulate their emotions, behave towards others, and expect others to behave towards them. As predicted from attachment theory, several large scale meta-analytic studies have found that insecure attachments among toddlers and preschool children are related to higher levels of internalizing and externalizing problems (Fearon, Bakermans-Kranenburg, Van IJzendoorn, Lapsley, & Roisman, 2010; Groh, Roisman, van IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012). Inversely, secure attachment in toddlers and preschoolers has been associated with increased social competence, higher levels of social engagement and acceptance, and less internalizing problems (Booth, Rose-Krasnor, & Rubin, 1999; Bost, Vaughn, Washington, Cielinski, & Bradbardm, 1998).

Attachment relationships in adolescence have been of increasing interest in the fields of developmental and clinical psychology. Allen and Land (1999) demonstrated that a secure attachment relationship promotes healthy developmental outcomes as young people negotiate the multiple challenges and changing roles of adolescence. Moreover, adolescence is thought to be characterized as a time of reorganization of working models of attachment (Allen & Land, 1999). Specifically, during adolescence, young people have been found to evaluate and reevaluate their expectations of others, compare these expectations to the actual behavior and reactions of others,

and thus modify their own emotions and behaviors to fit with their changing schemas (Allen & Land, 1999). In terms of attachment, adolescents expand on a process started in the preschool years: The generalization and integration of their previous attachment experiences to individuals other than their primary caregivers in order to create a more advanced and nuance attachment schemas. Research on adolescent attachment has found that the quality of attachment adolescents report having for their mothers and fathers are significantly related to one another as well as significantly associated with the quality of attachment they report they have with their friends (Furman & Simon, 2004; Furman, Simon, Shaffer, & Bouchey, 2002).

Adolescents, like children of all ages, continue to benefit from a secure attachment relationship with their primary caregivers, which is thought to have protective and supportive psychosocial effects. Research has shown that secure attachment in adolescence and across the lifespan is linked to increased competence with peers, decreased levels of internalizing symptoms, and decreased levels of problem behaviors (Allen, Moore, Kuperminc, & Bell, 1998). By disrupting responsive parenting, socioeconomic disadvantage in childhood may play a significant contribution to difficulties in establishing secure attachment relationships in early childhood. Researchers have found that insecure attachment in childhood has been linked to multiple factors associated with environmental risk, which leads to disruptions in effective parenting, including socioeconomic disadvantage, maternal psychopathology, insensitive parenting, and childhood maltreatment (Atkinson, Paglia, Coolbear, Niccol, Parker, & Guger, 2000; Barnett, Ganiban, & Cicchetti, 1999). When not undermined by environmental risk, supportive parenting and secure attachment may buffer children from some of the deleterious associations with stress. A study of 117 mid-adolescents at risk for behavioral, social, and academic problems found that adolescent attachment security at 16 years predicted relative increases in social skills and decreases deviant

behavior at age 18, while insecure attachment at 16 predicted increases in delinquency and poor social skills later in life (Allen, Marsh, McFarland, McElhaney, Land, Jodl & Peck, 2002). Thus, attachment security may be a variable that fosters resiliency in at-risk, environmentally disadvantaged youth.

Assessing Secure Base Scriptedness in Adolescence

Gold standards have been developed for assessing attachment relationships in infancy (Strange Situation Procedure; Ainsworth et al., 1978) as well as adolescence and adulthood (Adult Attachment Interview, George, Kaplan, & Main, 1984). These measures, especially the latter, are time consuming and costly, requiring months of training and numerous person-hours to administer, transcribe, and score. Consequently, there is a need for briefer and less costly attachment measures, especially for adolescents.

A novel approach to assessing attachment was first introduced by Main, Kaplan, and Cassidy (1985), based on the combined works of Bowlby and Ainsworth, suggesting that individuals create internal working models in which mental representations of attachment relationships are stored. These mental representations are formed over time as children interact with their primary caregivers and begin to expect certain responses. Overtime, these patterns of responding are translated into internal working models of secure or insecure attachment for each significant caregiver with whom the young person depends (Waters & Waters, 2006). For example, through repeated exposure to attachment figure responsiveness to their distress, children are thought to consolidate their anticipations and reaction styles into a mental "script" of how each attachment figure should respond (Waters & Waters, 2006). Dykas, Woodhouse, Cassidy, and Waters (2006) posit that adolescents have scripts for significant individuals in their lives, such as their mother and father. Adolescents draw on these scripts at different times when interacting with

these individuals and are therefore able to generalize their attachment script for an individual across differential contexts and situations. It is thought that over time, the attachment scripts for significant individuals are consolidated into one overarching attachment script, that the individual can draw on across all situations and when interacting with new individuals. This consolidation of attachment styles was analyzed in a study that found that adolescents had similar "secure base script" scores across different contexts, and that scores for mothers predicated unique variance across scores for nonspecified others (Dykas et al., 2006).

The mental script of attachment is thought to direct how individuals react to others and situations and should be apparent through the individual's narrative telling ability (Waters & Waters, 2006). It has been proposed that a narrative reflects the script in which a caregiver acts as a secure base in times of distress and (1) helps defuse distress by anticipating and providing strategies for being comforted and strategies to understand the situation when a return to comfort is not possible, (2) directs the attention to positive aspects of the situation and redirects negative emotionality/focus, and (3) demonstrates "sensitivity to and awareness of the other person's psychological/emotional state" (Waters, n.d., p. 3). When individuals are prompted to tell narratives designed to invoke this "secure base script," they are thought to reveal their working model of attachment and will tell a story that reflects that mental script. Individuals who do not have a cognitive working model of secure attachment are thought to produce a narrative that does not include secure base script content.

The body of literature on the secure base scriptedness attachment measure for adolescents is still relatively small, with two published research studies showing that adolescent secure base scriptedness is associated with adult attachment on the Adult Assessment Interview (AAI; George, et al., 1984), and attachment across different stages of early childhood, the Strange Situation Procedure (SSP; Ainsworth et al., 1978) at 15 months, the Attachment Q-Set (AQS; Waters & Deane,

1985) at 24 months, and the Modified Strange Situation Procedure (MSSP; Cassidy, Marvin, & the MacArthur Working Group on Attachment, 1992) at 36 months (Dykas et al., 2006; Steele, Waters, Bost, Vaughn, Warren, Waters, Booth-LaForce, & Roisman, 2014). Research using the attachment narrative method has not included adolescents from economically disadvantaged backgrounds or minority youth in their samples. The current study was an effort to examine further secure base scriptedness and its relations to stress exposure and behavior problems in an at-risk adolescent sample.

Basic Psychosocial Needs Satisfaction

In addition to the parent-child attachment relationship, another important and perhaps overarching factor of adolescent development and wellbeing is basic psychosocial needs satisfaction. Self-Determination Theory (SDT) proposes the existence of three basic psychosocial needs of autonomy, competence, and relatedness (Deci & Ryan, 2000). Deci and Ryan (2000) define a basic need as "an energizing state that, if satisfied, conduces towards health and well-being but, if not satisfied, contributes to pathology and ill-being (p. 74)." Self-Determination Theory postulates that the three basic humanistic needs are universal and essential, but individual differences in environments and cultures influence ways in which these basic needs may be satisfied or thwarted (Deci & Ryan, 2000).

Autonomy is defined as the psychosocial need to feel that one's behavior and the outcomes of one's behavior are in one's locus of control (deCharms, 1968; Deci & Ryan, 2000). A key aspect of the satisfaction of the basic need of autonomy is that actions and outcomes are self-determined, in contrast to being under the control or influence of others (Johnson & Finney, 2010). The need of competence refers to having personal efficacy or feeling capable of performing tasks of a wide range of difficulties and feeling proficient at completing tasks in daily life (Deci & Ryan,

2011; Deci & Ryan, 2000; Harter, 1978). An individual who has satisfied the need of competence feels he or she has mastered the skills he or she has attempted. Relatedness is described as the need to be connected to, to interact with, and to care for and be cared for other people in one's life (Johnson & Finney, 2010). Individuals with high relatedness satisfaction feel secure and connected in their relationships (Baumeister & Leary, 1995; Deci & Ryan, 2000).

Environments that undermine basic need satisfaction diminish or slow the development of self-motivation and personal wellbeing (Deci & Ryan, 2000). Satisfaction of basic needs is theorized to give individuals a stronger inclination to have more interest, excitement, confidence, exploration, curiosity, persistence, and creativity. These qualities are thought to further cognitive, social, and emotional development. Therefore, individuals with high basic need satisfaction are theorized to exhibit vitality, self-worth, higher overall wellbeing, and fewer behavior problems (Deci & Ryan, 2000). Research has linked difficulties in establishing autonomy to a wide range of behavioral problems and other difficulties. Conversely, the satisfaction of the basic needs of autonomy, competency, and relatedness has been shown to correlate with higher well-being and better psychosocial adjustment (Sheldon & Gunz, 2009; Sheldon & Niemiec, 2006; Silverberg & Gondoli, 1996).

Although previous research has explored basic needs satisfaction and its relation to psychological health in adulthood, little is known about the basic needs satisfaction of adolescents, particularly those at risk. Research has looked at how the satisfaction of some social needs relates to psychological wellbeing in adolescence. One study found that the development of a higher level of autonomy, social relationships, rights, and responsibilities in adolescence is linked to high motivation, self-esteem, and psychosocial well-being (Chirkov & Ryan, 2001). Difficulties in establishing autonomy have been linked to a wide range of behavioral problems and other

difficulties (Sheldon & Gunz, 2009; Sheldon & Niemiec, 2006; Silverberg and Gondoli, 1996). However, a more comprehensive study of basic need satisfaction in adolescence, with specific focus paid to at-risk populations, is needed.

Adolescent Psychosocial Needs Satisfaction and Attachment

Attachment research has repeatedly demonstrated that the sensitivity of caregiver response plays a key role in the formation of attachment relationships (de Wolf & van IJzendoorn, 1997). As related previously, when this parenting sensitivity is undermined, secure attachment relationships are less likely to develop, which may contribute to a variety of poor psychological outcomes. An important question to understand is what constitutes sensitivity in caregiving, especially in parenting adolescents. Self-Determination theory provides a unique framework in which to examine sensitivity in parenting, by positing that caregivers who demonstrate sensitivity while raising a child are in fact striving to ensure that an individual's needs of autonomy, relatedness, and competency are satisfied (La Guardia, Ryan, Couchman, & Deci, 2000). It is thought that attachment security affects a child's ability to relate to others and their environment and may lead to multiple factors related to the satisfaction of basic psychosocial needs. By providing basic psychosocial needs satisfaction throughout their child's development, caregivers may foster secure attachment.

Attachment theory supports this connection to Self Determination theory in very young children, as elements of basic psychosocial need satisfaction can be seen in the behavior of the prototypical securely attached child. A young child with secure attachment to a caregiver is able to separate from parents with some, but no extreme distress (autonomy), will explore their environment (competence), and will use the parent as a safe base and return to the parent for comfort (relatedness) (Ainsworth et al., 1978).

Other theorists have also examined the connection between attachment and Self-Determination Theory. Ryan, Deci, and Grolnick (1995) discuss the possibility that parents who promote healthy autonomy in their children are actually facilitating the development of a secure attachment relationship with their child. La Guardia, Ryan, Couchman, and Deci (2000) examined the relation between self-report attachment and rankings on how well specific individuals support the needs of autonomy, relatedness, and competence in a college-age sample. This study found that in the relationships these college students had with their mothers, fathers, romantic partners, best friends, and another adult figure, the level of support for the satisfaction of autonomy, competency, and relatedness an individual provides significantly predicted the attachment security of that specific relationship.

Another study of 167 early adolescents found a relation between attachment security on the AAI and higher success in autonomy establishment and maintenance of relatedness with their caregivers (Allen et al., 2007). Higher levels of psychosocial functioning in adolescence may develop as caregivers continue to encourage and support healthy development through the transitional period of adolescence, leading to a stronger expectation of caregiver support and thus better attachment security in later life (Allen & Hauser, 1996). In a study performed by Allen and Hauser (1996), higher attachment security on the AAI in 731 twenty-five year olds was significantly related to the high levels of maternal encouragement of autonomy and relatedness at the age of 14. Taken together, prior studies support the potential value of examining the independent and combined associations among attachment security, psychosocial needs satisfaction, and behavior problems.

Summary and Study Aims

As discussed previously, adolescence is a period of great psychosocial, emotional, and physical change. Adolescents developing in disadvantaged communities are more likely to experience a higher exposure to cumulative risk factors including poverty, community and domestic violence, young parental age, family turmoil, family separation, single parenthood, parental high school dropout, and housing problems, and are therefore at higher risk for developing internalizing, externalizing, and other behavior problems compared to youth who experience less cumulative risk. Therefore, the current study examined the independent and combined contributions of basic need satisfaction and secure base scriptedness to a primary maternal caregiver as possible mitigating factors of internalizing and externalizing problem behaviors, among an at-risk population. The goals of this study were:

(1) To describe the salient demographic risk factors, exposure to community and family (environmental) stress, and current behavior problems of a sample of urban adolescents,

(2) To examine the relations between stress exposure, secure base scriptedness, psychosocial needs satisfaction, and adolescent behavior problems, and

(3) To understand the unique, relative, and combined contributions of environmental stress exposure, secure base scriptedness, and basic psychosocial needs satisfaction, while accounting for potential covariates.

It was predicted that youth who reported higher satisfaction of their basic psychosocial needs and demonstrated higher secure base scriptedness with their primary female caregiver would have fewer parent-reported behavior problems, whereas youth with higher levels of environmental stress exposure would experience increased levels of behavior problems. Moreover, it was predicted that environmental stress exposure, secure base scriptedness, and basic psychosocial

needs satisfaction would each independently and jointly predict the variance in youth internalizing, externalizing, and total problems, with basic psychological needs satisfaction and secure base scriptedness serving as protective factors against stress exposure.

CHAPTER 2

Methods

Participants

Participants in this study were 106 adolescents and their primary female caregivers. Most (84.0%) participants were recruited from the General Pediatrics and Adolescent Medicine Clinic at Children's Hospital of Michigan, which provides primary care to numerous urban, African American adolescents from economically disadvantaged families. Some (16.0%) participants were recruited from two local Detroit Churches within a 5 mile radius of the clinic. Inclusion criteria were that the adolescent be between the ages of 13 and 18 years old and that their primary caregiver (maternal or paternal) was the participating adult in the study.

Following recruitment at these sites, a total of 191 families agreed to allow research assistants to contact them to schedule a lab or home visit. Records on families who were approached by research assistants but declined to be called were not kept. Following recruitment, 85 families did not participate in the study. Reasons for these families lack of participation included having disconnected phones, never answering their phone or returning researchers' calls, saying that they were no longer interested in participating, and scheduling a visit and then canceling or failing to come to it after multiple attempts. Participant recruitment stopped after 106 youth were interviewed. In summary, 55.5% of the participants who agreed to be called to learn more about the study eventually completed the interviews.

Procedures

Funding. This study was funded by grants from the Wayne State University Graduate School for two Clinical Psychology students' dissertation projects (Brittany Kohlberger & Marilyn Franklin), one Clinical Psychology student's masters project (Patricia Richardson) as well as funds

from the College of Liberal Arts and Sciences at Wayne State University to Douglas Barnett of the WSU Department of Psychology.

Recruitment. Youth and caregiver participants were recruited from the Detroit, MI area in the following ways:

(1) Approached by a research assistant during their routine primary care appointment in the waiting room of the Adolescent Medicine Clinic.

(2) Contacted the research team via the flyers distributed at the Adolescent Medicine Clinic.

(3) Recruited via flyer from Little Rock Baptist Church and Second Baptist Church, local Detroit, MI church within 5 miles from the Adolescent Medicine Clinic.

Protocol. Following informed assent and consent, youth and caregiver participants each completed an approximately two-hour interview and assessment in which the Basic Needs Satisfaction in Life Scale, Pediatric Symptom Checklist, Secure Base Script Narrative Assessment protocol, and other relevant measures were administered. Participants were given a choice to complete the interview at a University office or at their home. In both cases, youths and caregivers were interviewed simultaneously in separate rooms. Adolescents and caregivers were each compensated $20 with their choice of cash or gift card. All procedures were approved by the Wayne State University Institutional Review Board.

Measures

Youth Measures

Demographic Information, Adolescent Report. A semi-structured interview was administered at the beginning of the protocol to obtain demographic information. Information collected from adolescents included their age, ethnic background, who they considered to be their primary female or male caregiver, and relationship to the caregiver participating.

Environmental Stress Exposure, Adolescent Report. The Things I Have Seen and Heard Questionnaire (TISH; Richters & Martinez, 1990) was completed by the adolescent and used to assess the level of community stress and family violence an adolescent participant has witnessed or experienced. A modified version of the scale was created for use in this study. The modification was to leave out three items that pertained to youth perceptions rather than exposure to a violent or stressful event per se (e.g., *I feel safe when I am at school)*. The remaining 17-item self-report questionnaire asked participants to indicate how many times they have experienced each stressful event stated on a 4-level Likert scale of 0 to 4, with 0 = 0 times, 1 = 1 time, 2 = 2 times, 3 = 3 times, and 4 = they have witnessed experienced this event or stressor many times. Sample scale items include: *I have heard guns being shot, Somebody threatened to stab me,* and *Grown ups in my home threaten to stab or shoot each other*. Cronbach's alpha for this sample was .744.

Adolescent Secure Base Scriptedness. The Narrative Assessment of Adolescent Attachment Representations measure (Waters, Rodrigues, & Ridgeway, 1998) was used to assess the adolescent's cognitive representations of secure base scripts via obtaining orally produced attachment –related narratives from adolescents. For the purposes of this study, the assessment took approximately 20 minutes and utilized four word-prompt outlines related to mother attachment relationships (or the primary female caregiver if this person is not the adolescents mother) and one sample outline, "A Trip to the Beach" to ensure the adolescent understood the task. Since prior research indicated there may be gender differences related to each word prompt outline, adolescent boys were administered the story "The Haircut," while adolescent girls were administered "Acne" (Dykas et al., 2006). Both boys and girls were administered "The Basketball Game" and "The Party" for a total of three attachment stories administered to each child. The order of the stories administered was counterbalanced across participants and gender.

Once stories were transcribed, de-identified and randomized, 3 independent raters coded each story for secure base content. Each story was coded on a 1 to 7 well delineated scale with 1 being lowest/no secure base content and odd content and with 7 being highest secure base script content and high psychological/emotional content (see Appendix E for full coding scale of Waters, unpublished manuscript). By definition, any score coded >3 indicates that the adolescent has some knowledge of secure base script (one aspect of attachment). Any score ≤3 is indicative of lack of a secure base script knowledge. The 3 coders had high interrater reliability with Cronbach's alphas of .880, .894, and .915 for the stories of Acne/The Haircut, The Party, and The Basketball Game respectively. The scores of each rater were averaged into composite scores for Acne/The Haircut, The Party, and The Basketball Game. Composite scores were found to have adequate internal consistency with a Cronbach's alpha of .603, and were averaged into an overall secure base scriptedness composite score. This secure base script score was used in all subsequent analyses.

Basic Need Satisfaction. Adolescents completed the Basic Need Satisfaction in Life Scale, part of the Basic Psychological Needs Scales (BPNS; Deci & Ryan, 2000; Gange, 2003; Kashdan, Julian, Merritt, & Uswatte, 2006). This 21-item scale consists of 3 factors, the 7-item Satisfaction of the Need for Autonomy Scale, the 6-item Satisfaction of the Need for Competence Scale, and the 8-item Satisfaction of the Need for Relatedness Scale (Johnson & Finney, 2010). The scale also loads on a unidimensional factor, the Basic Needs Satisfaction General Scale (Johnson & Finney, 2010). Sample scale items include: *I feel like I am free to decide for myself how to live my life* (autonomy), *Often, I do not feel very competent* (reversed scored for competence), and *I really like the people I interact with* (relatedness) (see Appendix D).

Youth respond to each item using a 7-point Likert scale which assess the level to which each adolescent feels the item describes them (1 = not at all true; 7 = very true). Total composite

scores were calculated for autonomy, competence, relatedness, and general needs in order to examine how urban adolescents characterize their satisfaction in each of these domains. High scores reflected higher levels of need satisfaction in any of the areas. Cronbach's alphas for the current sample were .494, .615, and .705 for the scales of autonomy satisfaction, competence satisfaction, and relatedness satisfaction, respectively. Examination of the autonomy satisfaction scale indicated one item that appeared to be a poor fit with the others. Removing the item, *In my daily life, I frequently have to do what I am told*, resulted in an alpha of .662. Consequently, a 6 rather than 7 item scale was utilized in the remaining analyses.

Receptive Vocabulary. The Peabody Picture Vocabulary Test, Fourth Edition (PPVT-IV; Dunn & Dunn, 2007) was used to assess adolescents' receptive vocabulary and estimate their general intellectual functioning. The PPVT-IV is a picture vocabulary test in which participants are shown four pictures and asked by the examiner to select the picture that demonstrates the meaning a spoken word. Using the participants' responses, the PPVT-IV generates a standard score with a nationally normed mean of 100 and standard deviation of 15. The PPVT-IV has been shown to be significantly correlated with the Wechsler Intelligence Scale for Children – Third Edition (WISC-III), and therefore, serves as an estimate of IQ ($r = 0.85$, Hodapp & Gerken, 1999). Additionally, the PPVT-IV has acceptable validity and internal consistency in adolescent population norms ($\alpha = 0.96$-0.98; Dunn & Dunn, 2007).

Caregiver Measures

Demographic Information, Caregiver Report. A semi-structured interview was administered at the beginning of the caregiver protocol in order to obtain demographic information including caregiver age, ethnic background, annual family income, marital status, educational

background, who they considered to be their child's primary female and male caregiver, and their relationship to the adolescent participant.

Environmental Stress Exposure, Caregiver Report. The 22-item, Stressful Life Events Checklist (Work, Cowen, Parker, & Wyman, 1990) was completed by the caregiver and used to assess the stressful events that the adolescent experienced. A 20-item modified version of the checklist was used in this study. The modification was to leave out two items that pertained to the adolescent's actions rather than exposure to a violent or stressful event (e.g. *Child has used alcohol or drugs)*. Sample checklist items include: *Death in the immediate family*, and *Parent figures divorced or separated*. Participants were asked if their child has seen or heard something within their lifetime (Yes = 1, No = 0). A composite score for lifetime history of stressful life events was calculated. High scores on this composite indicate that the adolescent has experienced high levels of stressful life events in his or her lifetime. Cronbach's alpha for this sample was .846.

Adolescent Problem Behaviors, Caregiver Report. The 112-item Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) was administered to caregivers in order to examine their adolescent's current internalizing, externalizing, and total behavior problems. Sample items include: *Breaks rules at home, school, or elsewhere* and *Self-conscious or easily embarrassed*. This scale asks caregivers to indicate how often in the past six months the youth exhibited each symptom using a 3-level likert scale, where 0 = never, 1 = sometimes, and 2 = often. Total composite scores of internalizing, externalizing, and total problems were calculated and converted to standardized scores based on national norms by age and sex with a mean of 50 and standard deviation of 10 in order to examine the level of psychosocial dysfunction the caregiver reports. Higher composite scores indicate higher numbers of psychological problems. T-scores of 65 or high indicate clinically significant concerns.

Composite Variables

Demographic Risk. In order to index the amount of socioeconomic risk an adolescent experienced a demographic risk variable was created from four indicators of environmental disadvantage: family income, parental age at child's birth, single caregiver household status, and parental educational level. For the purpose of quantifying risk, one point was given when each of the following characteristics was met: a) total family income was below $30,000/year, b) the family was a single parent household, c) the parent was age 19 years or younger when the participating adolescent was born, and d) the parent had not completed high school (nor a General Equivalency Degree). The resulting demographic risk scale ranged from 0 to 4. A higher demographic risk score suggested an adolescent had higher levels of demographic risk.

Cumulative Environmental Stress Exposure. In order to estimate the level of environmental stress exposure an adolescent has experienced, a composite of community and domestic violence and other stressful life events was created using both the adolescent and parent reports of stress exposure. Because the adolescent-report Things I Have Seen and Heard questionnaire and the caregiver-report Stressful Event Checklist asks about different stressful events, a composite variable for cumulative environmental stress exposure variable was created to measure a wider variety of stress exposure. The adolescent and caregiver reports were not significantly correlated (r =.129, p =.196), which is not surprising as the two scales ask about different stressful events. Cumulative environmental stress exposure was calculated by giving one point for each of the 17 stressful events an adolescent endorsed (1, 2, 3, or 4) on the Things I have Seen and Heard questionnaire and one point for each of the 20 items the parent endorsed on the Lifetime Stressful Events Checklist. The resulting composite variable provided scores ranging from 0 to 37, with a

higher score reflecting higher rates of environmental stress experienced. Within this sample, items of the composite were found to have high internal consistency with a Cronbach's alpha of .810.

Data Analysis

The following data analyses were conducted for each of the following aims:

Aim (1): Descriptive and frequency statistics were performed in order to ascertain the levels of demographic risk, stress exposure, and parent-reported youth behavior problems present in this sample.

Aim (2): Pearson correlations were calculated in order to examine the relations between stress exposure, secure base scriptedness, and psychosocial needs satisfaction and parent-reported internalizing, externalizing, and total behavior problems in this sample.

Aim (3): Multiple regressions were run in order to explore the unique and combined relations between environmental stress exposure, secure base scriptedness, basic psychosocial needs satisfaction behavior problems in this sample. When indicated, additional covariates were included in the models to account for their contribution in predicting overall behavior problems. Lastly, statistical interactions between stressful events and secure base scriptedness and basic psychosocial need satisfaction were examined as predictors of behavior problems in order to examine whether these protective processes buffered the association between stress exposure and behavior problems.

CHAPTER 3

Results

Preliminary Analyses

Power: Power analyses were conducted using G*power software to insure the viability of studying the specific aims of this study with the obtained sample size. Assuming an effect size of .2, a two-tailed alpha at .05, a predictive power of .8 and including 5 predictors in the model, it was estimated that that intended analyses would require a sample of n = 70. Thus, the sample sizes used in this study provided adequate ability to detect significant differences, presuming a modest effect size and including additional covariates as needed.

Outlier Analysis: All variables were examined for outliers. In order to screen for univariate outliers, standardized z-scores and scatterplots were generated and examined for each variable. Z-score values exceeding +/-3.29 were considered to be univariate outliers. Outlier analysis revealed one outlier in the parent-reported youth internalizing symptoms (z = 3.36), one outlier in the autonomy satisfaction score (z = -3.31), and one outlier in the relatedness satisfaction score (z = -3.35). All outliers were replaced with the next largest value in the dataset for the specific variable.

Normality Analysis: After outlier analysis, all variables were screened for normality by computing skew and kurtosis statistics and examining histograms. Results showed that the variable of secure base scriptedness was significantly positively skewed. This variable was transformed using a square root transformation successfully reducing skew to nonsignificance. All of the following analyses except descriptive statistics were run using the transformed variable. The variables of competence, relatedness, and general needs satisfaction were all significantly negatively skewed. Numerous transformations were performed (both before and after outlier analysis), including square root, inverse, cube root, log, and natural log. All attempted

transformations resulted in transformed variables that were significantly more skewed than the original variables. Therefore, it was decided to conduct analyses with the untransformed variables of competence, relatedness, and general needs satisfaction.

Missing Data: A total sample size of 106 adolescent-caregiver dyads was recruited for use in this thesis. However, due to changes in protocol (i.e., adding measures after data collection had begun) some variables were not available for the total sample. Specifically the variables of caregiver relationship to youth, teen parenthood, and membership in a single parent household were missing for 2 participants (1.9%) and were determined to be missing randomly for the key dependent variables (i.e., behavior problems, psychosocial needs satisfaction, stress exposure, youth age, visit and recruitment location, receptive vocabulary, ethnicity, relationship to caregiver, and all other demographic risk variables) based on separate variance t-tests. Environmental stress exposure (composite) was missing for 4 participants (3.8%) and was determined to be missing randomly on the key dependent variables based on separate variance t-tests. Due to the fact that this data was missing at random and/or less than 5% of the overall sample was missing, the missing data was considered to be a less serious problem in which all ways of handling missing data would produce similar results (Tabachnick & Fidell, 2013). Therefore, the missing data was not imputed and pairwise deletion of the missing values was utilized in the relevant analyses.

The variables of caregiver education and income were missing for 14 (13.2%) and 12 (11.3%) participants respectively and appeared to be missing non-randomly on the variable of parent-reported internalizing problems based on a separate variance t-tests. Participants with data missing on the caregiver education and income variables had significantly higher internalizing symptoms than participants without data missing on these variables. All other separate variances t-tests found no significance relations between key study variables and missing data. Due to the

fact that the data on the caregiver education and income variables were missing systematically, traditional data imputation techniques might have caused serious problems in data analysis and might have made results less generalizable (Tabachnick & Fidell, 2013). For example, imputing the missing data with the mean values for each variable might have changed their relations with the dependent variable of internalizing behavior problems, thus affecting regressions in which these variables are involved. Therefore, it was decided that data imputation would not be reported for variables and analysis including these variables were reported on a reduced sample size of 92. Power analyses suggest that regressions using the subsample of 92 still had sufficient power.

Sibling Participation: There were 91 families participating in the study with a total 106 adolescents. Of the 91 families, 13 families had 2 children who participated and 1 family had 3 children who participated. In the 14 families with participating siblings, the same single caregiver completed measures on each of the children separately, resulting in non-independent participants, a violation of the statistical assumptions of a regression. Consequently, analyses were conducting using both the whole sample (including siblings) and a sample with only one randomly selected sibling per family included to examine how the regression analyses were affected. Results of the analyses revealed that there was no difference in direction or general magnitude of the relations between variables when using the whole sample compared to the subsample (1 sibling per family); however, several significance values in the smaller sample became a non-significant trend, likely due to decreases in power. In order to increase power in the analyses, all siblings were included in all subsequent analyses discussed in this thesis. Although the larger sample was used in analysis, it is of note that the changes from significance to non-significant trend could also be due to non-independence of caregiver report in the larger sample and should be considered when interpreting the results and conclusions of this study.

Covariate Analysis: Procedural Study Characteristics: Independent samples t-tests found there were no significant associations between the key variables and the potential procedural covariates of visit location and recruitment location (See Table 2). Therefore, neither of these variables was controlled for in subsequent analyses.

Covariate Analysis: Youth Characteristics: Several youth demographic characteristics were examined as possible covariates. Independent samples t-tests and Pearson correlations revealed that there was no significant differences in the variables of parent-reported internalizing, externalizing, and total behavior problems based on youth age, gender, ethnic background, and receptive vocabulary (see Tables 2 and 3). Therefore, these variables were not used as covariates in subsequent analyses.

Covariate Analysis: Caregiver Characteristics: Several caregiver demographic characteristics were examined as possible covariates. Independent samples t-tests and Pearson correlations revealed that there was no significant differences based on caregiver relationship to youth (youth's biological mother vs. other caregiver role), income, and single parenthood on the variables of parent-reported internalizing, externalizing, and total behavior problems (see Tables 2 and 3). Therefore, these variables were not used as covariates in any subsequent analyses.

Independent samples t-tests revealed that there were significant differences based on caregiver education (having earned or not earned a high school diploma or GED) on parent-reported internalizing, externalizing, and total problems (see Table 2). Compared with adolescents whose caregiver had received a high school or equivalent education, those with a caregiver who did not receive a high school diploma or GED had significantly higher levels of internalizing (M = 61.71, SD = 7.73 *v*. M = 54.87, SD = 9.12), externalizing (M = 57.71, SD = 10.72 *v*. M = 52.23, SD = 11.14), and total behavior problems (M = 60.95, SD = 10.46 *v*. M = 54.48, SD = 11.17).

Pearson correlations revealed that there were no significant correlations between demographic risk and the variable of parent-reported externalizing problems but there were significant correlations between the demographic risk and parent-reported internalizing, and total behavior problems (see Table 3). Multiple regressions predicting internalizing, externalizing, and total behavior problems with caregiver education and demographic risk revealed that the variance in behavior problems was accounted for by caregiver education and that the significant correlation between demographic risk and behavior problems was due to the fact that caregiver education was part of the demographic risk variable. Therefore, caregiver education was used as a covariate in remaining analyses involving internalizing, externalizing, and total problems and demographic risk was not examined further.

Because theory suggested that youth receptive vocabulary might be confounded with secure base scriptedness score, its relation as well as the relations of internalizing, externalizing, and total problems with receptive vocabulary were examined. Pearson correlations revealed that there was not a significant correlation between adolescent receptive vocabulary and the variables of secure base scriptedness, parent-reported internalizing, externalizing, and total problems. As predicted, there was a significant correlation between adolescent youth receptive vocabulary and secure base scriptedness (see Table 3). Therefore, youth receptive vocabulary was used as a covariate in analyses involving the variable of secure base scriptedness. However, the use of receptive vocabulary as a covariate did not change the direction or significance of any other predictor variables or contribute significant changes in variances in any of the study's dependent variables. Therefore, subsequent analyses provided in this thesis did not include receptive vocabulary as a covariate.

Aim (1): Sample Description

Aim one sought to describe the levels of demographic risk, stress exposure, and parent-reported youth internalizing, externalizing, and total behavior problems present in this sample of urban adolescents. Descriptive and frequency statistics were performed in order to describe the sample in terms of these variables (see Table 1).

Demographic Risk: The majority of youth in this sample, 65.1% (69) had a participating caregiver who was single. The majority, 56.6% (60), of youth in this study had a participating caregiver whose annual family income was less than $30,000. Additionally, 16.0% (17) of the participating caregivers was a teen parent when the participating adolescent was born. Children of participating caregivers who did not graduate high school or earn their GED made up 19.8% (21) of the sample. The average total demographic risk value (a value ranging from 0 to 4, where each of the 4 risk areas discussed above are given 1 point) for this sample was 1.74 (.94).

Environmental Stress Exposure: Together, adolescents and their caregivers reported that youth in the sample experienced an average of more than 10 different stressful events (M = 10.89, SD = 5.26). Youth reported exposure to over 5 violent and/or stressful incidents (M = 5.37 SD = 2.80) and caregivers reported youth experiencing over 5 stressful life events (M = 5.58, SD = 4.13). 100 (83.33%) adolescents reported that they heard guns being shot, 100 (83.33%) had seen someone arrested, 69 (57.5%) had seen drug deals, 97 (80.83%) had seen someone get beaten up, and 15 (12.5%) had seen a dead body outside. 93 (77.5%) of parents reported that their children experienced the death of a family or household member, 44 (36.67%) had their parents split up or divorced, 47 (44.34%) had a parent or family member with a serious behavioral or psychiatric problem, 35 (29.17%) had a parent or family member with a serious alcohol or drug problem, 29 (24.17%) had a parent spend time in jail, 25 (20.83%) had witnessed angry violence in their home, and 14 (11.67%) had been a victim of a serious crime.

Behavior Problems: In terms of caregiver-rated problem behaviors, this sample had average scores of 57.59 (SD=11.38), 54.00 (SD=11.38), and 56.70 (SD=11.60) for internalizing, externalizing, and total problems respectively (Ranges: 33.0-78.0, 34.0-80.0, & 24.0-88.0). This sample consisted of 27 (25.47%) adolescents in the clinically significant range (≥65) for parent-reported internalizing problems, 21 (19.81%) in the clinically significant range for parent-reported externalizing problems, and 30 (28.30%) in the clinically significant range for parent-reported total problems. 30 (28.5%) adolescents in this sample had at least one clinical elevation for parent-reported psychological problems.

Aim (2): Correlations of Key Variables

Aim two sought to examine the relations between stress exposure, secure base scriptedness, basic psychosocial needs satisfaction, and behavior problems in this sample. To do this, Pearson correlations were run to examine the bivariate correlations between the key study variables (see Table 4). According to these bivariate correlations, secure base scriptedness was significantly negatively correlated with parent-reported youth internalizing behavior problems, but not externalizing or total behavior problems. All of the basic psychosocial needs satisfaction variables were significantly negatively correlated with internalizing behavior problems. Competence and relatedness satisfaction were significantly negatively correlated with parent-reported youth externalizing and total behavior problems while autonomy was negatively correlated at a nonsignificant trend level. Of the three independent need satisfaction variables, relatedness satisfaction had the strongest correlation with all behavior problems, followed by competence satisfaction, with autonomy satisfaction having the weakest association with youth internalizing, externalizing, and total behavior problems. General needs satisfaction, as a composite of all three need satisfaction variables, had higher correlations with behavior problems than the satisfaction of

any one need. None of the basic psychosocial needs satisfaction variables were significantly correlated with secure base scriptedness. The composite variable of youth environmental stress exposure was significantly negatively correlated with parent-reported youth internalizing, externalizing, and total behavior problems. Neither the youth nor caregiver report of youth environmental stress exposure was significantly related to youth externalizing or total behavior problems, while parent but not youth-reported stress exposure was significantly negatively related to youth internalizing behavior problems.

Aim (3): Unique and Relative Contributions of Key Variables

Aim 3 examined regression analyses in order to understand the unique and relative contributions stress exposure, secure base scriptedness, and psychosocial basic needs satisfaction, on behavior problems in this sample. Multiple regressions were run predicting the variables of parent-reported internalizing, externalizing, and total behavior problems. Moderated multiple regressions were run in order to examine interactions between secure base scriptedness, psychosocial need satisfaction and stress exposure when predicting behavior problems in order to examine whether secure base scriptedness and need satisfaction protect against stress exposure's negative affect on behavior problems. In all regression analyses, the covariate of caregiver education was included to account for its contribution to predicting behavior problems.

Basic Needs Satisfaction: To examine the unique and combined contributions of the four basic needs satisfaction variables, hierarchical multiple regressions were run using the four predictor variables of autonomy satisfaction, competence satisfaction, relatedness satisfaction, and general basic needs satisfaction to predict parent-reported youth internalizing, externalizing, and total problems (including the covariates caregiver education). Regression analyses revealed that the set of predictors including autonomy, competence, and relatedness satisfaction predicted

parent-reported youth internalizing problems above what was predicted by the covariate of caregiver education alone at the nonsignificant trend level ($\Delta R^2 = .073$, $F(3, 87) = 2.540$, $p = .062$; see Table 5). Regression analyses revealed that the set of predictors did not significantly predicted parent-reported youth externalizing or total problems above what was predicted by the covariate of caregiver education (Externalizing Problems $\Delta R^2 = .036$, $F(3, 87) = 1.118$, $p = .346$; Total Problems $\Delta R^2 = .054$, $F(3, 87) = 1.766$, $p = .160$;see Table 5). The variable of general needs satisfaction did not add any unique variance in internalizing, externalizing, or total problems above what was accounted for by the variables of caregiver education, autonomy satisfaction, competence satisfaction, and relatedness satisfaction (Internalizing Problems $\Delta R^2 = .000$, $F(1, 86) = .007$, $p = .933$; Externalizing Problems $\Delta R^2 = .006$, $F(1, 86) = .532$, $p = .468$; Total Problems $\Delta R^2 = .002$, $F(1, 86) = .209$, $p = .648$; see Table 5). This, along with high correlations between general needs satisfaction and the other psychosocial needs variables suggests that general needs satisfaction, as composite of the three other need satisfaction variables, did not account for any new information that the individual variables of autonomy, competence, and relatedness satisfaction had not provided. Therefore, general needs satisfaction was not used as a predictor variable in any subsequent analyses.

Relative Contributions of Stress, Secure Base Scriptedness, and Basic Need Satisfaction: To examine the relative contributions of youth environmental stress exposure, secure base scriptedness, and basic needs satisfaction on parent-reported internalizing, externalizing, and total problems, hierarchical linear regressions were run including the covariate of caregiver education when appropriate.

The hierarchical regressions predicting parent-reported youth internalizing problems found that the predictors of environmental stress exposure and relatedness satisfaction and the covariate

of caregiver education each uniquely explained significant variance in parent-reported youth internalizing problems (Stress Exposure: ΔR^2 = .064, F(1, 87) = 6.759, p =.011; Relatedness Satisfaction: ΔR^2 = .061, F(1, 85) = 6.968, p =.010; Caregiver Education: ΔR^2 = .107, F(1, 88) = 10.556, p =.002; see Tables 6-8). Secure base scriptedness, autonomy satisfaction, and competence satisfaction did not uniquely predict the significant variance in internalizing behavior problems (Secure Base Scriptedness: ΔR^2 = .018, F(1, 86) = 1.929, p =.168; Autonomy Satisfaction: ΔR^2 = .023, F(1, 85) = 2.531, p =.115; Competence Satisfaction: ΔR^2 = .014, F(1, 85) = 1.499, p =.224; see Tables 6-8).

The hierarchical regression predicting parent-reported youth externalizing problems found that only the covariate of caregiver education predicted unique variance in externalizing behavior problems (Caregiver Education: ΔR^2 = .050, F(1, 88) = 4.652, p =.034; see Tables 6-8). The predictor of environmental stress exposure predicted variance in externalizing problems at the nonsignificant trend level (Stress Exposure: ΔR^2 = .037, F(1, 87) = 3.560, p =.063; see Tables 6-8). The predictors of secure base scriptedness, autonomy satisfaction, competence satisfaction, and relatedness satisfaction did not uniquely contribute to parent-reported youth externalizing symptoms (Secure Base Scriptedness: ΔR^2 = .001, F(1, 86) = .121, p =.729; Autonomy Satisfaction: ΔR^2 = .015, F(1, 85) = 1.409, p =.238; Competence Satisfaction: ΔR^2 = .014, F(1, 85) = 1.281, p =.261; Relatedness Satisfaction: ΔR^2 = .019, F(1, 85) = 1.857, p =.177; see Tables 6-8).

The hierarchical regression predicting parent-reported youth total problems found that the predictors of environmental stress exposure, relatedness satisfaction, and the covariate of caregiver education uniquely predicted significant variance (Stress Exposure: ΔR^2 = .051, F(1, 87) = 5.025, p =.028; Relatedness Satisfaction: ΔR^2 = .044, F(1, 85) = 4.510, p =.037; Caregiver Education:

ΔR^2 = .068, F(1, 88) = 6.382, p =.013; see Tables 6-8). Secure base scriptedness, autonomy satisfaction, and competence satisfaction did not uniquely predict the variance in parent-reported total problems (Secure Base Scriptedness: ΔR^2 = .007, F(1, 86) = .693, p =.408; Autonomy Satisfaction: ΔR^2 = .026, F(1, 85) = 2.641, p =.108; Competence Satisfaction: ΔR^2 = .003, F(1, 85) = .323, p =.571; see Tables 6-8).

Combined Contributions of Stress, Secure Base Scriptedness, and Basic Need Satisfaction:

Moderation analyses were run in order to examine the contributions of psychosocial needs satisfaction and secure base scriptedness on the relation between stress exposure and behavior problems in this sample. The covariate of caregiver education was included in the models to account for its contribution in predicting parent-reported youth behavior problems. Before analyses were conducted, all predictor and covariate variables were centered. To test for potential moderation effects on parent-reported youth internalizing, externalizing, and total problems, interaction terms were created for the variable of environmental stress exposure with each of the variables of secure base scriptedness, autonomy satisfaction, competence satisfaction, relatedness satisfaction, and general needs satisfaction. Each interaction term was tested in a separate regression analysis. None of the regressions revealed a significant interaction term, suggesting there were no significant interactions between the key predictor variables.

CHAPTER 4

Discussion

This study aimed to describe the demographic risk, stress exposure, and problem behaviors in a sample of urban adolescents in Detroit. Further, this study sought to explore the associations between stress exposure, secure base scriptedness, psychosocial needs satisfaction, internalizing, externalizing, and total behavior problems in this sample. Lastly, this study examined the relative and combined contributions of stress exposure, secure base scriptedness, and basic psychosocial needs satisfaction on the behavior problems of this sample of youth. Analyses were conducted to investigate whether secure base scriptedness and basic psychosocial needs satisfaction were associated with decreased adolescent behavior problems and act as protective factors from the deleterious effects of stressful events on behavior problems in order to contribute to adolescent resiliency research.

Description of Sample: High Demographic Risk, Stress, and Problem Behaviors

The study was successful in recruiting an economically disadvantaged, stressed sample of youth with significant behavior problems. The majority of youth in this sample (56.6%) came from homes with annual family incomes under $30,000. The majority (65.1%) also came from single caregiver homes. 16% were children of teenage parents and 19.8% had parents without completing a high school education or its equivalent. Furthermore, youth in this sample experienced numerous stressful life events. Previous studies have used an index of experiencing 4 or more stressful life events to identify youth "stressed" groups (Wyman, Cowen, Work, Hoyt-Meyers, Magnus, & Fagen, 1999). On average, this sample of adolescents experienced more than

10 different stressful life events according to combined adolescent and caregiver reports. The majority of adolescents had experienced events such as hearing gunshots (83.33%), seeing someone arrested (83.33%), seeing drug deals (57.5%), and seeing someone get beat up (80.83%). Additionally, 29.17% of the adolescents in the sample reportedly had a parent or family member with a serious alcohol or drug problem, 24.17% had a parent spend time in jail, 20.83% had witnessed angry violence in their home, and 11.67% had been a victim of a serious crime.

Also as expected, data collected indicated that adolescents in this sample were at significant risk for psychological problems. 28.5% of the adolescents in this sample were reported to have a clinically significant elevation in at least one of the areas of internalizing, externalizing or total psychological behavior problems. This rate is consistent with data collected from similarly disadvantaged samples and substantially higher than that of a normative U.S. adolescent sample (Achenbach & Rescorla, 2001; Grant et. al., 2004).

Positive and Negative Correlates of Behavior Problems in Urban Adolescents

Consistent with previous research findings, youth with higher stress exposure exhibited higher levels of internalizing, externalizing, and total behavior problems (Cutrona, Wallace, & Wesner 2006; Deardorff, Gonzales, & Sandler, 2003; Gorman-Smith & Tolan 1998; Grant, Compas, Stuhmacher, Thurm, McMahon, & Halpert 2003; Wickrama & Bryant 2003). Also aligned with prior research, demographic risk, specifically low parental education, was associated with higher rates of behavioral problems in this sample. Education level is a major factor in determining an individual's socioeconomic status (Adler & Newman, 2002). It is possible that caregiver education is highly correlated with extreme levels of environmental disadvantage (extreme poverty, lack of resources, neighborhood violence and crime, etc.) that the other demographic risk measures of this study did not capture. Additionally, low education is associated

with poverty, unemployment, and increased parenting stress (Evans et al., 2007; McLoyd, 1998; Wickrama & Bryant 2003). These factors are more likely to undermined parenting sensitivity and are associated with less maternal warmth, higher rates of behavior problems, psychopathology, and poor academic achievement (Klebanov, Brooks-Gunn, & Duncan, 1994; McLoyd, 1998). Moreover, parents without a high school education are less likely to have health insurance and other benefits or recourses instrumental in the prevention and treatment of child behavioral and psychological problems (Padgett, Patrick, Burns, Schlesinger, & Cohen, 1993; Zahner & Daskalakis, 1997). Research has also linked parental education, specifically the education level of the mother, with the likelihood of referring a child for treatment, with the rates of parental referrals for mental health services increasing as maternal education levels increased (Langner, Gersten, Greene, Eisenberg, Herson, & McCarthy, 1974).

As predicted, youth with higher secure base scriptedness scores demonstrated decreased rates of internalizing behavior problems. Contrary to expectations, secure base scriptedness did not correlate significantly with externalizing or total behavior problems. This finding was contradictory to what would be expected given a previous meta-analysis, which found correlations between youth externalizing behavior problems and attachment insecurity (Fearon, et al., 2010). However, Fearon et al. (2010) examined attachment insecurity and disorganized attachment instead of the measure used in this thesis, which specifically looks at levels of secure base scriptedness. Therefore, it is possible that externalizing and total problems are related to other aspects of attachment (or aspects of attachment insecurity) not measured by the narrative secure base script measure (which measures a single aspect of attachment security). At the time of this study, no prior research had examined the relations between secure base scriptedness and behavioral problems. Also as expected, the satisfaction of autonomy, competence, relatedness,

and general psychosocial needs all correlated with lower rates of internalizing, externalizing, and total psychological problems.

Unique and Combined Effects of Stress Exposure, Secure Base Scriptedness, and Psychosocial Needs Satisfaction on Behavior Problems

Results indicated that caregiver education, stress exposure, and relatedness satisfaction were unique predictors of internalizing and total problems in this demographically disadvantaged sample. Caregiver education and stress exposure's influences on behavior problems were consistent with the cumulative risk theory, which posited children in adolescents from disadvantaged and at-risk environments exhibit increased behavioral problems due to accumulation of multiple stressors (Appleyard et al., 2005; Evans & Kim, 2007; Evans et al., 2007; Forehand et al., 1998; Masten & Wright, 1998).

The unique relation between high relatedness satisfaction and less behavior problems was consistent with expectations; however, somewhat inconsistent with Self-Determination theory. More specifically, autonomy and competence satisfaction did not predict significant unique variance in behavior problems. Self-Determination theory suggests that individuals with high relatedness satisfaction feel connected and supported in their relationships and that these feelings, along with the satisfaction of autonomy (feeling in control of one's behavior and outcomes) and competence (feeling capable and proficient in daily life), will lead to reduction in behavior problems (Baumeister & Leary, 1995; deCharms, 1968; Deci & Ryan, 2000; Deci & Ryan, 2011; Harter, 1978). However, the current study's findings supported the idea that the satisfaction of relatedness may be a more salient support factor in fostering adolescent mental health compared to the satisfaction of other psychosocial needs. The unique association between feelings of security and connectedness in one's relationships with others and less behavior problems, and not the

satisfaction of other psychosocial needs, was consistent with many theories of social psychology that suggest that social support and feeling connected to other people have positive influences on psychological outcomes (Cohen & Willis, 1985). It is possible that adolescents who had developed general feelings of relatedness (e.g., with parents, family, peers) were therefore able to be rely on or be comforted by other people in times of distress, and thus would have less internalizing and total behavior problems. It is also possible, as Self Determination theory posits, that individuals with higher relatedness satisfaction have higher self-esteem, self-efficacy, and intrinsic motivation, which are associated with less behavior problems (Deci & Ryan, 2000). Moreover, those with less feelings of relatedness satisfaction may have been experiencing feelings of low self-esteem, self-efficacy, and intrinsic motivation, and more frustration, anger, and rejection, thereby increasing their behavior problems.

However, inconsistent with both attachment theory and expectations, secure base scriptedness was not a unique predictor of behavior problems in this sample. This may be due to the fact that this study only assessed secure base scriptedness to a maternal or primary female caregiver. Firstly, it is possible that the secure base scriptedness measure did not capture aspects of the mother-child secure attachment relationship that have been previously shown to provide protection against behavioral problems (Fearon et al., 2010). Secondly, adolescents in this sample may receive secure base support from other caregivers, peers, and significant others in their lives. This is somewhat inconsistent with expectations and theory, which states that adolescents generalize and integrate past attachment experiences into more nuanced attachment schemas that they use to regulate their emotions and behaviors with all people (Allen & Land, 1999). However, it is possible that the youth in this sample had yet to generalize their secure base script schemas to the primary female caregiver the task asks about (due to closer relationships with other attachment

figures or limited interactions with the female caregiver). Additionally, there are many other aspects of social support other than attachment security that research has shown to correlate with decreases in behavior problems and psychological symptoms, such as supportive peer relationships (Rigby, 2000). It is possible that the relatedness variable may be capturing other types of social support, feelings of acceptance, and aspects of attachment that is not captured by the secure base script.

Despite the fact that relatedness satisfaction was the only unique predictor of behavior problems of the three basic psychosocial needs, there was a moderately strong correlation among all psychosocial needs satisfaction variables. This moderately strong correlation among different psychosocial need satisfaction variables suggests either shared method variance or the interconnectedness of these variables. By supporting the satisfaction of the one psychosocial need of relatedness, environments provide general support for other psychosocial basic needs, an idea supported by research that suggests that good relationships, social support, and perceived social support foster positive growth and development (Cohen & Wills, 1985; Compas, Slavin, Wagner, & Vannatta, 1986; Rigby, 2000).

Surprisingly, only caregiver education was a significant unique predictor of externalizing problems. This may be due to lack of insight or unreliable reporting of one's psychosocial needs satisfaction by the adolescents with elevated externalizing behavior problems in this sample. Baumeister, Smart, and Boden (1996) posit that externalizing behavior problems such as violence and aggression are due to highly favorable views of oneself, which lead to acting out behaviors when these feelings or egotism are threatened. Individuals with high levels of externalizing problems are thus more likely to report themselves in a highly favorable light, despite its potential inaccuracy. Another possible explanation is that relatedness is such an important need to be

satisfied that adolescents may search for social support in non-adaptive ways, such as involvement with antisocial peers. Thus, the satisfaction of relatedness can act as both a positive and negative influence on adolescents' problem behaviors. Bender and Losel (1997) found that in a sample of 100 high-risk adolescents, high levels of social support and relatedness to one's peer group was associated with externalizing behaviors, with adolescents with social connections to prosocial peers exhibiting less externalizing behavior problems, while adolescents with connections to deviant peers exhibiting more externalizing behavior problems. A third possible explanation is that there were important additional variables not explored in this study that had strong influences on externalizing behavior problems. For example, research has found that low parental monitoring of adolescent activities and whereabouts is a strong predictor of antisocial behavior, regardless of the levels of prosocial behavior and relatedness (Trentacosta, Hyde, Shaw, & Cheong, 2009).

Also inconsistent with expectations was the fact that no interactions between stress exposure and secure base scriptedness and psychosocial needs satisfaction were significant in predicting behavior problems. This may be due to the high levels of demographic or economic disadvantage and stressful life events in this sample. It is possible that adolescents in this sample have such high levels of cumulative risk that factors such as secure base scriptedness and psychosocial needs satisfaction are not able to protect youth from exhibiting behavior problems. Additionally, the lack of significant main effects of secure base script and the satisfaction of autonomy and competence may also be due to the sample being too stressed, washing out both the main and protective effects of these variables.

Study Limitations

Several methodological limitations of this study need to be considered. First, there was systematically missing data specifically for the variables of caregiver education and income.

Specifically, participants with data missing on the caregiver education and income variables had significantly higher average internalizing problems than participants without data missing on these variables. The presence of this non-random missing data consequently raised questions about the generalizability the results of this study (Tabachnick & Fidell, 2013). On the other hand, the current data may be generalizable to other at risk samples. This may be supported by the fact that calculations on the sample of 106 and the sample of 92 (removing the participants with missing data) showed the percentage of the sample with clinically significant internalizing, externalizing, and total problems did not change dramatically. The sample with the missing data eliminated had 21.7%, 18.5%, and 25% of the participants with elevations in internalizing, externalizing and total problem behaviors, respectively. The sample had 25% percent of participants with at least one clinically elevated behavior problem. This rate was still higher than the 2% of the normative U.S. adolescence sample found to score in the clinically elevated range (Achenbach & Rescorla, 2001; Grant et. al., 2004). Therefore, the smaller sample may still be considered a representative sample of an environmentally disadvantaged population of adolescents.

Despite having evidence of the generalizability of the smaller sample to other urban, environmentally disadvantaged adolescent populations, data imputation was still explored to examine how missing data may have effected the conclusions of this study. Specifically, missing values on the caregiver education variable were replaced by the mean value. However, theoretically, low income and low caregiver education may correlate to increases in internalizing behavior problems (Appleyard et al., 2005; Evans & Kim, 2007; Evans, et al., 2007; Forehand et al., 1998; Masten & Wright, 1998). Therefore, imputing the mean caregiver education for participants with elevated internalizing problems may have added error variance to the prediction of internalizing behavior problems by caregiver education. Keeping with this idea, the correlation

predicted by caregiver education was deflated when caregiver education was estimated (see Table 4). The technique of predicting missing data through regression equations was also explored; however, no independent variable predicted sufficient variance in the missing variables to be a reliable predictor variable.

Other methodological limitations exists in the study as well. The self-report nature of the psychosocial need satisfaction measure may be an imprecise way in which to measure an adolescents' psychosocial need satisfaction. It may be helpful to explore new more precise and objective measures of psychosocial need satisfaction, specifically utilizing a large and more nuanced set of scale items or a more extensive clinical interview. Additionally, the reliability and validity of the narrative assessment of secure base scriptedness is still being established for use with at-risk, urban adolescents. This variable may be related to other factors such as narrative story telling ability, familiarity with narratives, as well as experiences with their caregivers. As discussed earlier, it is also possible that focusing on the secure base scriptedness of an adolescent's primary female caregiver might have excluded important secure base support from other attachment figures such as primary male caregivers and significant others. Further research could explore other attachment and psychosocial needs satisfaction measures and multiple attachment and supportive figures in order to understand the relations between psychosocial need satisfaction, environmental stress exposure and attachment.

Implications and Future Directions

Due to the fact that exploring the relative and combined effects of stress exposure, secure base scriptedness, and psychosocial need satisfaction on behavior problems in at-risk youth is a relatively understudied area, the current study should be considered a promising early step. It appears as though despite the high levels of stress and demographic risk in this sample, relatedness

satisfaction was still a significant unique positive predictor of internalizing and total behavior problems. More research is needed to explore mental health outcomes utilizing measures other than parent-reported behavior problems. Additional research is also needed to explore other variables that may have negative relations to externalizing behavior problems.

This study supports the continued need for ongoing projects to protect young people for exposure to violence, criminality, and other community and family traumas. In addition to improving safety in disadvantaged areas, youth may benefit from the creation of family and community environments that support relatedness satisfaction strategies promoting the satisfaction of relatedness in at-risk adolescents may reduce behavior problems and promote overall well-being via fostering prosocial connections and social relationships for adolescents as well as influencing the development of autonomy and competence satisfaction. Research on family and parenting interventions targeting relationships has provided promising support for therapeutic treatments to improve a variety of different health outcomes by improving social support and relatedness (Hogan, Linden, & Najarian, 2002; Lakey & Lutz, 1996). Future researchers may also wish to further examine whether need satisfaction leads to decreases in behavior problems as well as other positive mental health outcomes and its relation to other variables such as stress exposure and secure base scriptedness. Additionally, longitudinal research could examine relation between psychosocial needs and mental health outcomes over time.

Overall, this study provided preliminary support for relatedness satisfaction as an influential variable in the development of both internalizing and total problems in this at-risk adolescent sample.

Table 1

Descriptive Statistics of Study Variables

Sample Demographic Information (n)	Mean (SD)	Percentage (n)	Range
Youth Gender (106)			
Girls		67.0% (71)	
Boys		33.0% (35)	
Youth Age (106)	14.91 (1.54)		13-18
Youth Race (99)			
African-American		75.5% (80)	
Bi-Racial		13.2% (14)	
Caucasian		2.8% (3)	
Latino		1.9% (2)	
Other		6.6% (7)	
Caregiver Participant (104)			
Biological Mother		61.7% (82)	
Biological Father		4.5% (6)	
Grandmother		1.5% (2)	
Aunt		3.0% (4)	
Uncle		0.8% (1)	
Foster Mother		0.8% (1)	
Other Family Member		6.0% (8)	
Caregiver Relationship Status (104)			
Single		65.1% (69)	
Partnered		33.0% (35)	
Yearly Income (94)			
$0-29,999		56.6% (60)	
$30,000-60,000		22.6% (24)	
$60,000-80,000		1.9 (2)	
$80,000+		7.5% (8)	
Teen Parenthood (104)			
Parent at ≤19 years		16.0% (17)	
Parent at >19 years		82.1% (87)	
Parent Education Level (92)			
No HS Diploma/GED		19.8% (21)	

HS Diploma/GED		67.0% (71)	
Youth Receptive Vocabulary (106)	89.15		54.00-123.00
Demographic Risk (91)	1.74 (0.94)		.00-4.00
Secure Base Scriptedness (106)	2.78 (0.82)		1.22-5.72
Youth Receptive Vocabulary (106)	89.15 (12.06)		54.00-123.00
Basic Need Satisfaction (106)			
Autonomy	4.79 (0.87)		2.29-6.57
Competence	5.44 (1.01)		2.50-7.00
Relatedness	5.61 (0.95)		3.00-7.00
General	5.28 (0.80)		3.00-6.86
Environmental Stress Exposure (102)			
Youth Report	5.37 (2.80)		.00-13.00
Caregiver Report	5.58 (4.13)		.00-20.00
Composite	10.89 (5.26)		1.00-25.00
Caregiver-Rated Youth Behavior Problems (106)			
Internalizing	57.59 (9.64)		33.0-78.0
Externalizing	54.00 (11.38)		34.0-80.0
Total	56.70 (11.60)		24.0-88.0

Table 2

Analysis of Potential Covariates, T-tests between Study Constraints, Youth and Caregiver Characteristics, and Key Study Variables

Grouping Variables	Internalizing	Externalizing	Total
Constraints of the study			
Recruitment Location (CMH vs. Churches)	t(104)= 1.574, p=.119	t(104)= .162, p=.872	t(104)= .425, p=.672
Visit Location (Home vs. Lab)	t(104)= 1.011, p=.314	t(104)= -.340, p=.734	t(104)= -.194, p=.848
Youth Characteristics			
Gender (Girls vs. Boys)	t(104)= -.995, p=.322	t(104)= -.998, p=.321	t(94.358)= -.710, p=.479[1]
Youth Ethnic Background (African American vs. Other Ethnicity)	t(97)= .878, p= .382	t(97)= -.286, p= .776	t(97)= .220, p= .827
Caregiver Characteristics			
Income (≤ $30,000 vs. > $30,000)	t(92)= -.649, p=.518	t(92)= -1.151, p=.253	t(92)= -.663, p=.509
Education (HS Degree/GED vs. No HS Degree/GED)	**t(90)= -3.118, p=.002**	**t(90)= 2.000, p=.048**	**t(90)= 2.366, p=.020**
Caregiver Relationship to Youth			
(Biological Mother vs. Other Relationship)	t(102)=-.996, p=.322	t(102)= -.512, p= .610	t(102)= -1.125, p= .263
(Primary Female Caregiver vs. Other Relationship)	t(102)=-.255, p=.799	t(102)= -.364, p= .716	t(102)= -.671, p= .504
Single Parenthood	t(102)= -1.038, p=.302	t(102)= -.438, p=.663	t(102)= -.151, p=.881
Teenage Parenthood	t(102)= .288, p=.774	t(102)= 1.099, p=.274	t(102)= 1.183, p=.240

Note. [1]Levene's Test < .05, Equal variances not assumed

Table 3

Analysis of Potential Covariates, Pearson Correlations between Youth Age and Demographics and Key Study Variables

Grouping Variables (n)	SBS	Internalizing	Externalizing	Total
Youth Age (106)	.115	-.059	-.032	-.062
Demographic Risk (106)	.004	**.214***	.203	**.235***
Receptive Vocabulary (106)	**.284****	-.003	.003	-.037
Income (94) (≤ $30,000, $30-60,000, $60-80,000, >$80,000)	.104	-.015	-.094	-.052

Note. SBS = Secure Base Scriptedness, *p < .05, **p < .01

Table 4

Correlation Matrix of Study Variables

Predictor (n)	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Secure Base Scriptedness (106)													
2. Autonomy Satisfaction (106)	.076												
3. Competence Satisfaction (106)	.101	.423**											
4. Relatedness Satisfaction (106)	.050	.658**	.539**										
5. General Need Satisfaction (106)	.091	.856**	.792**	.886**									
6. Youth-reported Youth Stress Exposure (102)	-.113	-.026	-.061	-.011	-.035								
7. Parent-reported Youth Stress Exposure (102)	-.053	-.004	-.073	.029	-.013	-.161							
8. Total Stress Exposure (102)	-.019	-.095	-.212*	-0.086	-0.148	-.071	.857**						
9. Parent-reported Youth Internalizing Problems (106)	-.227*	-.289**	-.289**	-.368**	-.376**	-.039	.210*	.257**					
10. Parent-reported Youth Externalizing Problems (106)	-.102	-.170†	-.224*	-.254**	-.255**	-.023	.087	.253*	.612**				
11. Parent-reported Youth Total Problems (106)	-.133	-.187†	-.193*	-.282**	-.261**	-.097	.182	.278**	.801**	.882**			
12. Receptive Vocabulary (106)	.284**	-.093	.067	.033	.004	-.110	-.092	-.060	-.003	.003	-.037		
13. Caregiver Education (92)	-.047	-.086	-.203†	-.181†	-.196†	-.001	-.043	0.013	.312*	.206*	.242*	-.277**	
14. Caregiver Education with imputed data (106)	-.042	-.073	-.195*	-0.157	-.172†	-.001	-.040	0.012	.279**	.189†	.219*	-.259**	1.00**

Note: SBS = Secure Base Scriptedness, Total Stress Exposure = Composite variable of youth and parent-reported stress exposure, †τp < .10, *p < .05, ** p < .01

Table 5

Basic Needs Satisfaction predicting parent-reported youth problems

	Internalizing		Externalizing		Total	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Predictor						
Step 1	.098**		.043*		.059*	
Caregiver Education		.312**		.206*		.242*
Step 2	.073†		.036		.054	
Autonomy Satisfaction		-.014		.034		-.013
Competence Satisfaction		-.071		-.119		.003
Relatedness Satisfaction		-.222†		-.125		-.229
Step 3	.000		.006		.002	
General Needs Satisfaction		.272		-2.469		1.523

Note. β = standardized regression coefficient from the corresponding regression step, indicated above each predictor.
†τp < .10, *p < .05, ** p < .01

Table 6

Regressions predicting parent-reported youth problems

	Internalizing		Externalizing		Total	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Predictor						
Step 1	.107**		.050*		.068*	
Caregiver Education		.327**		.224*		.260*
Step 2	.064*		.037†		.051*	
Environmental Stress Exposure		.254*		.193†		.226*
Step 3	.018		.001		.007	
SBS		-.135		-.036		-.084
Step 4	.022		.008		.017	
Autonomy Satisfaction		-.152		-.089		-.134

Note. β = standardized regression coefficient from the corresponding regression step, indicated above each predictor.
†τp < .10, *p < .05, ** p < .01

Table 7

Regressions predicting parent-reported youth problems

	Internalizing		Externalizing		Total	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Predictors						
Step 1	.107**		.050**		.068*	
Caregiver Education		.327**		.224*		.260*
Step 2	.064*		.037†		.051*	
Environmental Stress Exposure		.254*		.193†		.226*
Step 3	.018		.001		.007	
SBS		-.135		-.036		-.084
Step 4	.014		.014		.003	
Competence Satisfaction		-.156		-.123		-.061

Note. β = standardized regression coefficient from the corresponding regression step, indicated above each predictor.
†τp < .10, *p < .05, ** p < .01

Table 8

Regressions predicting parent-reported youth problems

	Internalizing		Externalizing		Total	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Predictors						
Step 1	.107**		.050*		.068*	
Caregiver Education		.327**		.224*		.260*
Step 2	.064*		.037†		.051*	
Environmental Stress Exposure		.254*		.193†		.226*
Step 3	.018		.001		.007	
SBS		-.135		-.036		-.084
Step 4	.061*		.019		.044*	
Relatedness Satisfaction		-.253*		-.142		-.214*

Note. β = standardized regression coefficient from the corresponding regression step, indicated above each predictor.
†τp < .10, *p < .05, ** p < .01

APPENDIX A

Things I have Seen and Heard Questionnaire

Using this scale (**GREEN**), please indicate how many times you have experienced the event described.

0	**1**	**2**	**3**	**4**
0 times	1 time	2 times	3 times	Many times

1. I have heard guns being shot	0 1 2 3 4
2. I have seen someone arrested	0 1 2 3 4
3. I feel safe when I am at home	0 1 2 3 4
4. I have seen drug deals	0 1 2 3 4
5. I have seen somebody being beat up	0 1 2 3 4
6. I have been beat up	0 1 2 3 4
7. I have seen somebody get stabbed	0 1 2 3 4
8. I have seen somebody shot	0 1 2 3 4
9. I have seen a gun in my home	0 1 2 3 4
10. I have seen drugs in my home	0 1 2 3 4
11. I feel safe when I'm at school	0 1 2 3 4
12. Somebody threatened to kill me	0 1 2 3 4
13. I have seen a dead body outside	0 1 2 3 4
14. Somebody threatened to shoot me	0 1 2 3 4
15. Somebody threatened to stab me	0 1 2 3 4
16. Grown ups are nice to me	0 1 2 3 4
17. Grown ups at my home hit each other	0 1 2 3 4
18. Grown ups in my home threaten to stab or shoot each other	0 1 2 3 4
19. Grown ups in my home yell at each other	0 1 2 3 4
20. I have seen somebody in my home get shot or stabbed.	0 1 2 3 4

APPENDIX B

Stressful Life Events Checklist

To be completed by *caregivers* to reflect their child's experiences. Check the first box if the child has ever experienced that event. Check both boxes if the child has experienced the even in the past year.

Which of the following events has your child experienced in their past?	**Ever?**	**In the past year?**
1. Death of a family or household member		
2. Parent's (LTP's) divorced (separated)		
3. Family or household member has had serious behavior or psychiatric problem		
4. Family or household member has had problem with drugs or alcohol		
5. Family or household member has had serious illness or accident requiring hospitalization		
6. Parent has spent time in jail		
7. Family has come to the attention of Protective Services		
8. Family, household member, or friend has been victim of serious crime		
9. Angry violence between member of household (i.e. parents, parent and sibling, parent and child)		
10. Child has lived at home of relative or friend because of parent problems		
11. Child has been in foster care		
12. Child has had some serious illness or accident requiring hospitalization		
13. Child has witnessed serious violence in the home		
14. Child has been victim of serious crime		
15. Child has witnessed serious crime		
16. Child has moved to a new home		
17. Child has been homeless		
18. Child has had legal trouble		
19. Child has used alcohol or drugs		
20. Child has been evicted from home		

21. Child has witnessed violent crime in neighborhood		
22. Child has witnessed someone badly hurt		

APPENDIX C

Secure Based Script Instructions

START RECORDER and CONTINUE RECORDING THROUGHOUT SBS!

For this part of the study, we are interested in seeing how different people tell stories.

In front of you is what we call a word prompt outline. [hand participant "Trip to the beach**] This particular outline is about "A Trip to the Beach." If you read down the columns and from left to right, you can see that the words follow a basic storyline. [**point slowly as you say it**]**

What we will be asking you to do during this study is to tell stories using outlines that are set up just like this one. The outline will remain in front of you the entire time that you are telling your story. The outline is just a guide, so you do not have to use all the words if you don't want to, you can change the order around, or you can change the words themselves. You should try to tell your story so it comes out to be about a page in length if you were going to write it down, so you should put in as much information and as many details as you can. The first story we'll do is just for practice. What I'd like you to do, is take a minute or two to read over this outline. When you're ready, go ahead and tell your story. OK? Any questions?

ADMINISTER TRIP TO THE BEACH

Now we'll begin with the other outlines. There are 3 outlines total. We'll use the same format that we just used for the practice story. I'd like you to imagine that the people involved in the stories are you and your mom (If no mother, SAY name of primary female caregiver**). You should tell them as if these situations were really happening to you and your mom. So you should tell them in the first person. I'll remind you of that before you begin each story. Let me know when you're ready to tell your story.**

[Introducing remaining 2 story outlines]

This is a story about (read title)**. For this story, you should imagine that this situation is happening to you, and "Mom" in this story refers to your mom. You should tell this story in the first person. Take a minute or two to look over the outline. Let me know when you're ready to tell your story.**

ADMINISTRATION NOTES

****For first few outlines, remind them of the following:**

- ✓ The outline will remain in front of you the entire time.
- ✓ The outline is only a guide, so you do not have to use all the words if you don't want to, and you can elaborate as much as you'd like.
- ✓ You should try to tell your story so it comes out to be about a page in length (double-spaced) if you were going to write it down.

Order of administration

Boys

Even IDS:

1. Trip to the Beach
2. The Haircut
3. The Party
4. The Basketball Game

Odd IDS:

1. Trip to the Beach
2. The Basketball Game
3. The Party
4. The Haircut

Girls

Even IDS:

1. Trip to the Beach
2. Acne
3. The Party
4. The Basketball Game

Odd IDs:

1. Trip to the Beach
2. The Basketball Game
3. The Party
4. Acne

A Trip to the Beach

Amber	**blankets**	**hot**
Joan	**lotion**	**ice cream**
drive	**chat**	**late**
beach	**smile**	**home**

Acne

Sunday	**Mom**	**laugh**
mirror	**talk**	**bathroom**
acne	**herself**	**experiment**
embarrassed	**acne**	**make-up**

The Haircut

weekend	**Mom**	**clippers**
barber	**talk**	**experiment**
bad haircut	**we laugh**	**fix**
embarrassed	**bathroom**	**hug**

The Party

Friday night	**sulk**	**Mom**
party	**couch**	**movie**
uninvited	**Mom**	**popcorn**
miserable	**talk**	**smile**

Basketball Game

morning	**tired**	**upset**
big game	**easy shot**	**mom**
nervous	**I miss**	**talk**
play	**lose**	**practice**

APPENDIX D

Basic Need Satisfaction in Life

Using this rating scale (**YELLOW)**, please think about how each item relates to your life and indicate how true it is for you. This rating scale includes 1, which means that the item is not at all true for you, 4 meaning somewhat true and 7 meaning the item is very true of you.

1	**2**	**3**	**4**	**5**	**6**	**7**
Not at all true			Somewhat true			Very true

1. I feel like I am free to decide for myself how to live my life.	1 2 3 4 5 6 7
2. I really like the people I interact with	1 2 3 4 5 6 7
3. Often, I do not feel very competent.	1 2 3 4 5 6 7
4. I feel pressured in my life.	1 2 3 4 5 6 7
5. People I know tell me I am good at what I do.	1 2 3 4 5 6 7
6. I get along with people I come into contact with.	1 2 3 4 5 6 7
7. I pretty much keep to myself and don't have a lot of social contacts.	1 2 3 4 5 6 7
8. I generally feel free to express my ideas and opinions.	1 2 3 4 5 6 7
9. I consider the people I regularly interact with to be my friends.	1 2 3 4 5 6 7
10. I have been able to learn interesting new skills recently.	1 2 3 4 5 6 7
11. In my daily life, I frequently have to do what I am told.	1 2 3 4 5 6 7
12. People in my life care about me.	1 2 3 4 5 6 7
13. Most days I feel a sense of accomplishment from what I do.	1 2 3 4 5 6 7
14. People I interact with on a daily basis tend to take my feelings into consideration.	1 2 3 4 5 6 7
15. In my life I do not get much of a chance to show how capable I am.	1 2 3 4 5 6 7
16. There are not many people that I am close to.	1 2 3 4 5 6 7
17. I feel like I can pretty much be myself in my daily situation.	1 2 3 4 5 6 7
18. The people I interact with regularly do not seem to like me much.	1 2 3 4 5 6 7
19. I often do not feel very capable.	1 2 3 4 5 6 7
20. There is not much opportunity for me to decide for myself how to do things in my daily life.	1 2 3 4 5 6 7
21. People are generally pretty friendly towards me.	1 2 3 4 5 6 7

APPENDIX E

Child Behavior Checklist (CBCL)

Below is a list of items that describe children and youths. (Pass the **ORANGE** rating scale) For each item that describes your child now or within the past 6 months, please circle the 2 if the item is very true or often true of your child. Circle the 1 if the item is somewhat or sometimes true of your child. If the item is not true of your child, circle the 0. Please answer all items as well as you can, even if some do not seem to apply to your child

0	**1**	**2**
Not True	Somewhat/ Sometimes true	Very/Often True

1	Acts too young for his/her age.	0	1	2
2	Drinks alcohol without parents' approval.	0	1	2
3	Argues a lot.	0	1	2
4	Fails to finish things he/she starts.	0	1	2
5	There is very little he/she enjoys.	0	1	2
6	Bowel movements outside toilet.	0	1	2
7	Bragging, boasting.	0	1	2
8	Can't concentrate, can't pay attention for long.	0	1	2
9	Can't get his/her mind off certain thoughts; obsessions.	0	1	2
10	Can't sit still, restless, or hyperactive.	0	1	2
11	Clings to adults or too dependent.	0	1	2
12	Complains of loneliness.	0	1	2
13	Confused or seems to be in fog.	0	1	2
14	Cries a lot.	0	1	2
15	Cruel to animals.	0	1	2
16	Cruelty, bullying, or meanness to others.	0	1	2
17	Daydreams or gets lost in his/her thoughts,	0	1	2
18	Deliberately harms self or attempts suicide.	0	1	2
19	Demands a lot of attention.	0	1	2
20	Destroys his/her own things.	0	1	2
21	Destroys things belonging to his/her family or others.	0	1	2

22	Disobedient at home.	0	1	2
23	Disobedient at school.	0	1	2
24	Doesn't eat well.	0	1	2
25	Doesn't get along with other kids.	0	1	2
26	Doesn't seem to feel guilty after misbehaving.	0	1	2
27	Easily jealous.	0	1	2
28	Breaks rules at home, school, or elsewhere.	0	1	2
29	Fears certain animals, situations, or places, other than school.	0	1	2
30	Fears going to school.	0	1	2
31	Fears he/she might think or do something bad.	0	1	2
32	Feels he/she wants to be perfect.	0	1	2
33	Feels or complains that no one loves him/her.	0	1	2
34	Feels others are out to get him/her.	0	1	2
35	Feels worthless or inferior.	0	1	2
36	Gets hurt a lot, accident-prone.	0	1	2
37	Gets in many fights.	0	1	2
38	Gets teased a lot.	0	1	2
39	Hangs around others who get in trouble.	0	1	2
40	Hears sounds or voices that aren't there.	0	1	2
41	Impulsive or acts without thinking.	0	1	2
42	Would rather be alone than with others.	0	1	2
43	Lying or cheating.	0	1	2
44	Bites fingernails.	0	1	2
45	Nervous, high-strung, or tense.	0	1	2
46	Nervous movements or twitching.	0	1	2
47	Nightmares.	0	1	2
48	Not liked by other kids,	0	1	2
49	Constipated, doesn't move bowels.	0	1	2
50	Too fearful or anxious.	0	1	2
51	Feels dizzy or lightheaded.	0	1	2

52	Feels too guilty.	0	1	2
53	Overeating.	0	1	2
54	Overtired without good reason.	0	1	2
55	Overweight.	0	1	2
56	Physical problems (without known medical cause):	0	1	2
	a. aches or pains	0	1	2
	b. headaches	0	1	2
	c. Nausea, feels sick	0	1	2
	d. Problems with eyes (Not if corrected by glasses)	0	1	2
	e. rashes or other skin problems	0	1	2
	f. Stomachaches	0	1	2
	g. Vomiting, throwing up	0	1	2
	h. Other	0	1	2
57	Physically attacks people.	0	1	2
58	Picks nose, skin, or other parts of body.	0	1	2
59	Plays with own sex parts in public.	0	1	2
60	Plays with own sex parts too much.	0	1	2
61	Poor school work.	0	1	2
62	Poorly coordinated or clumsy.	0	1	2
63	Prefers being with older kids.	0	1	2
64	Prefers being with younger kids.	0	1	2
65	Refuses to talk.	0	1	2
66	Repeats certain acts over and over.	0	1	2
67	Runs away from home.	0	1	2
68	Screams a lot.	0	1	2
69	Secretive, keeps things to self.	0	1	2
70	Sees things that aren’t there.	0	1	2
71	Self-conscious or easily embarrassed.	0	1	2
72	Sets fires.	0	1	2
73	Sexual problems.	0	1	2

74	Showing off or clowning.	0	1	2
75	Too shy or timid.	0	1	2
76	Sleeps less than most kids.	0	1	2
77	Sleeps more than most kids during day and/or night.	0	1	2
78	Inattentive or easily distracted.	0	1	2
79	Speech problem.	0	1	2
80	Stares blankly.	0	1	2
81	Steals at home.	0	1	2
82	Steals outside the home.	0	1	2
83	Stores up too many things he/she doesn't need.	0	1	2
84	Strange behavior.	0	1	2
85	Strange ideas.	0	1	2
86	Stubborn, sullen, or irritable.	0	1	2
87	Sudden changes in mood or feelings.	0	1	2
88	Sulks a lot.	0	1	2
89	Suspicious.	0	1	2
90	Swearing or obscene language.	0	1	2
91	Talks about killing self.	0	1	2
92	Talks or walks in sleep.	0	1	2
93	Talks too much.	0	1	2
94	Teases a lot.	0	1	2
95	Temper tantrums or hot temper.	0	1	2
96	Thinks about sex too much.	0	1	2
97	Threatens people.	0	1	2
98	Thumb-sucking.	0	1	2
99	Smokes, chews, or sniffs tobacco.	0	1	2
100	Trouble sleeping.	0	1	2
101	Truancy, skips school.	0	1	2
102	Underactive, slow moving, or lacks energy.	0	1	2
103	Unhappy, sad, or depressed.	0	1	2

104	Unusually loud.	0	1	2
105	Uses drugs for nonmedical purposes (don’t include alcohol or tobacco)	0	1	2
106	Vandalism.	0	1	2
107	Wets self during day.	0	1	2
108	Wets the bed.	0	1	2
109	Whining.	0	1	2
110	Wishes to be opposite sex.	0	1	2
111	Withdrawn, doesn’t get involved with others.	0	1	2
112	Worries.	0	1	2
113	Other problems.	0	1	2

APPENDIX F

Narrative Assessment of Adolescent Attachment Representations:

The Scoring of Secure Base Script Content

Harriet Salatas Waters

State University of New York at Stony Brook

7. These are the very best examples of secure base content in the narrative. There is a rich interplay between the two principle characters. There is a great deal of attention to the psychological state of the other, and the "secure base" is very responsive to that psychological state. Important to the secure base script is the resolution of the problem/distress with a return to normalcy.

6. These narratives fall short of the richness of secure base content that is evidenced in stories ranked "7". Nonetheless, these stories to contain a reasonable amount of secure base content.

5. These narratives have a medium amount of secure base content, but not as much elaboration as those that are ranked "7" or "6".

4. These narratives have some secure base content, but not very much. Thus, they are weak on secure base content, but there is no odd content contained in the story either.

3. These narratives seem mostly event-related stories, in which what is happening is presented, with very little commentary on the give and take between with the characters, or on the psychological content of the story.

2. These are event-related as well, but so brief as to seem disjointed. Also included in this category are narratives that contain some odd content that is inconsistent with a secure base script. The intrusion of this content however is not as consistent or pervasive as the narratives that are scored "1."

1. These narratives are theme-based variations that come across as quite peculiar interpretations of the implied story line. Not only is the secure base script not recognized, but a quite different script is in its place. The narratives can be quite detailed, with content generated consistent with the atypical interpretation of the story line. These are not that common.

Narratives that have significant "unusual" content, but fall short of a complete theme-based variation also receive a "1."

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ABSTACT

PSYCHOLOGICAL SYMPTOLOGY OF AT-RISK URBAN ADOLESCENTS: THE RELATIVE CONTRIBUTIONS OF STRESS EXPOSURE, SECURE BASE SCRIPTEDNESS, AND PSYCHOSOCIAL NEEDS SATISFACTION

by

Kelsey J. Sala-Hamrick

May 2015

Advisor: Dr. Douglas Barnett

Major: Psychology (Clinical)

Degree: Master of Arts

The adolescent period of development is associated with increases in internalizing, externalizing, and other problem behaviors which are thought to be exacerbated by cumulative risk factors associated with environmental disadvantage. Previous research has demonstrated the associations between both secure attachment and psychosocial needs satisfaction with decreases in behavior problems; however, few studies have examined the relative effects of environmental stress exposure, attachment security and psychosocial needs satisfaction on adolescent behavioral problems. Therefore, this study recruited 106 environmentally at-risk, socioeconomically disadvantaged sample of urban adolescents and their caregivers from Detroit, MI in order to: (1) describe the levels of environmental disadvantage and stress exposure in this sample, (2) examine relations between stress exposure, secure base scriptedness, and psychosocial needs satisfaction, and adolescent behavior problems, and (3) explore the relative and unique contributions of stress, secure base scriptedness, and psychosocial needs satisfaction on behavior problems in this at-risk adolescent sample and how potential interactions among these variables contribute to resiliency in this at-risk population. The sample reported high

levels of demographic risks, exposure to violence and other stressful events, and high levels of behavior problems. Analyses revealed that caregiver education less than high school and stressful events both contributed significant unique variance to the prediction of behavior problems. Although significantly negatively correlated with behavior problems, neither basic psychosocial needs satisfaction nor Secure Base Scriptedness contributed additional unique variance to the prediction of behavior problems once parent education and stress exposure were included in the equation. Secure base scriptedness nor basic needs satisfaction also did not interact with parent education or stress exposure to buffer the effects of the risk variables on behavior problems. Results suggest that the expected positive contribution of these protective factors were not enough to overcome the apparent contributions of stress exposure.

AUTOBIOGRAPHICAL STATEMENT

Kelsey Sala-Hamrick received a Bachelor of Science with High Distinction and High Honors in 2013 from the University of Michigan in Ann Arbor, MI where she majored in Psychology and Biology. She will graduate with a Master of Arts in Clinical Psychology from Wayne State University in Detroit, MI in May 2015. She is currently working towards a Doctor of Philosophy in Clinical Psychology at Wayne State. Her research interests involve working with children, adolescents, young adults, and their families, specifically at-risk and minority groups who have experienced community and household trauma. She is also interested in genetic and biological interactions and statistics. Kelsey enjoys nature, novels, black coffee, and spending time with her family and friends.