

**AN ECOLOGICAL EXPLORATION OF BLACK ADOLESCENT  
PSYCHOPATHOLOGY: DEPRESSION AND SUICIDAL IDEATION**

**by**

**Christopher Ross Merchant**

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Doctoral Committee:

Professor Cheryl A. King, Co-Chair  
Professor Albert C. Cain, Co-Chair  
Associate Professor Sean Joe  
Assistant Professor Kai Schnabel Cortina

This work is dedicated to my family. May I continue to be motivated by the desire to  
make you all proud.

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## **ABSTRACT**

### **AN ECOLOGICAL EXPLORATION OF BLACK ADOLESCENT PSYCHOPATHOLOGY: DEPRESSION AND SUICIDAL IDEATION**

by

**Christopher Ross Merchant**

**Co-chairs: Cheryl A. King and Albert C. Cain**

Depression and suicidal thinking are significant issues among Black adolescents in the United States. The Surgeon General (1999) spoke of the public health problem of Black American suicide, and research has shown that as many as 9% of Black adolescents meet criteria for Major Depressive Episodes and 13% report seriously considering suicide (Roberts, Roberts, & Chen, 1997; Eaton et al., 2008). Numerous psychosocial functioning variables have been implicated in research as risk factors for the development of depression and suicidal thinking. Several theories have been developed to outline societal/interpersonal influences on suicide specifically (Durkheim, 1897; Joiner 2005).

Despite, however, the amount of research on suicidal ideation and depression among adolescents, comparatively little attention has been paid to factors that relate to these problems specifically among Black youth. The goal of this theoretically-driven study was to examine the social/interpersonal variables that predict depression and suicidal ideation among Black youth. This study aimed to supplement current research in this area by determining how different social/interpersonal variables (perceived social

support, interpersonal orientation, perceived burdensomeness, thwarted belongingness, social integration, and peer victimization) produce unique risk for depression and suicidal thinking.

Within this study sample of 69 Black adolescents, it was found that perceived burdensomeness—the perception of one’s self as a burden on loved ones—predicted suicidal ideation. Perceived burdensomeness and perceived family support were both predictors of depressive symptoms; burdensomeness a negative predictor and family support a positive predictor. These data contribute significantly to ecological understandings of Black adolescent suicidality and depression in that they offer insight into the cognitive patterns that are indicators of psychopathological thoughts and behaviors.



## CHAPTER 1

### INTRODUCTION

#### **Risk in Adolescence**

The overarching aim of this study is to examine distal and proximal factors related to the development of depression and suicidal ideation among Black adolescents. In essence, the goal is to define a set of circumstances in which Black adolescents are “at risk” for developing these problems. Throughout this exposition, the author will use the terms “at risk,” “risk factor,” and “risk behaviors,” to indicate a particular context, and/or set of behaviors. However, adequate discussion of risk in adolescence first necessitates a definition of the terms. Dryfoos (1991) presents a definition of “at risk” rooted in a developmental context. She uses the term, “‘adolescents at risk’ to describe a segment of the population that under current conditions has a low probability of growing into responsible adulthood...” (p.630). Thus she argues that the concept of risk is related to the probability of successfully navigating adolescence and emerging into adulthood with a full set of developmentally appropriate skills and knowledge. This idea is presented with particular emphasis on the phrase, “under current conditions.” This emphasis is made to present the idea that an examination of what places an adolescent at risk must cast a broad net, in as much as an adolescent’s conditions covers a considerable amount of factors at multiple levels. Thus risk factors, to be understood adequately, must almost necessarily be studied within an ecological context.

## **An Ecological Understanding of Development**

Bronfenbrenner's (1979) ecological systems theory proposed 5 increasingly distal spheres of interaction that influence human development. These spheres of interactions are the relationships that define an individual's environment. From the closest to the most distal relationship, these are: microsystems, mesosystems, exosystems, macrosystems, and chronosystems.

### *Microsystems*

The microsystem is the group and pattern of relationships that an individual experiences in a face-to-face manner. These relationships are the most immediately present and reciprocal, and affect the individual's level and type of interaction with his or her immediate environment. Relationships in an individual's microsystem would be family, immediate peer group, school, and workplace. Considerable research has involved the significance of the microsystem on development (e.g. family support, peer relationships, etc.) and the ways that (mal)functioning within this system affect adolescent outcomes (Casey & Beadnell, 2010; Fleming, Catalano, Haggerty, & Abbott, 2010; C. A. King, Hovey, Brand, & Ghaziuddin, 1997; C. A. King & Merchant, 2008).

### *Mesosystems*

The mesosystem is the process and interactions between different microsystems. This would include, for example, a parent attending a parent-teacher conference. Presumably because the primary microsystems of a developing adolescent are the family and the school, most research into mesosystems involves studying how different levels of contact between parents and the school affect adolescent outcomes (Anguiano, 2004; Ehly, Hartman, Robbins, & Villegas-Gutiérrez, 1997; Safer, Heaton, & Parker, 1981);

however these interactions could be between any groups/relationships in the microsystem (e.g. church and peer group interactions, parental involvement in extracurricular organizations).

### *Exosystems*

The exosystem is comprised of the interactions between two or more systems, at least one of which does not contain the developing individual. These interactions affect the development of the individual, usually through alterations of the family/peer environment that contains the individual. Examples of an exosystem might be a parent's interaction with his or her workplace. Research has shown that a parent's appraisal of his/her interactions at work will affect the child's sense of well-being (Perry-Jenkins & Gillman, 2000). Additionally, neighborhood/community contexts may comprise an exosystem by affecting the peer group with whom an adolescent interacts.

### *Macrosystems*

Macrosystems are the larger pattern of micro-, meso-, and exosystems that are characteristic of a given culture or subculture. Thus for any given individual, their pattern of friends (microsystem), how their friends interact with their family (mesosystem), and how their community dictates friendships (exosystem) are affected by that individual's cultural context (macrosystem). Macrosystem research focuses largely on an individual's cultural identity (Hand, 2006; Schwartz, Montgomery, & Briones, 2006) and how this impacts perceptions of mental illness (Bhugra, 2005), and mental health practice (Mahalingam & Jackson, 2007).

### *Chronosystems*

The chronosystem is the system that encompasses changes in the individual and/or the individual's other systems over time. This would acknowledge not only the adolescent's longitudinal development, but also the ways that the systems that contain that adolescent evolve (Bronfenbrenner, 1986). The meaning and influence of culture in the United States would, for example, offer opportunity to examine a chronosystem. Black Americans who were teenagers in the 1970s, for example, had very different micro-, meso-, exo-, and macrosystems than Black teenagers currently.

### **Ecological Understanding of Depression and Suicide Risk**

In recent years, there has been an increase in the research dedicated to using social theories to explain suicidality among Black youth (Lyon et al., 2000; Perkins & Hartless, 2002; Watt & Sharp, 2002). Postmodern examinations of the suicide rate among Black adolescents and young adults has focused on the decay of heretofore prominent institutions of support within the Black community (e.g. the family, churches, the community), citing their absence as a key contributor to the problem of suicide (Willis, Coombs, Cockerham, & Frison, 2002). A similar approach will be taken by the author in exploring the problem of depression as well as suicide; focusing on how different levels of functioning at each of the ecological levels contribute to risk for depression and/or suicidal ideation.

## CHAPTER 2

### THE PROBLEM OF ADOLESCENT DEPRESSION

Depression is among the most prevalent mental disorders among adolescents. According to Lewinsohn and colleagues (1993), Major Depressive Disorder (MDD) occurred in approximately 18% of high school students, with 20% receiving a diagnosis of *any* Unipolar Depression. This was found within a large regionally representative sample of high school students participating in a year long, longitudinal study. In this same study, Lewinsohn and colleagues also reported the lifetime prevalence of MDD had increased to 24% by the following year, with a point prevalence rate of 3.12%; higher than any anxiety (1.33%), disruptive behavior (.46%), or substance use (2.65%) disorder. Additionally, epidemiologic cross-sectional studies of depressive symptoms have reported that between 20 and 50% of adolescents present with significant but sub-clinical levels of depression (Kessler, Avenevoli, & Merikangas, 2001) and that adolescence is generally the time when depressive symptoms begin to emerge (Hankin, 2006).

Despite the amount of epidemiological data on adolescent depression, there are extremely limited data on depression among Black adolescents. However, in a large scale study of 5,423 adolescents (ages 10-17 years) in the Southwest United States, Roberts, Roberts, and Chen (1997) found a prevalence rate of Major Depressive Episodes (MDE) among Black youth that was comparable to the Lewinsohn et al (1993) finding (3.9%). Interestingly, these were the rates for MDE “with impairment”—the author’s reported

data for adolescents with MDE and for those with MDE *and* significant impairment in home or school functioning. According to this report, African American/Black youth reported significantly higher rates of MDE without impairment than their White counterparts (9.0% vs. 6.3%). These findings indicate that, although it is less well studied among Black adolescents, the problem is at least as prevalent.

The findings regarding prevalence of depression among Black adolescents as compared to White youth are hardly consistent, however. Roberts and colleagues (1997) found that different definitions of depression (i.e. with or without impairment) yielded different prevalence rates. Furthermore, other authors (e.g., Cole, Martin, Peeke, Henderson, & Harwell, 1998) found no differences in depressive symptoms levels between Blacks and Whites in adolescence. Studies of depression among Black youth are further confounded by differences in presentation of depressive symptoms between Blacks and White adolescents. Fuller (1992) noted that depressed Black youth also tend to present with disruptive and maladaptive behaviors (i.e. conduct and attention deficit disorders), and other studies have noted the greater prevalence of externalizing symptoms in Black adolescents relative to White adolescents (McLaughlin, Hilt, & Nolen-Hoeksema, 2007).

## **Risk factors**

### *Risk at the Level of the Individual*

Aside from the differences noted above, research has also found that girls are more likely to suffer from depression than boys (Lewinsohn et al., 1993; Roberts, Roberts et al., 1997) and this difference usually begins to show itself around the ages of 13-14; as the child is entering adolescence (Alloy, Abramson, Romer, & Walker, 2007). Age also

is a significant risk factor for depression within adolescence; older adolescents are more likely to report MDE than younger adolescents (Lewinsohn et al., 1993; Petersen et al., 1993).

In addition to demographic factors, several psychological functioning variables have proven to be consistently related to depression in adolescence. Negative cognitive schemas, hopelessness, and negative attributional style have been shown to predict depression among adolescents (Beck, Leahy, & Dowd, 2002; Hankin et al., 2009; Siegel & Griffin, 1984; Smith, Calam, & Bolton, 2009). Other known individual-level risk factors for depression include: stressful life-events (Morris, Ciesla, & Garber, 2010); negative coping strategies (Sawyer, Pfeiffer, & Spence, 2009); and self-esteem (Kaslow, Rehm, & Siegel, 1984). Additionally, Hops, Lewinsohn, Andrews, and Roberts (1990) noted that many correlates of depression in adulthood (e.g. stressful life events, increased self-consciousness, impaired coping skills, and other psychopathology) were predictors of depression in adolescence.

### *Microsystem Risk*

Moving to the first ecological systems level outside the individual, we come to a discussion of the microsystem. Because of the considerable amount of research devoted to interactions at this level, this section will focus on the two primary arenas within this system for an adolescent: the family system and the peer network.

### Family Interactions

As noted in a recent review of adolescent depression literature (Garber, 2006), family relationship variables have consistently shown to be strong predictors of depression in adolescent samples. In a prospective, longitudinal, community-based study

of 420 adolescents, Sheeber and colleagues (1997) found that family cohesion and support were predictors of lower depression scores after one year. Conversely, the absence of family support and the presence of family dysfunction predicted higher depression scores after one year, showing that family support can function as both a risk factor when absent and protective factor when present. In another large-scale, prospective study of high school students Hops et al. (1990) found that higher family support and cohesion were associated with decreased depression scores at a one year follow-up. Similar findings have been noted in other community-based studies (Avison & McAlpine, 1992; Field, Diego, & Sanders, 2001; Garrison, Jackson, Marsteller, & McKeown, 1990). Additionally, several studies have noted that gender moderates the association between family support and depression, with the association being greater and/or only existent for girls (Kerr, Preuss, & King, 2006; Slavin & Rainer, 1990).

Similar findings have been recorded among clinical samples of adolescents. Within an inpatient sample of adolescents between the ages of 7 and 17, Armsden et al. (1990) found that adolescents who were depressed at the time of assessment reported significantly lower parent attachment than non-depressed youth, but that parent attachment was still negatively correlated with depression scores. Research has also shown that family support is a unique predictor of depression scores among inpatient adolescents, even after controlling for anxiety and conduct disorder symptoms (Barrera & Garrison-Jones, 1992). The summation of these studies is that family support is a significant factor in the development or mitigation of depressive symptoms for adolescents.



As the presence of adaptive family functioning and support is a noted predictor of decreased depression, rejection by the family (in the forms of abuse and/or neglect) is also associated with depression in adolescence. Considerable research has linked sexual abuse (Fletcher, 2009) and non-sexual abuse (J. Brown, Cohen, Johnson, & Smailes, 1999; Westenberg & Garnefski, 2003), as well as emotional neglect (Harkness, Lumley, Abela, & Hankin, 2008) with depression. A 2-year, longitudinal study of adolescents between the ages of 11 and 18 showed that both non-sexual maltreatment and sexual victimization were significant predictors of depressive symptoms at follow-up (Turner, Finkelhor, & Ormrod, 2010), further underscoring the importance of negative family experiences as predictors of depression.

#### Black Adolescents and Family Support

Limited prospective research on predictors of depression within minority populations exists; however, a recent longitudinal study of a minority sample consisting of Black, Latino, and Asian American low-income adolescents found that, for adolescents with low-perceived family support, increases in family support were associated with decreased depression scores at a 2-year follow up (Way & Robinson, 2003). Another longitudinal study of Black adolescents found that family support was a significant predictor of lower depression after 6 months (Zimmerman, Ramirez-Valles, Zapert, & Maton, 2000). Using data from the National Longitudinal Study of Adolescent Health (Add Health), Wight et al. (2005) found that Black adolescents living in households without both biological parents experienced more depressive symptoms than other adolescents. Other research has supported the finding that family support is negatively related to depression among Black adolescents (Bean, Barber, & Crane, 2006). Studies

among college-aged samples of Black Americans have shown that family support and cohesion are associated with lower levels of depressive symptoms (Harris & Molock, 2000). Additionally, research has demonstrated that for Black, but not White, college students, perceived family support is related to lower depressive symptoms (Jung & Khalsa, 1989). Research has also supported the significance of family support as a moderator between stress and depression among Black young adults (Kimbrough, Molock, & Walton, 1996), and has shown that the availability of family support diminishes the relationship between exposure to community violence and depressive symptoms among Black, inner-city youth (Overstreet, Dempsey, Graham, & Moely, 1999). Thus the family is noted as a key area of influence in a Black adolescent's psychological adjustment.

#### Friend/Peer Support

Like family support, friend support has received a great deal of empirical attention as a factor in the presence of depression among adolescents. For example, a prospective research study demonstrated that both friend support and network size are negatively correlated with current levels of depressive symptoms, and friend support is negatively associated with future levels of depression (Hops et al., 1990). Similarly, Slavin and Rainer (1990), in a longitudinal study of 333 adolescents found that friend support was a significant predictor of decreased depression over time for girls but not boys. This finding is similar to previously reported findings regarding family support and depression; girls tend to respond more to interpersonal upsets than boys. Indeed research has supported the general idea that interpersonal relationships are more significant for girls than for boys in terms of predicting adaptive psychological functioning

(Cyranowski, Frank, Young, & Shear, 2003). Cross sectional studies have also found main effects of peer support variables and interaction effects between peer support and gender. Field and colleagues (2001) found that high school seniors above a clinical cutoff score on a prominent depression measure had fewer friends, less optimal peer relationships, and were less popular. Given these findings, peer relationships appear to warrant examination when assessing risk for depression.

Few studies have examined the relationship between peer support and depression within clinical samples. However, Kerr, Preuss and King (2006) found an interaction effect for peer support and gender; for boys, but not girls, peer support was associated with higher levels of depression. Barrera and Garrison-Jones (1992) reported similar findings from a cross-sectional study of adolescent inpatients (ages 12-17 years old). They found that peer support was negatively associated with depressive symptoms, but only for adolescents who reported low parental support.

Other studies have found a similarly complex relationship between peer support and depression. For example, Vaughan, Foshee, and Ennett (2010) found that peer support did predict prospective decreases in levels of depression, but this effect disappeared after controlling for maternal support. Another longitudinal study of community adolescents reported similar findings. Higher anticipated peer support was found to be predictive of decreased depression over time, but only for adolescents with high parental support (adolescents with low parental support and high anticipated peer support report greater depressive symptoms). Furthermore, low anticipated peer support was associated with greater risk for depression among older adolescents, but not among younger (Young, Berenson, Cohen, & Garcia, 2005). Other studies have also found that

protective effects of peer support on depressive symptoms are negligible during early adolescence but stronger in middle adolescence (Makri-Botsari, 2005).

While the presence of adaptive support from peers has yielded mixed findings in the literature vis-à-vis depression levels, dysfunctional peer relationships (i.e. absent peer circles, victimization by peers, and victimization of peers) are consistent predictors of depression in adolescents. For example, in a longitudinal study of 253 adolescents; emotional dependency on peers and social withdrawal predicted depression while controlling for baseline levels of depression (Allen et al., 2006). Similarly, alienation from peers contributed significantly to variance in depression scores in a cross-sectional study of adolescents between the ages of 16 and 19 (Smith et al., 2009).

More so than simple withdrawal, being the victim of or engaging in bullying represent active rejection by and rejection of, respectively, a peer group. Both victimization and bullying have been shown to be consistent predictors of depression in adolescents (Hawker & Boulton, 2000; Kaltiala-Heino, Fröjd, & Marttunen, 2010). A longitudinal study from a national sample of adolescents revealed that any experience of victimization by peers was predictive of increased depression at a 2-year follow up (Turner et al., 2010). In a cross-sectional study, Brunstein-Klomek and colleagues (2007), reporting on data from 2,342 high school students, found that frequent exposure to victimization and/or the bullying of others was associated with greater risk of depression compared to those not involved in bullying behavior. They also reported that frequent exposure to all types of victimization (i.e. in or out of school) was related to increased risk for depression. Longitudinal studies have noted that the relationship between victimization and depression is bi-directional in younger adolescents—early

victimization leads to later depression and vice-versa (Sweeting, Young, West, & Der, 2006). Interestingly, research has shown that peer social support also moderates the relationship between bullies, victims, and victim-bullies and depression (Holt & Espelage, 2007), decreasing the strength of the associations between engagement in victimization and/or being the victim of peers and depression.

### Black Adolescents and Friend/Peer Support

As with research among White adolescents, findings regarding the importance of the peer group among Black adolescents are mixed. A cross-sectional study of urban Black adolescents found that delinquency among peers was associated with depression scores even after controlling for gender, home assets, and substance use (Tandon & Solomon, 2009). Another study of Black college students reported that the presence of a non-supportive peer group was associated with increased depression scores (Kimbrough et al., 1996). Contrarily, Zimmerman et al. (2000) found no significant relationship between friend support and depressive symptoms in a 6-month longitudinal study of Black adolescents. Likewise, Way and Robinson (2003) found that, when controlling for the effects of family support, peer support was not a significant predictor of depression. This was a longitudinal study, with a sample comprised of Black, Latino, and Asian American adolescents.

Studies of peer victimization among Black youth have yielded similar findings to other studies among White or mixed samples. A cross-sectional study of 190 Black and Hispanic 5<sup>th</sup> and 6<sup>th</sup> graders found that overt victimization was associated with depressive symptoms. Further, relational victimization was found to be uniquely related to depressive symptoms for girls only (Storch, Phil, Nock, Masia-Warner, & Barlas, 2003).

Similar findings were reported in a larger study of Black and Latino adolescents who were entering puberty; victimization was a predictor of depression for boys and girls (Nadeem & Graham, 2005).

### *Mesosystem Risk*

As previously stated, research at the mesosystem level has traditionally dealt with the interaction between parents and the adolescent's school (Anguiano, 2004; Ehly et al., 1997). However, another mesosystem can be described by the relationship between a child's mother and father (who both individually and collectively describe a microsystem for the child). Research has consistently demonstrated that disruption in this mesosystem—both divorce (Aseltine, 1996) and parental discord (Portes, Howell, Brown, Eichenberger, & Mas, 1992)—is related to adolescent depression. Stability within the marriage has been shown to be associated with decreased depression in both clinical and non-clinical samples of children and adolescents (Wang & Crane, 2001).

Van Voorhess and colleagues (2009) conducted a study comparing vulnerabilities to depression between Black and White adolescents. In a sample of adolescents from the National Longitudinal Study of Adolescent Health (Add Health; N = 6504), the authors reported on predictors of a depressive episode at a one-year follow-up. They found several similar predictors for Black and White adolescents (e.g. conflict in peer, family, and school relationships) and reported that the strongest predictors of depression for Black adolescents were largely demographic (e.g. neither parent finishing high school, running away from home). Divorce was found to be a significant predictor of a future depressive episode for White adolescents but not Black adolescents, indicating that

individual-level risks are more prominent for Black youth, while mesosystem disruption may be more problematic for White adolescents.

### *Macrosystem Risk*

At the level of the macrosystem, culture begins to emerge as a predominant issue. Therefore as it relates to this present study, data from research on macrosystem risk will focus largely on Black culture and its influence on Black adolescent depression.

In a cross-sectional examination of racial socialization and depressive symptoms among 160 Black adolescents, Davis and Stevenson (2006) found that racial socialization variables—specifically cultural pride and alertness to discrimination—were predictive of depressive symptoms while controlling for the effects of gender, neighborhood risks, and resources. Further exploring the relationship between racial identity and depression, Yip, Seaton, and Sellers (2006) examined different dimensions of racial identity and their relation to depression across the lifespan. Among the 304 adolescents in the sample, there was no association between racial identity and depression, but there was a significant interaction between age and racial identity for depression such that diffused identity college students (i.e. those who have not explored the significance of their racial identity or committed to an identity meaning) reported higher depression than achieved identity students (those who had both explored and committed to a particular identity meaning).

Other studies have found that culture has a moderating effect on relationships between racially-based stressors and depression. For instance, Sellers and colleagues (2006) found that racial discrimination was a significant predictor of depressive symptoms among Black adolescents, but that perception of public regard of Blacks was a

significant moderator of this relationship; Black adolescents who perceived high discrimination and believed that the public at large had high regard for Black people in general reported higher depression than adolescents with high perceived discrimination and low public regard scores. Interestingly, higher perceived public regard of Black people was associated with greater general well-being, regardless of level of perceived discrimination.

### *Exosystem Risk*

At the level of the exosystem, there is an effect on the adolescent from an outside system, but the adolescent him/herself is not directly involved in and cannot affect that system. Socioeconomic status (SES) is a type of exosystem in that the child is affected by systems related to SES (or more accurately, affected by level of access to certain systems that is conferred by SES), but has no ultimate say in those same systems (e.g. healthcare, quality of schooling, etc.). Studies show that low SES adolescents are at significantly greater risk for depression than their higher SES counterparts (Ayer & Hudziak, 2009) and that adolescents in homes below the poverty line are at significantly elevated risk for both Major Depressive disorder and Dysthymia compared to adolescents living above the poverty line (Riolo, Nguyen, Greden, & King, 2005). These findings are particularly relevant to the discussion of depression among Black adolescents as minority youth are consistently overrepresented in low-income populations (Lyons, Carlson, Thurm, Grant, & Gipson, 2006). Similarly, previous studies have found that there is an interaction between SES and race in terms of psychological distress among adults, such that lower SES Blacks are more susceptible to the impact of life-stress than low SES Whites (Ulbrich, Warheit, & Zimmerman, 1989). However, more recent data



has found that lower SES minority youth are not at elevated risk for depression compared to lower SES majority youth (Roberts, Roberts et al., 1997).

### *Chronosystem Risk*

The chronosystem is the ecological level that acknowledges changes in the previous four systems over time. Indeed a large portion of the theoretical underpinnings of this present study are related to the idea that there has been a general increase over time in the prevalence of depression among Black youth and a co-occurring increase of problems in many of the other four ecological levels (Willis et al., 2002). While there is little empirical proof that these co-occurrences are necessarily related, the observation is of philosophical importance in terms of maintaining an ecological understanding of the present problem of depression in the Black community.

### **Conclusion**

Given the prevalence of depression and its recurrence and relation to longer-term problems in functioning (Alloy et al., 2007), stressful life-events (Wingate & Joiner, 2004), and suicidal thoughts and behaviors (Lewinsohn, Rohde, & Seeley, 1994, 1996), it is the conclusion of this author that the problem warrants considerable attention, and an understanding of key risk factors for depression among Black adolescents is vital to the field of Black adolescent research

## CHAPTER 3

### THE PROBLEM OF ADOLESCENT SUICIDALITY

#### Definition of terms

*Suicidality* in this paper will refer to the clustering of *suicidal behaviors*: thoughts of suicide, suicide attempts, and death by suicide. The term *suicide* will refer to the occurrence of self-inflicted death with either explicit or implicit evidence of intent to die (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007). A *suicide attempt* is “a self-inflicted, potentially injurious behavior with a non-fatal outcome, for which there is evidence (either explicit or implicit) of intent to die,” (Silverman et al., 2007). *Suicidal ideation* refers to thoughts of killing oneself without regard to intention.

While these thoughts and behaviors have distinct definitions, their occurrences do often overlap. Suicidal ideation can be a precursor to both suicide attempts (Lewinsohn et al., 1996) and death by suicide (Brent, Perper, Moritz, & Allman, 1993). The strongest predictor of a suicide attempt is a prior history of an attempt (Lewinsohn et al., 1994), and suicide attempts are associated with future suicide (Brent et al., 1993).

In 1999, the United States Surgeon General released a report entitled *Surgeon General's Call to Action to Prevent Suicide* (US Public Health Service, 1999). In it, he spoke to the need for further research to identify risk and protective factors for adolescent suicidality in light of the public health crisis of adolescent suicide. One of the outcomes of this call to action was the completion of the *National Strategy for Suicide Prevention: Goals and Objectives for Action* (US Public Health Service, 2001). This document

outlined several specific goals in the ongoing campaign to reduce suicide and suicidal behaviors. Within this text, the need for increased research on factors related to suicide was reiterated, with the specific aim of understanding how individual and environmental risk factors interact to affect a person's risk for suicidal behaviors.

### **Prevalence of adolescent suicidal ideation and behaviors**

According to the most recently available statistics, the suicide rate among youth between the ages of 10 and 19 is 4.74 for every 100,000 individuals, making suicide the third leading cause of death within this age group. This is an increase from previous years, and currently, is the highest of the past 5 years (Centers for Disease Control and Prevention [CDC], 2007).

Even more prevalent than suicide are suicidal ideation and suicide attempts. Based on the 2009 *Youth Risk Behavior Surveillance* of high school students (Eaton et al., 2010), close to 14% of American high school students had seriously considered attempting suicide in the 12 months preceding the interview. This report also revealed that 10.9% had prepared a plan for the commission of suicide, 6.3% had actually *attempted* suicide and 1.9% made an attempt serious enough to require medical intervention.

### *Demographic variations in suicidality*

The presence of suicidal behaviors is not unique to any one group, but the severity and prevalence of those behaviors varies across groups defined by demographic variables. For example, even though suicidal ideation and suicide attempts are more common among girls than boys (Eaton et al., 2006; Lewinsohn et al., 1996), the suicide rate is considerably higher among males (C.D.C., 2007). Additionally older adolescents

are at a higher risk for attempting and dying by suicide than younger adolescents (Brent, Baugher, Bridge, Chen, & Chiappetta, 1999; Lewinsohn et al., 1996), although not necessarily more likely to report suicidal ideation (Lewinsohn et al., 1996). Although findings regarding associations between socioeconomic variables (income, parent education, etc.) and suicidal behaviors have been mixed (Baumeister, 1990), youth who die by suicide have been shown to be at greater socioeconomic disadvantage than general youth in the community setting (Gould, Greenberg, Velting, & Shaffer, 2003).

Suicidality has been shown to vary greatly across ethnic groups as well. The terms *ethnicity* or *ethnic group*, for the purposes of this research, will be defined as “clusters of people who have common culture traits that they distinguish from other people” (Smedley & Smedley, 2005, p. 17). CDC (2007) reports show that the suicide rate among youth between the ages of 10 and 19 years differs by ethnic group. Table 1 gives the overall suicide rates by ethnicity and gender. This table shows dramatic variation in completed suicide rates, with American Indian/Alaskan native youth having the highest rate (9.90), and Black (2.62) and Asian/Pacific Islander (3.16) youth having the lowest rates.

Variations in suicidal ideation and attempts have also been documented among adolescents of different ethnic backgrounds. According to the 2009 *Youth Risk Behavior Surveillance* (YRBS; Eaton et al., 2010), nationally, 13.1 % of White youth, 13.0% of Black youth, and 15.4% of Hispanic youth had seriously considered suicide during the 12 months preceding the data collection. It is noteworthy here that while the overall rate of suicidal thoughts among adolescents has decreased in recent years (from 16.9% in 2005 according to Eaton et al., 2006), rates among Black adolescents have increased from

12.2% to their current level in that same amount of time. The YRBS goes on to report that 10.3% of White youth, 9.8% of Black youth, and 12.2% of Hispanic youth had reported having made a suicide plan, and 5.0% of White youth, 7.9% of Black youth, and 8.1% of Hispanic youth had actually attempted suicide. Again, it is important to draw attention to the fact that overall suicide attempt rates are down from 2005 (8.4% to 6.3%, Eaton et al., 2006, Eaton et al., 2010), but rates for Black youth have increased slightly (from 7.6%). The prevalence for suicide attempts that resulted in medical treatment was 1.6%, 2.5% and 2.2% for White, Black, and Hispanic high school students, respectively; again, a decrease overall but an increase for Black youth (2.0% in 2005; Eaton et al., 2006). Furthermore, a study of risk behaviors among Asian American/Pacific Islander (AAPI) high school students in the United States found that 24.7% of these students had thought about attempting suicide in the 12 months, preceding the survey, 21.0% had made a suicide plan, and 8.9% had attempted suicide (Grunbaum, Lowry, Kann, & Pateman, 2000). Additionally, according to the 1990 *National American Indian Adolescent Health Survey*, administered to 7<sup>th</sup> through 12<sup>th</sup> grade American Indian/Alaska Native youth, one or more suicide attempts were reported by 21.8% of girls and 11.8% of boys (Borowsky, Resnick, Ireland, & Blum, 1999).

## **Risk Factors**

### *Risk at the Level of the Individual*

Lewinsohn et al. (1993) showed that many high school adolescents have met DSM-III-R diagnostic criteria for a mental disorder at some point in their lives (e.g. unipolar depression, anxiety disorder, disruptive behavior disorder, substance abuse disorder). Psychiatric disorders have been shown to increase the likelihood of suicidal

ideation (Reinherz et al., 1995) and suicide attempts (Lewinsohn et al., 1996) among adolescents, as well as being present in the majority of adolescent suicide completions (Marttunen, Aro, & Lönnqvist, 1993).

### Suicide

Psychological autopsy studies of adolescents who have died by suicide have revealed several psychological risk factors. For example, Brent and colleagues (1993) conducted psychological autopsies of 67 adolescent suicide victims (86.1% male, mean age of 17.1 years). They used a sample of community controls matched on age, gender, and SES to compare rates of definite and probable psychiatric diagnoses. They found that 79.1% of adolescent suicides met criteria for a definite diagnosis of a DSM-III disorder, compared to only 26.9% of community controls. This difference was significant. When data were examined for specific diagnoses, the authors found that any affective disorder (with or without comorbidity of a non-affective disorder), major depression, alcohol and/or drug abuse, and conduct disorder were all significantly more prevalent among suicides than among community controls. Attention deficit and anxiety disorders did not differentiate suicide victims from controls.

Brent et al. (1999) examined age- and sex-related risk factors for suicide among adolescents. The study was done using 140 consecutive adolescent suicides (13-19 years old, 47.5% male). This sample was also matched with a community sample on age, gender, and SES. Data on the ethnic composition of this study were not given. This study showed that the presence of any psychiatric disorder was associated with a significant increase in the likelihood of a suicide, but only among older adolescents. The researchers also found that conduct disorder was a risk factor for males but not females

and that comorbid mood and substance abuse disorders conveyed a greater risk than substance abuse alone, regardless of gender. Across all four groups (males, females, older, and younger adolescents), mood disorders, parent psychopathology, lifetime history of abuse, availability of a gun, and a past suicide attempt conveyed significant risk for suicide.

In a review of psychological autopsy studies of adolescent suicide, Marttunen et al. (1993) found that research consistently demonstrated a high prevalence of mental disorder among adolescent suicide victims in Europe and the United States. The percentages in this review were as high as 93% and 95% in the United States (Brent, Perper, Goldstein, & Kolko, 1988; Shafii, Steltz-Lenarsky, Derrick, & Beckner, 1988, in Marttunen et al., 1993), and 94% in Finland (Marttunen, Aro, & Lönnqvist, 1992). The Shafii et al. (1988) study was conducted using a sample of 21 adolescent suicides. In addition to the high prevalence of any mental disorder (as described above), they also found that 81% of the suicides presented with multiple diagnoses, as compared to only 29% of the control sample; a difference that was significant. In the Marttunen et al. (1992) article, the sample was comprised of 53 adolescent suicide victims in Finland. The researchers in that study found that 40% of the suicides had demonstrated antisocial behavior, 33% had a history of a suicide attempt and 60% had verbally expressed suicidal thinking. Only one study in the review found a prevalence of mental disorder that was less than 60%. Eisele and colleagues (1987, in Marttunen, 1993) found that only 28% of adolescent suicides had a diagnosable mental disorder.

These findings show the importance of attending to mental disorder as a predictor of suicide among adolescents. However, due to the lack of information pertaining to

variations in prevalence of mental disorder in suicide across ethnicities, there is still considerable room for examination in this area.

### Suicide Attempts

Psychiatric disorder has also been shown to be a predictor of suicide attempts among adolescents. Gould and colleagues (1998) showed that the presence of any mood disorder, disruptive behavior disorder, anxiety disorder, or substance use/dependence disorder significantly differentiated attempters from both ideators and non-suicidal adolescents. Additionally, comorbid psychiatric symptoms were predictors of suicide attempts. Her epidemiologic study used an ethnically diverse sample of 1,285 adolescents (age 9-17 years old). Despite the fact that prevalence rates are given for Black (non-Hispanic), White (non-Hispanic) and Hispanic youth are given in the study, no examination of differences across ethnicity was reported.

In a sample of 1,050 high school youth (47% male), Wagner, Cole, and Schwartzman (1996) found that high levels of depression, comorbid with substance abuse or conduct problems, predicts suicide attempts. These researchers also found that adolescents with comorbid depression and alcohol abuse were significantly more likely to have a history containing a suicide attempt than those adolescents who had depression or alcohol abuse without the other disorder. It was also the case that comorbid depression and conduct problems conveyed significantly greater risk for suicide attempts than either diagnosis individually. Comorbid depression and drug abuse placed adolescents at significantly higher risk for suicide attempts than those with depression but no drug abuse, but not for those with drug abuse but no depression. A similar pattern was found for those adolescents with drug abuse and conduct problems in concert. There was no



significant risk of suicide attempts for those adolescents with both disorders above and beyond the risk among those with just drug abuse, but the risk was significantly higher than those with just conduct disorders. This study reported a very low prevalence of ethnic minorities in the sample (2% Black, 1% Hispanic, and 1% other) and no analyses by ethnicity were reported.

Lewinsohn (1994) reported findings from a survey of 1,508 adolescents between the ages of 14 and 18 years. This study assessed the subjects at two timepoints approximately one year apart, collecting data on suicide history and psychiatric diagnosis at both. The results of this study showed that current suicidal ideation, a past attempt, having a friend who attempted suicide, low self esteem, low parent education, and having been born to a teenage mother were predictors of a future suicide attempt. This study also noted that externalizing behavior problems, suicidal ideation, and a past attempt were all significant predictors of a future suicide attempt even after controlling for depression. As with the studies previously discussed, the majority of this sample was White (91%).

Although some researchers consider adolescents who make multiple suicide attempts qualitatively different from those who only make one attempt, comparatively few studies have focused on differentiating multiple suicide attempters from other suicidal youth. Goldston and colleagues (1998) sought to differentiate psychiatrically hospitalized adolescents based on their suicide history. The researchers compared the psychiatric diagnoses of adolescents who 1) had previously attempted suicide, but had no recent attempt, 2) had recently made their first attempt, 3) had recently made a second or subsequent attempt, and 4) had never made an attempt. They found that affective

disorders were more prevalent among multiple attempters than first time attempters and nonsuicidal youth.

This finding is in line with other research demonstrating a higher level of depression among psychiatrically hospitalized suicidal adolescents who reattempted suicide than among ideators (Spirito et al., 2003). Esposito et al. (2003) found that multiple attempting inpatient adolescents, compared to single attempters, were significantly more likely to meet diagnostic criteria for a mood or a disruptive behavior disorder. Additionally, multiple attempters in the study reported significantly higher levels of depressive symptoms, affect dysregulation, major self-mutilation, and hopelessness than did single attempters. Studies have also shown that multiple attempting adolescents are more likely to present with substance use disorders, comorbid diagnoses, and more suicidal ideation than non-suicidal or ideating adolescents (although not more so than single attempters; D'Eramo, 2004).

Although psychiatric disorder has been shown to be a consistent predictor of suicide attempts, research supports that the strongest predictor of a suicide attempt is a previous attempt (Andrews & Lewinsohn, 1992; Lewinsohn et al., 1994). Research shows, however, that other high risk behaviors are associated with suicide attempts. Adcock and colleagues (1991), for example, found that adolescents who engaged in high risk behaviors such as sexual intercourse and alcohol consumption were at significantly greater risk for suicide attempts than those who abstained from both. Examinations by gender and ethnicity (Black versus White) within this study showed that this finding held true both for girls and boys, as well as White and Black adolescents. These findings are reported from a large, national survey of 8<sup>th</sup> and 10<sup>th</sup> grade youth. Similarly, Woods and

colleagues (1997) analyzed data from the 1993 Massachusetts Youth Risk Behavior Survey, a representative sample of 9<sup>th</sup> through 12<sup>th</sup> graders. The study sample was 50.7% female, 77.7% White, 6.7% Black, 5.9% Hispanic, 4.6% Asian, .8% Native American, and 4.4% other. The mean age was 16 years old. This study found that physical fights in the 12 months prior to the survey, regular cigarette use in the 30 days prior to the survey, being female, lack of seat belt use, gun carrying in the previous 30 days, substance use before last sexual activity, being Native American, and lifetime use of other drugs all significantly increased the likelihood of ever having made a suicide attempt.

The combined results of these studies show numerous predictors of adolescent suicide attempts. Despite, however, the considerable amount of research, there is much necessity for continued exploration of suicidal behavior among ethnic minority adolescents.

### Suicidal Ideation

Numerous risk behaviors have been associated with suicidal ideation among adolescents. Delinquent (Kandel, Raveis, & Davies, 1991), and impulsive (Kashden, Fremouw, Callahan, & Franzen, 1993) behaviors, for example, are known associates of increased suicidal thinking. Gould et al. (1998) showed that mood, anxiety, and disruptive behavior disorders are independent correlates of suicidal ideation. The researchers also found that any of the examined psychiatric disorders (mood, disruptive behavior, anxiety, and substance abuse/dependence) significantly differentiated ideators from non-suicidal adolescents. Esposito and Clum (2002a) also noted that mood disorder symptomatology predicted increased suicidal ideation in adolescents, but found that measures of disruptive behavior, anxiety and substance abuse symptoms did not

predict ideation above and beyond mood disorder symptoms. Similar results were found among adolescent psychiatric inpatients (Kumar & Steer, 1995) in that only depression and hopelessness—at the exclusion of anxiety, substance use, and behavior problems—accounted for unique variance in levels of suicidal ideation. A longitudinal study of 374 high school students (Mazza & Reynolds, 1998) showed depressive symptomatology and hopelessness are related to suicidal thinking among both male and female adolescents.

Variations by sex in correlates of suicidal ideation have been noted by Reinherz et al. (1995). This sample was taken from a 14-year longitudinal study. Youth involved in the study were assessed at age 5, 8, 15, and 18. As with other studies, data are not reported on the ethnic makeup of the sample. The researchers demonstrated that early simple phobia, alcohol abuse/dependence and dependency were all predictive of suicidal ideation among males, whereas major depression, alcohol abuse/dependence, attention problems, aggression, and hyperactivity were predictive for females. Additionally, in a sample of 456 high school students (39.3% male; 66% White, 26% Black) Mazza and Reynolds (2001) found further variation by sex and suicidality in psychopathology. They noted that males who experienced suicidal ideation along with a suicide attempt in their history demonstrated significantly greater adjustment disorder, schizophrenia, substance abuse, and borderline personality problems than those with a history positive for a suicide attempt, but without suicidal ideation, or those with neither suicidal ideation nor attempts. In each of those cases, the males with an attempt but with no suicidal ideation did not demonstrate significantly greater problems than those with a history negative for both suicide attempts and ideation. For females, Mazza and Reynolds found that those who were positive for suicidal ideation (regardless of the presence of an attempt)

demonstrated significantly greater schizophrenic and avoidant personality symptomatology than those with no history of attempts or ideation, but not greater than those with suicide attempts but no ideation.

These studies each indicate the importance of attending to all types of psychopathology and high risk behaviors as potential indicators of suicidal behavior. Psychiatric symptoms (most commonly disordered mood) greatly increase an adolescent's risk for suicide, suicide attempts, and/or ideation.

#### Psychopathology and Black Adolescent Suicidality

Research on predictors of suicidality also has shown psychopathology to be a primary predictor of suicide attempts and ideation among Black youth. A study of 313 Black high school students in Washington, D.C. (Molock, Puri, Matlin, & Barksdale, 2006) examined the buffering effect of religious coping on the relationship between hopelessness and depression and suicidal thoughts and attempts. Both depression and hopelessness in this study predicted suicidal ideation and attempts among Black youth in the study. Other research among Black high school students (Spann, Molock, Barksdale, Matlin, & Puri, 2006) has shown that depression and hopelessness both predict suicidal attempts and ideation, but also that depression mediates the relationship between hopelessness and suicidal behaviors. Jones (1997), in a comparison of 15 Black youth who had attempted suicide and 15 non-attempters found that, in addition to higher levels of depressive symptomatology, attempters reported higher general internalizing and externalizing pathology, as well as alcohol and drug abuse than non-attempters. These findings provide strong evidence for psychopathology (particularly depression) being a key predictor of suicidal thoughts and behaviors among Black adolescents.

### *Microsystem Risk*

#### Family Interactions

In addition to psychopathology and high risk behaviors—which can both be conceived of as “intrapersonal” issues—numerous interpersonal and social variables have been shown to be associated with suicidal behavior among adolescents. The family environment, for example, has been shown to be associated with levels of suicidal thinking. Esposito and Clum (2003), in a sample of predominately Caucasian high school adolescents, found that suicidal ideation was predicted by poorer overall family functioning (i.e., low family cohesion, high conflict and dysfunctional expressiveness). An epidemiologic study of youth between the ages of 9 and 17 (King et al., 2001) revealed numerous social/interpersonal risk factors for suicidal ideation and attempts. The sample of this study was 52.2% Caucasian (non-Hispanic), 13.4% Black (non-Hispanic), 26.9% Hispanic and 7.5% of other ethnicity. In this study, poor family environment (defined as low satisfaction with familial support, communication and leisure time), low parental monitoring, and poor instrumental and social competence significantly differentiated youth with a history of ideation or attempts from those with no history of suicidal thoughts or behaviors. Additionally, this study revealed that, when controlling for the presence of a mood or anxiety, or disruptive disorder, there was a significant association between suicide attempts/ideation and poor family environment and low parental monitoring.

Additionally, low perceived social support (Esposito & Clum, 2003; Kerr et al., 2006) and feelings of loneliness (Roberts, Roberts, & Chen, 1998) have been shown to be predictive of suicidal ideation. Furthermore, Bearman and Moody (2004) showed that

having a friend who had attempted and/or died by suicide increased the prevalence of suicidal ideation among high school students. This study also found significant sex differences in social variables that relate to suicidal ideation. Among girls, social isolation and having friends who were not friends with each other (intransitive social networks) were associated with higher risk for suicidal ideation. Such was not the case for boys. They also found that being a school with a dense social network reduced the risk of suicidal ideation among girls but not boys. Mazza and Reynolds (1998) found that social support was negatively associated with suicidal ideation, but again, only for girls and not for boys. This differential pattern of relationships between social variables and suicidal ideation for girls and boys has also been found among even acutely suicidal, psychiatrically hospitalized adolescents (Kerr et al., 2006).

The combination of these studies demonstrates the importance of an adolescent's social network—both familial and extra-familial—in the development of suicidal thoughts and behaviors. Lack of a supportive and enriching family/peer environment demonstrably and significantly adds to risk of suicidality.

Significant associations between physical/emotional abuse and neglect and suicidality have been consistently found in research. A review article of family factors related to adolescent suicide revealed that a considerable amount of research in the past 25 year has shown that physical abuse and emotional neglect are significant predictors of suicidal ideation, attempts, and death by suicide (Wagner, 1997), despite the fact that some of the findings were confounded because sexual and physical abuse were not examined separately. Other research has supported the finding that experiences of physical abuse during childhood and adolescence are strongly associated with suicidal

thoughts and behaviors during adolescence (Garnefski, Diekstra, & de Heus, 1992). Silverman, Reinherz, and Giaconia (1996), for example, demonstrated that childhood physical abuse significantly increased the likelihood of suicidal ideation among boys at age 15. They also showed that physical abuse significantly increased risk for suicidal ideation and attempts among girls, both at age 15 and later in life at age 21. Lipschitz and colleagues (1999), in an examination of adolescent psychiatric inpatients, found that suicide attempters were more likely to report a history of physical and emotional abuse as well as emotional neglect. They also found that emotional neglect was a significant predictor of suicidal ideation. From these findings, one should take that deficits in the parent-child relationship and increased negativity in expression of emotions are both significant predictors of suicidal outcomes.

Research has also supported a significant association between adolescent suicidality and sexual abuse. Esposito and Clum (2002b) also found that childhood sexual abuse predicted suicidal ideation and behavior within a sample of adolescents in a juvenile detention center and that social support moderated the relationship between sexual abuse and suicidal ideation. Adolescents with histories of sexual abuse and high satisfaction with social support reported significantly lower suicidal ideation than those with sexual abuse histories and low satisfaction with their social support. The review article by Wagner (1997) also presented research that demonstrated a link between sexual abuse and suicidal thoughts and behaviors, although there were no findings that indicated a link between sexual abuse and suicide. Bearman and Moody (2004) found a link, however, between forced sexual relations and suicidal thoughts among adolescent girls, but not boys. Silverman and colleagues (1996) showed that females with a childhood



history of sexual abuse were at significantly greater risk for suicidal ideation at age 15 and later at age 21 and at greater risk of suicide attempts at age 21. Shaunesey and colleagues (1993) also demonstrated that hospitalized adolescent suicide ideators and attempters with a history of sexual abuse demonstrated more severe ideation and a greater number of attempts than those adolescents without sexual abuse in their history, indicating that sexual abuse can affect the presentation of suicidality even among acutely psychiatrically disturbed youth.

#### Black Adolescents and Family Support

In addition to the psychiatric symptoms that relate to suicidality, numerous variables related to social support networks and interpersonal function have also been shown to relate to suicidal attempts and ideation among Black adolescents. Data from the *Reach for Health Study for Urban Youth*, for example, were reported by O'Donnell et al. (2003) on suicidality and level of adult support. The sample was comprised of 879 11<sup>th</sup> graders, 71.4% of whom were Black, non-Hispanic. The results showed that low perceived social support was associated with higher suicidal ideation and suicide attempt risk. In addition, reporting an unavailable family network (feeling that one's family could not be turned to for support in times of stress), and only formal network activation (utilizing pastors, teachers, and/or other non-related adult for support) were related to greater suicide attempt risk. This study provides strong support for attending to the social support network of Black youth, as lack of sufficient or the proper kind of support may lead to suicidal thoughts and actions.

A study of 121 Black adolescents (Summerville, Kaslow, & Doepke, 1996) who were psychiatrically hospitalized following a suicide attempt examined levels of

internalizing and externalizing pathology, as well as family functioning. The study showed that, while there was a high degree of variation in psychiatric symptomatology scores (indicating that suicidal Black youth cannot be said to demonstrate consistent diagnosable mental disorders), approximately 67% of the sample reported their families as moderately to severely dysfunctional (only one-third reported satisfactory levels of affect and warmth [cohesion] and adaptability to stress [adaptability]), with the majority reporting dysfunction in family cohesion. These findings suggest that, while acutely suicidal Black adolescents cannot be consistently characterized as psychiatrically disturbed, the majority do report deficits in their family life, particularly in the area of cohesion.

Additionally, a study comparing Black adolescent suicide attempters (Lyon et al., 2000)—who were seeking medical attention related to a suicide attempt—to non-attempting youth found that attempters were 41 times more likely to report being neglected and 20 times more likely to have experienced the threat of separation from a parental figure (as well as 231 times more likely to report abuse of drugs or alcohol and 5 times more likely to have a history of suicidal ideation) than the non-suicidal comparison group. In this study, the attempters (n = 38, mean age of 14.7 years old, 82.2% female) were matched 1:2 on age and gender with 76 “walk-ins” seeking treatment unrelated to suicidal behavior (mean age of 14.9, 81.6% female). It follows from these data that familial functioning and relationships are significant in the development of suicidal thoughts and behaviors among Black adolescents.

#### Friend/Peer Support

As with previously reported data on depression, findings regarding the independent value of peer support as a predictor of suicidal thoughts and behaviors are decidedly mixed. For example, Mazza and Reynolds (1998), in a longitudinal study of adolescents, reported that baseline levels of social support predicted lower suicidal ideation at a 1-year follow up, but this was only the case for girls and not boys. Esposito and Clum (2003) found that social support predicted lower suicidal ideation within a community sample of clinically referred (i.e. high risk) high school students. This held even while controlling for the presence of an internalizing disorder and negative life events.

Despite these findings, a longitudinal study of high school students revealed that friend support was a significant predictor of a future suicide attempt, but this relationship was not significant when controlling for depression (Lewinsohn et al., 1994). Bearman and Moody (2004), in a longitudinal study of adolescents from ADD Health reported that for boys, but not girls, belonging to a school with a dense social network was related to decreased risk for a suicide attempt. Interestingly, none of the other peer variables were predictive of attempts or ideation among boys, and none of the positive peer interaction variables predicted ideation or attempts among girls. This finding will be discussed in further detail later.

#### *Victimization by peers/bullying behavior*

Brunstein-Klomek and colleagues (2007) found that high school students involved in bullying behavior—either as the perpetrator or victim—were at significantly higher risk for serious suicidal ideation, and suicide attempts. This was true for both boys and girls in the sample. Other research has also found that both victims and

perpetrators of peer violence were at elevated risk for suicide (Evans, Marte, Betts, & Silliman, 2001). A study from Finland, however, determined that younger boys (10 to 12 years old) who were both bullies and victims of peer aggression were significantly more likely to report suicidal thoughts and engage in self-harm, than boys who were either bullies or victims and those who were neither (Olafsen & Viemerö, 2000). This study also found that, among girls, self-destructive strategies were more strongly associated with indirect bullying (gossip, name-calling, etc.) than direct bullying (physical aggression). Additionally, Bearman and Moody (2004), in their examination of American adolescents in grades 7 through 12, found that social isolation (having few friends to name and being named by few as a friend) was predictive of suicidal thoughts among girls, but not boys. These studies show that, regardless of gender, antagonistic peer relationships place adolescents at risk for developing suicidal behaviors.

As with psychopathology, the effect of social networks and interpersonal functioning on adolescent suicidality cannot be overestimated, as documented in a more complete review of the literature related to adolescent social functioning and suicidal thoughts and behaviors (King and Merchant, 2008). The sum total of the presented findings indicates that adolescents with an unsupportive, violent, or neglectful social environment are at immediate and future risk for suicidal thoughts and behaviors. And while research supports somewhat stronger relationships between social variables and suicidal thoughts for girls, the evidence does support the notion that boys can also be affected by their external peer environment and may respond to interpersonal slights with increased suicidality.

Ultimately, the summation of these findings leaves one with the understanding that the relationship between the adolescent and different objects in his/her ecological spheres is as significant an issue as the child's own internal psychological state in terms of the development of suicidal thoughts and behaviors. The repeated validation of social and interpersonally motivated suicidal thoughts and behaviors indicates a need for considerable and continued attention.

### **Social theories of suicide**

Several theories of suicide exist to explain the phenomenon; however, two that are particularly relevant to the social context of suicide will be discussed here:

Durkheim's theories of social integration/regulation and Joiner's theories of thwarted belongingness, burdensomeness, and pain exposure.

#### *Social Integration and Social Regulation*

Emile Durkheim, in *Suicide*, first proposed the notion that suicide could be motivated by factors other than psychological and related to the physical environment, and concluded that the commission of suicide might be motivated by certain social factors. One of the factors is what he calls "social integration", defined as one's level of commitment to a particular group. There were, according to Durkheim, four types of suicides explained by the theory of social integration. The first was "Egoistic" suicide, which is committed when an individual experiences loose ties to society and, therefore, commits suicide because he or she feels there will be little impact felt from his/her loss. The second type is "Altruistic" suicide, which is committed when individuals feel an extremely high level of attachment to their respective group and felt that their death would be a benefit to the society at large. The final two types of suicide relate to levels

of social regulation upon the individual. “Anomic” suicide occurs when there is a weak societal regulation and a sense of “normlessness” is instilled within the individual. The fourth type is “Fatalistic” suicide in which the individual commits suicide in response to extremely strong societal regulation and the act is used as a means of escape from an oppressive social milieu.

Social integration and regulation have been more recently defined as “the extent of social relations binding a person or a group to others such that they are exposed to the moral demands of the group,” and “the normative or moral demands placed on the individual that come with membership in a group,” respectively (Bearman, 1991). Social integration remains a highly theoretical concept, and, thus, little empirical research exists on social integration among adolescents. However, factors which may be considered a proxy for this concept have been shown to be related to suicidality. For example, social isolation (Negron et al.,1997) has been shown to be a risk factor for suicide attempts among adolescents. Additionally, low attachments to one’s mother and to peers (for girls) have been show to be predictive of suicidal ideation among psychiatrically hospitalized adolescents (DiFilippo & Overholser, 2000).

#### *Perceived Burdensomeness, Thwarted Belongingness, and Pain Habituation*

According to Joiner (2005), there are three conditions which must be present before a death by suicide may occur: 1) being habituated to painful sensations and losing the instinct of self-preservation, 2) perceiving that one is a burden upon others, and 3) sensing that one does not belong and attempts at making connections will be thwarted/ineffective. The first condition, according to Joiner, can be acquired through repeated self-injury (lethal or not), having pain/injury inflicted upon the self from an

external force (e.g., painful surgeries, tattoos/piercings, physical fights), and/or through vicarious habituation (e.g., having a gun in the home). The latter two conditions are both related to one's *perception* (Joiner emphasizes this aspect) of his/her interactions with social circles. Perceived burdensomeness occurs when a person appraises him/herself as socially ineffective and a detriment to those in his/her circle of influence. Joiner cites examples of parents and spouses who feel that their mental/physical illness places unnecessary strain on the family as evidence of the role of perceived burdensomeness in suicide. Thwarted belongingness is a condition which exists when one does not feel sufficient/satisfying connections with others. Joiner points out that the ideas of burdensomeness and thwarted belongingness, while distinct, are related to one another and cites research that shows that feeling like a burden reduces one's sense of and desire for connection to others.

The current discussion will focus on burdensomeness and thwarted belongingness, as they are more immediately relevant to the topic of the social context of suicide. Research has shown a link between an individual's level of perceived burdensomeness and suicide. Joiner et al. (2002) examined the suicide notes of 20 adult suicide attempters and 20 adults who had died from suicide in the United States. Comparing the content of the notes of the two groups, they found that perceived burdensomeness was associated with a greater likelihood of being a death from suicide (versus an attempter) and differentiated adult attempters from those who died to a significantly greater degree than did desire to control/affect negative emotion states, emotional pain, hopelessness, age and gender. Furthermore, in a second study of suicide notes of suicides and suicide attempters in Germany, Joiner and colleagues (2002) found

that those with feelings of burdensomeness used significantly more lethal methods than those who did not. Additional research has shown that suicidal ideation is predicted by both social isolation and perceived burdensomeness (de Catanzaro, 1995) among both general and high risk (psychiatric) populations of adults. The converse has also been shown to be true, as in the case of Brown and colleagues (1999), who showed that viewing one's self as a *benefit* to one's relations was negatively correlated with suicidal ideation and behavior among college students. Despite the strong, empirical association between perceived burdensomeness and suicidality, this association has not been examined among adolescents.

Joiner's (2005) construct of thwarted belongingness, as such, has not been greatly researched. However, numerous studies have shown that constructs similar to and encapsulated within this theory are related to suicidality. As previously reported, adolescents who report peer victimization (Brunstein-Klomek et al., 2007) and social exclusion (Roberts et al., 1998) report higher suicidal ideation. Additionally, groups who may experience high social rejection and disconnectedness, based on their minority status, have been shown to be at an increased risk for suicide. For example, gay, lesbian, and bisexual youth (Russell & Joyner, 2001), second generation/immigrant/minority youth (Hovey & King, 1996; Roberts, Chen, & Roberts, 1997), have all been shown to experience higher levels of suicidal thinking. Conversely, adolescents who experience high levels of belongingness, those, for example, belonging to religious groups (Nonnemaker, McNeely, & Blum, 2003; O'Donnell, O'Donnell, Wardlaw, & Stueve, 2004), have been shown to report lower levels of suicidal ideation.

## **ETHNIC DIFFERENCES IN YOUTH SUICIDALITY**



Different prevalence rates in suicide, attempts, and ideation between Black and White adolescents have been documented (Eaton et al., 2006), and these differences, in concert with research showing differences in levels and types of psychopathology (Lau et al., 2004; Politano, Nelson, Evans, & Sorenson, 1986), and social embeddedness (Snowden, 2001), and the experience of different levels and types of social strain (Watt & Sharp, 2002), indicate a need to attend to different processes in the development of suicidality between Black and White youth.

Watt and Sharp (2002) reported data analyzed from The National Longitudinal Study of Adolescent Health (Add Health), a large school based study of a nationally-representative sample of 7<sup>th</sup> through 12<sup>th</sup> graders. A subsample of Black and White youth was used for this study (n = 15,791). The researchers analyzed the data for gender and race differences in social, achievement, and family relational strain. The results of this study demonstrated that Black male adolescents are not as likely to respond with a suicide attempt to certain status strains (not going to college, welfare receipt, lack of broad social acceptance) as White male adolescents. Similarly, Black females are less likely to respond with a suicide attempt than White females to poor grades, downward educational mobility (in relation to the mother), and lack of social acceptance, but more likely to respond with an attempt to feeling uncared for by their mothers. Black males, however, are *more* likely to respond with a suicide attempt to feeling uncared for by their fathers and adults in general than are White male adolescents. This study also showed that, while Black and White females responded to a wider array of relational strains than Black and White males, and presented a slightly different pattern of response, there were no differences between Black and White females in terms of overall responsiveness to

relational strains. This research further underscores the effect of external social/relational factors on Black adolescent suicidality and the necessity of attending to different social/interpersonal factors when dealing with Black—as opposed to White—youth.

Perkins and Hartless (2002) used an ecological risk-factor approach to examine risk factors for suicidal ideation and behavior among Black and White adolescents. This study was conducted with a sample drawn from 43 middle and high schools from Michigan. The sample consisted of 14,922 youth (53% female; mean age of 14.5 years). For both Black and White youth in the study, hopelessness and physical abuse were predictors of suicidal ideation (although both significantly stronger predictors for White adolescents). Unlike other studies, however, they did not find associations within either group between suicidal ideation and lack of friends or low levels of involvement in extracurricular activities. However, they did determine that individual high-risk (i.e. excessive alcohol/drug use, hopelessness, physical/sexual abuse) and contextual high-risk (i.e. unsupportive family and school climates) were related to frequent suicidal thinking and a history positive for a suicide attempt. They also reported that the individual high-risk group experienced higher suicidal ideation and attempt risk than the contextual high-risk group. And while the authors found that hopelessness, low family support, physical abuse, sexual abuse, alcohol use, hard drug use, and a negative school climate all predicted suicide attempts in the sample, there were no differences based on ethnic group membership in this study.

Similarly, two studies comparing Black and White adolescent psychiatric inpatients have found that the two groups differ in regard to correlates of suicidality. Joe and collaborators (2007) compared samples of acutely suicidal Black and White youth,

matched retrospectively by gender (both groups 70% female; mean age for Black youth: 15.26; for White youth: 15.14). The study found that the Black adolescents reported significantly higher levels of perceived support from their families (as opposed to friends, or non-related adults) than the White adolescents. The authors also reported that lower levels of perceived family support was significantly correlated with increased suicidal ideation among the Black youth, but not among the White youth, however, the magnitude of the correlations for Black and White youth were not significantly different.

A later study by the same research group (Merchant, Kramer, Joe, Venkataraman, & King, 2009) compared acutely suicidal Black and White youth on levels of interpersonal orientation (defined as the desire for affiliation with others; Hill, 1987) and level of perceived social support predicted multiple suicide attempts. This sample was also matched for age, gender, and income level. In the total sample, and in the White subsample, multiple attempters were differentiated from non-multiple attempters by higher suicidal ideation and lower perceived family, friend, and non-related adult support. Only higher interpersonal orientation predicted multiple suicide attempts within the subsample of Black youth. Contrary to the study's hypothesis however, the interaction between interpersonal orientation and social support was not found to be significant—adolescents with high interpersonal orientation and low social support were not significantly more likely to be multiple attempters than those with any other combination of interpersonal orientation and social support.

## **CHAPTER 4**

### **THE PRESENT STUDY**

#### **Study Rationale**

There is considerable empirical evidence that there are somewhat different processes at work between Black and White adolescents in the development and exacerbation of depression and suicidal thoughts and behaviors, specifically in response to social strain and interpersonal stressors. And while there is substantial indication that a full understanding of ecological influence is imperative to fully understanding development, this current study will focus primary on the microsystem level; both for feasibility purposes, and because the variables chosen for study offer the chance to study this ecological level in considerable depth. This will be the first time that Black adolescent social and interpersonal relationships and resources will have been examined to this depth for their ability to predict depression and suicidal ideation.

#### **Specific Aims and Hypotheses**

*Specific Aim 1: Determine the social/interpersonal functioning variables that relate to depressive symptoms within a community sample of Black adolescents.*

Variables examined will include social integration, perceived social support, perceived burdensomeness, thwarted belongingness, peer victimization, social functioning, and interpersonal orientation. It is hypothesized that one or all of the following will be related to higher levels of depressive symptoms:

- 1) Higher perceived burdensomeness and/or thwarted belongingness

- 2) Higher interpersonal orientation
- 3) Lower social integration.
- 4) Lower levels of communalism
- 5) Lower friend support and/or family support
- 6) Experiences of peer victimization (bullying or being bullied)

Furthermore, it is hypothesized that sex will be a moderator of the relationship between the social and interpersonal predictors and depression; i.e., girls will present with different and or stronger relationships between these variables and depression.

*Specific Aim 2: Determine the social/interpersonal functioning variables that relate to suicidal ideation within a community sample of Black adolescents.*

The variables examined for this specific aim will be the same as with depression. It is hypothesized that one or all of the following will be related to higher levels of suicidal ideation:

- 1) Higher perceived burdensomeness and/or thwarted belongingness
- 2) Higher interpersonal orientation
- 3) Lower social integration.
- 4) Higher levels of communalism
- 5) Higher friend support and/or family support
- 6) Experiences of peer victimization (bullying or being bullied)

As with depression, it is hypothesized that sex will be a moderator of the relationship between the social and interpersonal predictors and suicidal ideation, such that girls will present with different and/or stronger relationships between these variables and suicidal ideation.

## CHAPTER 5

### METHOD

#### *Procedures*

The study received approval from the University of Michigan Medical School Institutional Review Board (IRBMED) on August 14, 2008 and from the Saint Joseph Mercy Hospital IRB on January 28, 2009. Active study recruitment began in the Saint Joseph Mercy Pediatric Emergency Department on February 11, 2009 and continued through December 18, 2009. Recruitment took place in the evenings from 5pm to 11 pm, 5 days a week. Recruitment was conducted by Christopher Merchant and Ryan Hill for the first 4 months of the project, and by Christopher Merchant for the remaining 6 months of the project.

#### *Participants*

Participants were 69 Black adolescents (ages 13-17 years), recruited from among the population of admittances to the pediatric emergency department setting of Saint Joseph Mercy hospital. Those adolescents who were severely injured (i.e. level I trauma), cognitively impaired, or were unable to fully understand the consent form and process due to language or other barriers were excluded from participation. Further, those adolescents who presented in the emergency department without a parent/legal guardian present were ineligible for the study. The emergency department setting was chosen for several reasons. First, because the setting provides a non-exclusive and universally necessary service, it was considered to be a place of prime access to a broad

range of individuals, crossing age, and socioeconomic lines, and providing a representative sample of the surrounding area. Second, this study was designed with a sample of Black adolescents in mind and a recent nationally representative study of emergency department utilization found that the majority of adolescent ED treatment recipients age 24 and younger are Black or African American, non-Hispanic (Nawar, Niska, & Xu, 2007), which again indicated that this setting would be ideal for access to the intend sample. Finally, this setting also provides a “captive” sample in so far as the visit presents several extended waiting periods for the adolescent and family (triage, waiting for results, etc.). These wait times provided an opportune time for the investigator to administer the study protocol.

Adolescents were informed during the assent/consent process about the limits of confidentiality and the need to inform parents/appropriate staff if there were significant concerns about safety. Upon consent/assent, adolescents and guardians were separated such that neither could see the forms that the other was completing or the answers given to the various questions. Additionally, compensation for participation in the study was provided to the adolescent in the form of a \$20 gift card to Target <sup>TM</sup> department stores.

During the study period, 121 Black adolescents presented in the emergency department. Of these, 93 (76.86%) were eligible for recruitment. The most common reason for ineligibility was absence of a parent or legal guardian (18 of the 121 who presented). From the eligible adolescents, 72 agreed to participate in the study, yielding a recruitment rate of 77.42%. Three of the 72 did not complete the study, resulting in a final study sample of 69 Black adolescents.

The mean age of the sample was 15.4 years ( $SD = 1.4$ ). Girls comprised 37% of the overall sample. Table 2 presents the demographic characteristics of the overall sample and separately for boys and girls. No significant demographic differences were found between boys and girls.

### *Measures*

Study measures were chosen based on their construct validity and the literature of known risks for suicidality in youth. Unless otherwise indicated, each measure is adolescent self-report. A parent-report demographic questionnaire was used to collect information regarding age, sex, race, current grade in school, and parent education level. Completion of the full battery took an average of 40 minutes. The battery of questionnaires was administered to the adolescent in the following order: the Interpersonal Orientation Scale, the Interpersonal Needs Questionnaire, the Duke Social Support Index, the Suicidal Ideation Questionnaire – Junior, Perceived Support from my Family, the Perceived Emotional/ Personal Support Scale, the Peer Experiences Questionnaire, the Reynolds Adolescent Depression Scale – 2, the Alcohol Use Disorders Identification Test, and the Social Outlook Questionnaire. Table 3 gives the means, standard deviations, ranges, and internal consistency values for each of the study variables.

### Psychopathology/Adolescent Functioning

**The Suicidal Ideation Questionnaire-Junior** (SIQ-JR; Reynolds, 1988) is a 15-item self-report questionnaire assessing the frequency of suicidal thoughts. Higher total scores indicate higher severity of suicidal ideation. Total scores on the SIQ-JR have shown high internal consistency ( $r_\alpha = .91$ ) and test-retest reliability ( $r_{tt} = .91$ ) among a



sample of predominately African American and Hispanic inner-city adolescents (Reynolds & Mazza, 1999). Total scores of psychiatrically hospitalized adolescents have been found to be significant predictors of suicidal thoughts and attempts 6-months posthospitalization (King, Hovey, Brand, & Ghaziuddin, 1997).

**The Reynolds Adolescent Depression Scale – 2nd Edition** (RADS-2, Reynolds, 2002) is a 30-item self-report questionnaire designed to assess the severity of depressive symptomatology. The total score is used as an indicator of an adolescent’s global level of depressive symptoms, and has shown strong internal consistency for both community ( $r_{\alpha} = .93$ ) and clinical samples ( $r_{\alpha} = .94$ ) of adolescents. It has also shown strong test-retest reliability at 6 weeks ( $r_{tt} = .80$ ) and 12 weeks ( $r_{tt} = .79$ ) among high school students.

**The Alcohol Use Disorders Identification Test** (AUDIT; Babor et al., 2001) is a 10-item, self-report questionnaire designed as a screening measure for problematic alcohol usage. The AUDIT has been shown to have greater sensitivity and specificity in predicting alcohol abuse or dependence among adolescents than other screening measures in both emergency department settings (Chung et al., 2000) and at routine healthcare appointments (Knight et al., 2003). Factor analysis of data gathered from adolescents in the emergency department setting indicates a two-factor structure to the AUDIT; “consumption” and “problems” (Kelly & Donovan, 2001). The “consumption” factor consists of the first three items of the scale and measures the amount and frequency of drinking. The “problems” factor is the remaining 7 items of the measure and evaluates issues of dependence and consequences associated with drinking. This study will only employ the three consumption items as they have been shown to have high internal

consistency in adolescent samples ( $\alpha = .85$ ; Chung et al., 2002) and correlate highly with other measures of alcohol use among adults (Maisto et al., 2000).

### Social/Interpersonal

**The Interpersonal Orientation Scale (IOS; Hill, 1987)** is a 26-item self-report measure designed to assess motivation towards interpersonal affiliation. Individuals with higher scores on this dimension are more likely to seek out interpersonal interactions with others. It has demonstrated both convergent (strong, positive correlations with measures of sociability and social self-disclosure) and discriminant (lack of correlation with measures of ability to accomplish things for one's self and tendency to become connected to characters in books/movies) validity, as well as moderate test-retest reliability among college students over a period ranging from 6 to 15 weeks (Hill, 1987). The total score for this scale has previously shown high internal consistency in a sample of acutely suicidal, psychiatrically hospitalized adolescents ( $\alpha = .94$ , King et al., 2007).

There are four empirically-supported IOS subscales which describe specific motivations for seeking interpersonal affiliations: 1) emotional support, 2) attention, 3) positive stimulation, and 4) social comparison (Hill, 1987). For this study only the 6-item emotional support subscale will be utilized. It has demonstrated very strong internal consistency among young adults ( $\alpha = .83$  for women and  $.86$  for men) and strong positive correlations with other measures associated with the concept of motivated affiliation, such as sociability ( $r = .50$ ) and empathic concern ( $r = .41, p < .001$  for both correlations; Hill, 1987).

**The Perceived Emotional/ Personal Support Scale (PEPSS; Slavin, 1991)** asks the respondent to name 9 members of his or her social network (3 friends, 3 family

members and 3 non-familial adults) and rate the supportiveness of each person based on 4 questions: “How much do you talk to them about personal concerns?” “How close do you feel to them?” “How much do they talk to you about their concerns?” “How satisfied are you with the support they give you?” Research has demonstrated adequate test-retest reliability and internal consistency for all three of the subscales in addition to good concurrent and predictive validity for the friend and family member subscales. Cronbach’s alpha for each subscale is as follows: .87 for family support, .88, for adult support, and .93 for friend support (Slavin, 1991). Only the friend support scale will be utilized in this study and data are also analyzed at the level of each individual question. Thus the author will present psychometric data for Total Friend Support and for Closeness to Friends, Talking to Friends, Listening to Friends, and Satisfaction with Friends.

**The Social Outlook Questionnaire** (SOQ; Boykin et al., 1997) is a 40-item scale developed among a sample of Black college students to measure the degree to which an individual feels intimately tied to his or her social environment and feels that the good of the individual is closely tied to the good of the group. The total score has a high degree of internal consistency ( $\alpha$  ranging between .84 and .87) and is correlated strongly with other scales of social interdependence (Boykin et al., 1997).

**The Peer Experiences Questionnaire** (PEQ; Vernberg et al., 1999) will be used to assess overt and relational aggression/victimization (modified as outlined in Prinstein, Boergers, & Vernberg, 2001). The questionnaire includes nine items presented in two versions (aggressor and victim). Respondents are asked to indicate how often (1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week) they

engaged in, or were victims of a stated behavior (ex. being chased/chasing with the intent to inflict harm). Cronbach's alpha was high for both victimization (.79) and the bullying (.85) scales. Test-retest reliability over a span of 6 months for this questionnaire has ranged from .48 to .52 in samples of children and adolescents and the measure has been shown to correlate significantly with both self-, parent-, and peer-reported victimization (Prinstein et al., 2001).

**The Interpersonal Needs Questionnaire (INQ;** van Orden et al., in press) was developed to measure the constructs of thwarted belongingness and perceived burdensomeness (Joiner, 2005). It is a 12-item scale that contains 7 items to measure how strongly an individual feels he/she is a burden on others (burdensomeness; "These days, the people in my life would be better off if I were gone.") and 5 to measure an individual's level of connectedness to others (belongingness; "These days, other people care about me). Items are rated on a 7-point Likert scale, and scored so that higher scores indicate higher levels of perceived burdensomeness and thwarted belongingness. Both the belongingness items and the burdensomeness items have demonstrated high internal consistency ( $\alpha = .85$  and  $.89$ , respectively), and strong, positive correlations with suicidal ideation, among college students (van Orden et al., in press).

**The Perceived Social Support from Family Scale (PSS-FA;** Procidano & Heller, 1983) consists of 19 true/false items that determine the level of perceived support an individual receives from his or her family. In a sample of college students, research has shown the scale to have very good internal consistency ( $\alpha = .90$ ) and be negatively associated with life stress ( $r = -.29, p < .01$ ) and measures of psychopathology ( $r = -.43, -$

33, and -.33 for depression, psychasthenia, and schizophrenia respectively;  $p < .001$  for all; Procidano & Heller, 1983).

**The Duke Social Support Inventory (DSSI; Landerman et al., 1989)** is a 35-item self-report measure comprised of five factorially-derived subscales: 1) satisfaction with social support, 2) perceived social support, 3) frequency of social interaction, 4) size of social network, and 5) availability of instrumental social support. For this current study, only the social network and social interaction subscales will be used. Although the DSSI has not been heavily used with adolescent samples, data from studies of adults show that increased social networking is related to decreased mental distress ( $r = -.05, p < .01$ ) and decreased psychiatric outpatient visits ( $r = -.05, p < .01$ ; Koenig et al., 1993). Internal consistency measures have not been performed for this scale because there is no reason to expect significant inter-item correlations between items (it is not expected, for example, that number of family members correlates with number of church attendances; Hays et al., 1997).

#### *Data analysis plan*

##### Power analysis and sample size consideration.

Previous studies have found that social/interpersonal variables (social support, family environment, life events, and problem solving) are strong predictors of suicidal ideation among adolescents. Esposito and Clum (2003) found that these variables accounted for 42% of the variance in suicidal ideation scores. Similarly, Lewinsohn and colleagues (1994) noted that these variables were also significant predictors of a current diagnosis of depression. Using the  $.42 R^2$ , we calculated a robust effect size ( $f^2 = .72$ ). When entering this effect size into an a-priori calculator of sample size with an alpha

level of .05, 8 total predictors, and a desired statistical power of 80%, it was determined that we would need 30 adolescents. By enrolling 70 adolescents, it was calculated that the number of predictors in this study could be set to 15 (including interaction terms), and the study would retain a power level of 99% in detecting an  $R^2$  of .42 or higher.

#### Determination of predictor variables

A Pearson correlation matrix was used to determine significant univariate correlates with suicidal ideation. Separate correlation matrices were generated for boys and girls to determine the presence of sex differences in correlates of suicidal thinking. The significance of these differences was tested using Fisher's Z-test. Linear regression analysis tested the predictive strength of variables found to have a significant zero-order correlation with suicidal ideation. For those correlates that differ by sex, an interaction term between sex and that variable was included in the regression.

A Pearson correlation matrix was also used to determine significant univariate correlates with depression scores. Separate correlation matrices were again generated for boys and girls to determine the presence of sex differences in correlates of depression, and Fisher's Z was employed to determine if these differences are significant. Linear regression was utilized to test the predictive power of significant correlates. For those correlates that differed between boys and girls, they were included as "sex-by-variable" interaction terms. Each scale score used in both regressions was first converted to a z-score. This conversion was for the purpose of creating interaction terms and facilitating meaningful comparisons of potential predictors.

#### Specific Aim 1

The primary analyses for this aim were Pearson correlation and linear regression. The hypotheses tested were 1) *higher burdensomeness, thwarted belongingness, and interpersonal orientation*, 2) *lower social integration, communalism, and perceived family and friend support*, and 3) *victimization by peers, and/or bullying will predict higher suicidal ideation*.

### Specific Aim 2

Pearson correlations and multiple linear regression were also used for these analyses. The hypotheses tested were 1) *higher burdensomeness, thwarted belongingness, and interpersonal orientation*, 2) *lower social integration, communalism, and perceived family and friend support*, and 3) *victimization by peers, and/or bullying will be associated with, and/or predict higher depression*.

## CHAPTER 6

### RESULTS

#### *Demographic Variance in Key Study Variables*

Table 3 gives the means, standard deviations, ranges, and internal consistency values for each of the study variables. Data are presented for the overall sample and by sex. Scores for the IOS Attention Seeking subscale were significantly different between boys and girls (girls reported significantly higher levels;  $t(68) = 2.2, p < .05$ ).

Additionally, there were significant gender differences for Total Friend Support. Girls reported significantly higher Total Friend Support on the PEPSS ( $t[54.3] = 2.6, p < .05$ ), as well as a significantly higher amount of Talking to Friends ( $t[61] = 3.0, p < .01$ ).

There were no significant differences in Closeness to Friends, Listening to Friends, or Satisfaction with Friends as measured by the PEPSS subscales.

Additional analyses examined differences in the study variables by age, highest level of guardian education in the home, and 1 versus 2 guardians in the home.

Adolescents with one guardian in the home trended toward higher levels of Total Friend Support ( $\bar{x} = 3.1$  vs.  $2.6; t(38.3) = 2.0, p < .06$ ) and higher levels of Listening to Friends ( $\bar{x} = 3.1$  vs.  $2.6; t(38.3) = 2.0, p < .06$ ). There was no difference for Satisfaction with Friends, Talking to Friends, or Closeness. No other significant differences were found for number of guardians in the home. Age was significantly correlated only with Talking to Friends ( $r = .29, p < .01$ ), and Listening to Friends ( $r = .27, p < .01$ ). No other study



variables were correlated with age. Highest amount of guardian education in the home was not significantly related to any of the study variables.

*Specific Aim 1: Ecological Indicators of Depression*

Pearson Correlation revealed several correlates of depression in the sample.

Table 4 presents a correlation matrix—divided by sex—for the study’s primary variables of interest. Table 5 presents the correlation matrix for the overall sample. In the sample at large, depression scores were correlated with the following: IOS Total scores ( $r = .26, p < .05$ ), IOS Social Comparison scores ( $r = .26, p < .05$ ), burdensomeness ( $r = .66, p < .001$ ), belongingness ( $r = -.27, p < .05$ ), perceived family support ( $r = -.49, p < .001$ ), victimization ( $r = .42, p < .001$ ), and bullying ( $r = .57, p < .001$ ).

Girls’ depression scores were correlated with burdensomeness ( $r = .74, p < .001$ ), belongingness ( $r = -.43, p < .05$ ), family support ( $r = -.54, p < .01$ ), and victimization ( $r = .52, p < .01$ ), as well as suicidal ideation ( $r = .70, p < .001$ ). Boys’ depression scores were correlated with IOS Positive Stimulation ( $r = .34, p < .05$ ), burdensomeness ( $r = .63, p < .001$ ), family support ( $r = -.47, p < .01$ ), and bullying ( $r = .44, p < .01$ ). Fisher’s Z test was applied to test the significance of the differences in correlation magnitude between girls and boys when a correlation was significant for both. For the correlation between perceived family support and depression, the z-test was significant ( $z = 2.98, p < .01$ ). The z-test for the burdensomeness/depression correlation was not significant. These data show that the magnitude of the correlation between family support and depression is greater for girls than for boys.

Stepwise linear regression was used to determine the predictors of depression for adolescents in this study. The univariate correlates of depression were included in the

first step: IOS total score, burdensomeness, belongingness, family support, bullying, victimization, and sex. Despite having a strong zero-order correlation with depression, suicidal ideation was excluded from this model as, conceptually, the relationship between these variables would be such that depression would predict levels of suicidal ideation instead of vice versa. The model tested at this first step was found to be significant overall [ $F(7, 60) = 9.1, p < .001$ ], accounting for 48.6% of the variance in depression scores. Within the model, however, only burdensomeness ( $\beta = .53, p < .001$ ), and family support ( $\beta = -.30, p < .05$ ) were significant predictors.

At the second step, the “sex-by-variable” interaction terms were added. This model was significant overall [ $F(13, 60) = 5.47, p < .001$ ], and accounted for 49.2% of the variance in depression scores. There were, however, no significant individual predictors in the second model. Therefore, another stepwise regression with only sex, family support, and burdensomeness as the independent variables in the first step, and with the interaction terms added in the second step was conducted. It was found that burdensomeness and perceived family support alone were significant predictors ( $\beta = .56, p < .001$ , and  $\beta = -.31, p < .01$ , respectively), and the overall model accounted for 49.8% of the variance in depression scores. The model, including the interaction terms, accounted for 49.5% of the variance. Although the overall model was significant [ $F(5, 63) = 13.38, p < .001$ ], none of the predictors in this model (sex, perceived family support, perceived burdensomeness, and the interaction terms) were individually significant, indicating that the strongest model for predicting depression among the Black adolescents in this study includes only burdensomeness and perceived support from the family.

*Specific Aim 2: Ecological Indicators of Suicidal Ideation*

Perceived burdensomeness ( $r = .87, p < .001$ ), and either being a bully ( $r = .29, p < .01$ ) or a victim of bullying ( $r = .29, p < .01$ ), as well as depression ( $r = .52, p < .001$ ) were all positively correlated with suicidal ideation severity. For girls in the sample, suicidal ideation was correlated with burdensomeness ( $r = .95, p < .001$ ), belongingness ( $r = -.40, p < .05$ ), being a victim ( $r = .73, p < .001$ ) or a bully ( $r = .69, p < .001$ ) and depression ( $r = .70, p < .001$ ). For boys, burdensomeness ( $r = .54, p < .001$ ), and being a bully ( $r = .40, p < .05$ ) were correlated with suicidal ideation, but none of the other associations were significant. As before, Fisher's  $z$  was employed to determine differences in magnitude of correlation for those correlations that were significant for both boys and girls. The correlation between burdensomeness and suicidal ideation was significantly stronger for girls than for boys ( $z = 4.01, p < .001$ ). The difference in the bullying/suicidal ideation correlation magnitude, however, was nonsignificant.

Linear regression was used to develop a model to predict suicidal ideation based on variables found to differ between adolescents who reported ideation and those who did not. The model tested regressed burdensomeness, belongingness, victimization, and bullying, as well as depression on suicidal ideation in the first step. At the second step, gender and interactions between these variables and gender were added to determine the moderating effect of sex on predictors of suicidal ideation.

The first model, testing the main effects of the variables given above, was significant [ $F(56, 60) = 49.7, p < .001$ ]. This model accounted for 80.2% of the variance in suicidal ideation levels. Within the first model, being victimized ( $\beta = .42, p < .001$ ), and burdensomeness ( $\beta = .77, p < .001$ ) were significant predictors of suicidal ideation.

Depression, bullying and belongingness were non-significant. At the second step, the model remained significant [ $F(11, 60) = 27.0, p < .001$ ], accounting for 82.6% of the variance in suicidal ideation. Within this larger model, burdensomeness remained a significant predictor ( $\beta = 1.3, p < .001$ ), and the sex-by-burdensomeness interaction term was significant ( $\beta = -.53, p < .05$ ). Being victimized was no longer significant.

To further explore the sex-by-burdensomeness interaction, a scatterplot was generated that included regression lines for both boys and girls. Figure 1 presents that graph. Individual linear regressions from boys and girls testing burdensomeness on suicidal ideation showed that burdensomeness was a stronger predictor of suicidal ideation for girls ( $\beta = .95, p < .001$ ) than for boys ( $\beta = .65, p < .001$ ).

### *Theoretical Explorations*

As it was the goal of this study to examine depression and suicidal ideation from an ecological standpoint, and as each of the individual predictors captured only one particular theoretical construct within the microsystem of the adolescent (e.g. support from friends or support from family, but not both), several new variables were created from study measures, to capture aspects of adolescent functioning at the microsystem level. Three variable of theoretical interest were thus generated; microsystem adaptive functioning, microsystem dysfunction, and microsystem resources.

“Microsystem Positive Functioning” is a sum of the z-scores for interpersonal orientation, belongingness, friend support, and family support. Thus a more positive value for this measure would indicate a generally higher level of functioning across these different domains. “Microsystem Dysfunction” is a sum of the z-scores for burdensomeness, victimization, and bullying. “Interpersonal Resources” is the sum of

the social network/integration z-score and the product of the number of friends listed on the PEPSS and the number of guardians in the home. These three variables, in essence, capture the net positive aspects of the individual's microsystem, the net problems within that system, and the level of available interpersonal resources.

Table 6 gives the means, standard deviations and ranges for these three variables. Additionally, internal consistency was determined for the Positive Function and Dysfunction variables. Interpersonal Resources was excluded from internal consistency analyses because there is little theoretical reason to suspect that the items will correlate significantly (number of guardians in the home, for example, is not expected to be associated with extracurricular group membership). Cronbach's alpha for Positive Function was .72 and, for Dysfunction, was .96; indicating a strong degree of correlation between items across the scales utilized to create these indexes.

There was no significant difference between boys and girls on any of these three domains. Pearson correlation found that only Microsystem Dysfunction correlated with depression ( $r = .55, p < .001$ ) and suicidal ideation ( $r = .81, p < .001$ ). Microsystem Positive Functioning, however, was positively correlated with Communalism scores ( $r = .56, p < .001$ ); indicating that adaptive functioning within the microsystem is associated with a greater sense of attachment to the community at large. These findings were the same for both girls and boys.

Linear regression was again utilized to test the predictive strength of each of these variables on depression and suicidal ideation. For each regression, Positive Functioning, Dysfunction and Interpersonal Resources were entered at the first step and Communalism was entered at the second step (to represent the contribution of the exosystem to the

overall functioning of the individual). It was found that Microsystem Dysfunction was the lone significant predictor of depression ( $\beta = .51, p < .001$ ) while controlling for Positive Function, Interpersonal Resources, and Communalism. A regression model containing just Microsystem Dysfunction by itself was found to be significant ( $F [1, 45] = 16.82, p < .001$ ) and account for 26.0% of the variance in depression scores. This is compared to the full model which was also significant ( $F [4, 45] = 4.44, p < .01$ ) but only accounted for 23.4% of the variance in depression scores.

Similarly, Microsystem Dysfunction was the only significant predictor of suicidal ideation ( $\beta = .85, p < .001$ ), while controlling for Positive Functioning, Interpersonal Resources, and Communalism. The model containing all of the variables listed was significant ( $F [4, 45] = 22.54, p < .001$ ) and accounted for 65.7% of variance in suicidal ideation, however a regression model containing only Microsystem Dysfunction was also significant ( $F [1, 45] = 91.64, p < .001$ ) and accounted for 66.8% of the variance in suicidal ideation. This indicates that, regardless of the connection to a larger community, access to interpersonal resources (i.e. friends and family), and positive interactions with other individuals, the strongest predictor of psychological malady among Black adolescents is dysfunction within their social circle (i.e. being a burden on, rejection by, and/or rejection of peers).

### *Review of Study Findings*

Briefly, the results from this study are summarized below:

- Higher perceived burdensomeness predicted greater suicidal ideation both directly and interactively with gender—the strength of the relationship between

burdensomeness and suicidal ideation was stronger for girls than boys—even while controlling for depression, victimization of peers, and bullying by peers.

- Perceived burdensomeness and family support predicted depressive symptoms in the directions expected (greater perceived burdensomeness and lower family support predicted higher depression scores). Interactions with gender were non-significant, indicating similar patterns for both boys and girls.
- Global level of dysfunction within the adolescent's microsystem was the only significant predictor of depression and suicidal ideation for both boys and girls, even while accounting for level of adaptive function within the microsystem (i.e. the child's level of belongingness, family support, friend support, and interpersonal orientation), access to interpersonal resources (i.e. connectedness to a sufficient social network, several friends, two-guardian home), and level of connectedness to a larger community.

Contrary to the hypotheses, none of the other study variables (belongingness, interpersonal orientation, social integration, friend support, victimization by peers, bullying behaviors, and communalism) were found to be significant predictors of depression or suicidal ideation within this sample.

## CHAPTER 7

### DISCUSSION

This is the first empirical study to the author's knowledge that closely examines the relative contribution of different types of social and interpersonal relationships/interactions to suicidal and depressive thinking among Black adolescents. Specifically, it is the first to use variables of such variety in nuance. In essence, the study attempted to capture as full a picture as possible of the adolescent's perception of their relationships (e.g. perceived family support), the adolescent's actual social network size and level of interaction with that network (i.e. social integration), the adolescent's perceptions of the importance and/utility of these relationships (i.e. interpersonal orientation), and the adolescent's understandings of how others in the network perceived that relationship (i.e. burdensomeness). It was the goal of the author to utilize this multi-directional understanding of Black adolescent interpersonal interactions to develop a model that included both positive and negative aspects of the adolescent's functioning socially and interpersonally, and would be a strong predictor of depressive and suicidal ideation.

#### Predictors of Depression

It was hypothesized that perceived family support would be a predictor of lower levels of depression among Black adolescents, and the data bore that finding out. That perceived family support was a significant predictor of depression coincides with previous research (e.g., Field et al., 2001; Harris & Molock, 2000; Jung & Khalsa, 1989),



and further underscores the importance of family dynamics in adolescence. Of note, however, is that the perception of being supported by the family was a significant predictor of depression, but the makeup of the family—i.e., the number of guardians in the home—was not related. This suggests that the adolescent's qualitative appraisal of his/her familial setting is more important to functioning than the quantitative makeup of it. In addition, neither the adolescent's reported number of friends nor the amount of time spent interacting with peers outside of the family were related to depression, further suggesting that perception of the environment is more significant to the adolescent than the actual engagement with it or the availability of individuals within the microsystem.

Somewhat contrary to the idea that perceptions about interpersonal relationships affect levels of depressive thinking, however, is that perceived friend support was not associated with depression, even at the level of the zero-order correlation. While previous studies have noted that peer support may not a significant predictor of depression by itself, research has shown that parental support moderates the relationship between peer support and depression (Young et al., 2005); for adolescents with high parental support, high peer support is associated with lower depression. The converse is true for adolescents with low parental support. It is possible that more in-depth and specific analysis of the relationship, not just between support and depression, but the different types of support would yield similar findings among Black adolescents. Also to be considered is the general way in which social support was measured in this study. While the adolescent was asked to rate their general perception of how supported they were in a number of different ways (how often they talk to friends about problems, how satisfied they are with support, etc.), the questions did not address the different categories

of social support: instrumental, emotional, appraisal, and informational (House, 1981). It is possible that examination of the different types of social support will reveal that certain kinds of support are associated with decreased depression even though the general perception of being supported was not.

Furthermore, it was expected that perceived burdensomeness would predict greater levels of depression. Burdensomeness has previously not been examined as a predictor of depression; however, given its empirically supported association with suicide and suicidal behaviors (Joiner, 2002), it follows that it would predict other indices of psychological disturbance. As with family support, this construct is based in the adolescent's perception of his or her relationship with the individuals in his/her microsystem, and does not actually reflect the level to which the adolescent is regarded as a burden by that microsystem. Unlike with perceived family support, this study did not contain any measures (proxy or direct) of how others perceived the adolescent as a burden or not, thus the question of whether the perception is sufficient to produce depressive symptoms or whether the perception must be in conjunction with some actual communication from the surrounding environment to sponsor or confirm the perception remains unanswerable by these data.

However, given that the two study variables that predicted depression were both cognitive in nature (relating to perception), and while strongly and negatively correlated with each other, predicted depression in tandem, this offers interesting implications for understanding depressive cognitive processes among Black adolescents. It would seem, based on these findings, that the perception of one's self as supported and the perception of one's self as a burden are entirely separate cognitive schemas. Thus the adolescent

may feel support from his/her family, and at the same time still feel that he or she is a burden on the family; possibly even because of the support that the adolescent receives. Therefore cognitive intervention that targets an adolescent's perception that he or she is unloved or unsupported would need to attend to that adolescent's understanding that the receiving of support does not qualify him/her as a burden as well.

Recently published findings from the Treatment of Adolescents with Depression Study (TADS) indicate that Black and Latino adolescents reported fewer negative cognitive biases than White adolescents, but that negative cognitive biases are significant predictors of depression for all groups (Stein et al., 2010). It would stand to reason then that interventions that can effectively target the narrower range of cognitive distortions among Black adolescents could maximize efficacy without adding considerably to the burden on the therapist. Given that perceived burdensomeness and perceived family support are related cognitive appraisals of the adolescent's relationship to objects within the microsystem and could be easily addressed simultaneously, they present themselves as unique and significant areas of potential intervention.

#### Predictors of Suicidal Ideation

The study's hypotheses also included the expectation that perceived burdensomeness would be a significant predictor of suicidal ideation. The findings proved to be the case, in line with previous work (Merchant et al., 2009) indicating that interpersonal variables—perceived burdensomeness in this case and interpersonal orientation in the previous—were the lone predictors of suicidal thoughts/behaviors, even while accounting for depression. It is relevant to this discussion to note that zero-order correlations between suicidal ideation and bullying, victimization by peers, and

depression were all significant. Their partialled-out effects, however, were not significant. This would mean that, for Black teenagers, certain events and interactions are critical in the formation of suicidal thoughts, but at the core, it is the perception that one is a burden on loved ones that contributes the most to this problem.

This inference is also supported by other research that demonstrates the significance of interpersonal variables, above and beyond psychopathology, as predictors of suicidal thoughts (R. A. King et al., 2001; O'Donnell et al., 2003; Summerville et al., 1996). These findings do run somewhat contrary to another ecological study of suicidal thinking and behaviors among Black adolescents (Perkins & Hartless, 2002), which found that individual level factors (e.g. drug use, alcohol abuse, and hopelessness) were stronger predictors of suicidal thoughts than contextual risk factors (family support, number of friends, and school climate). This discrepancy may be explained by the previous studies usage of fewer variables related to social connectedness. The current study examined a greater variety of interpersonal interaction types and a broader array of ways of regarding one's own social context, allowing for a more nuanced examination of interpersonal factors.

Additionally, the fact that burdensomeness alone emerged as a predictor of suicidal ideation serves to extend Thomas Joiner's (2005) theory of suicide outside of a White American adult context. Theoretical examinations of the theory have established its vitality as a predictor of suicidal thoughts and behaviors (Van Orden et al., 2010), and previous research has validated perceived burdensomeness as a predictor of suicidal thinking in adults (van Orden, Lynam, Hollar, & Joiner, 2006) even while controlling for depression (Joiner et al., 2009). A focus on problematic appraisals of one's relation to

other members of a social network appears to be a necessary aspect of determining risk for suicidal thinking in Black adolescents as well. It is of interest that belongingness, another aspect of Joiner's theory, was not a significant predictor of suicidal ideation, and was not even correlated with it. While this might indicate that a deficit model of understanding depression in Black adolescents is warranted, it may also indicate a more complex association between belongingness and suicidal ideation. Recent research has indicated that belongingness and burdensomeness actually have an interactive effect on suicidal thinking (Van Orden et al., 2010).

Furthermore, it was found that the relationship between perceived burdensomeness and suicidal ideation was significantly stronger for girls than it was for boys. And while it was not significant in the regression model, belongingness shared a strong negative correlation with suicidal ideation among girls, but not among the boys. These results are consistent with previous research that points out differences between boys and girls in the significance of social and interpersonal predictors of suicidal thinking (Bearman & Moody, 2004). This research continues to support the understanding that the development of suicidal thinking for girls is more motivated by interpersonal factors than it is for boys, and accents the importance of attending to differences in the pathways to suicidal thinking among Black adolescents.

Finally, as this was an ecological study, several indices of functioning at the microsystem level were tested along with an exosystem measure (Communalism) as predictors of depression and suicidal ideation. Interestingly, it was only dysfunction at the microsystem level that was predictive of depression and suicidal ideation, even while controlling for adaptive function, interpersonal resources, and connection to the

community. This finding indicates that, for Black adolescents, the presence of objects within the network (i.e. parents and friends), positive interactions with them (e.g. belongingness, family support), and connections to the community at large are not as significant as disruptions within the friend and family relationships in terms of affecting levels of depression. This is in accord with previous research that suggests that Black adolescents are particularly susceptible to relational strains in terms of development of suicidal behaviors (Maris, 1969; Watt & Sharp, 2002). Ultimately, the findings from this study support a model of Black adolescent depression and suicidal thinking that focuses primarily on problems within the adolescent's social circle.

### *Limitations*

As with any study, there are several limitations that must be addressed in order to properly contextualize the findings. They are presented as follows:

#### Study design limitations

This study has a cross-sectional study design; thus the author must infer that the relationships are in the direction that is expected, but cannot make this assertion definitively. It is possible that suicidal ideation and depression are in fact causing increases in perceived burdensomeness. A depressed adolescent is going to present with more negative cognitions and ruminations and this may be increasing his or her sense of being a burden on their loved ones. Similarly, an adolescent who is suicidal might require more attention from parents and friends in order to maintain his or her safety. This could also lead to an increase in perceived burdensomeness. In order to properly determine whether the variables are true predictors of suicidal ideation and depression, a longitudinal study design would need to be employed to determine if variations in

depression and/or suicide ideation levels over time are predicted by levels of burdensomeness.

#### Study sample limitations

Although it has been referred to as a “community” sample in this study, in many ways, participants recruited from a hospital setting are potentially very different from those recruited directly from community centers, schools, or out of the home. It is possible that the stress of being in the emergency department elevated the adolescents’ feelings of depression or suicidality. Similarly, being in a setting such as the emergency room in which the parent or guardian present is actively worried about and caring for the adolescent may have skewed their perceptions of support and/or burdensomeness.

Replication of this study utilizing a sample recruited from outside of a hospital setting is warranted to address these issues.

Furthermore, despite doing an ad hoc power analysis to determine a minimal number of participants needed to detect an effect, the sample size is still somewhat limiting and may not be fully representative. A much larger sample would allow for comparisons between individuals of different SES levels, community-level analyses, and offer generally greater statistical power, and generalizability.

#### Study measures limitations

Regarding the level of suicidal ideation in this sample, it was highly positively skewed and leptokurtotic. While this is expected of a community sample, it does mean that very little can be said about adolescents experiencing acute or severe suicidality.

Use of a clinical sample as a comparison group would offer a better picture of ecological differences along the spectrum of Black adolescent psychological functioning.

Finally, the full range of ecological levels could not be examined in this study. To offer a better picture of the adolescent's functioning, mesosystem variables (e.g. parental conflict), macrosystem variables (e.g. cultural identity), and chronosystem-level examination (i.e. a longitudinal design), along with the addition of more individual-level variables (e.g. alcohol use, other psychopathology) would offer considerably to the understanding of ecological functioning. Additionally, utilizing both parent and adolescent-report measures would provide a more complete picture of adolescent functioning, and examine the interpersonal relationships at a much more nuanced level. Also, interactions between different variables at different ecological levels could be tested to determine a more structural model of risk. These interactions were not tested in this present study due to power concerns and the limitations of a cross-sectional design.

Given these, a future study would optimally employ a longitudinal design, a clinical comparison group, and a deeper evaluation of the adolescent's ecological circles. For example, in this study, number of guardians in the home was used as a general indicator of the number of individuals that were available as a network to the adolescent, but this excluded the value of fictive kin, extended families and non-traditional households. A deeper examination of the number of objects in the adolescent's microsystem would give a much richer picture of this network. Additionally, examination of more of the ecological levels (e.g., the adolescent's cultural identity) would allow the examiner to make better generalizations about how different types of ecological connectedness influence the adolescent's development and a more complete model of suicide and depression risk could be tested. Nevertheless, Black adolescents are



a traditionally understudied population, and these findings add significantly to the scientific literature.

### Conclusion

It was the goal of this study to examine ecological predictors of depression and suicidal thinking among a community sample of Black adolescents. The findings contribute to the limited empirical work among Black youth and offer future avenues for both research and clinical intervention models. It also further emphasizes the importance of assessing both the adolescent's interpersonal interactions and the adolescent's perceptions of him or herself in relation to objects within his/her social sphere when conceptualizing the problems of and subsequent solutions to Black youth emotional distress

Table 1:

CDC Report of Suicide Rates in America by Race in 2007: Ages 10 to 19 years

Race	Number of Deaths	Population	Crude Rate	Age-Adjusted Rate*
White	1,357	32,388,970	4.19	4.08
Black	184	6,873,081	2.68	2.62
Am Indian/AK Native	60	583,487	10.28	9.90
Asian/Pac Islander	60	1,891,984	3.17	3.16
Total	1,661	41,737,522	3.98	

*Note:* \*Standard population is 2000, all races

Table 2

## Demographic Characteristics of the Total Sample and Gender Groups

	GIRLS n = 26 37%	BOYS n = 44 63%	TOTAL N = 70 100%
Age (years; mean (SD))	15.5 (1.3)	15.3 (1.5)	15.4 (1.4)
Race (%)			
Black (non-Hispanic)	88.5	90.7	89.9
Black (Hispanic)	0.0	4.7	2.9
Other	11.5	4.7	7.2
Respondent Guardian's Education Level (%)*			
Graduate or professional school	11.5	11.4	11.4
College degree	11.5	13.6	12.9
Some college	38.5	45.5	42.9
High School degree	19.2	20.5	20.0
<High School graduate	15.4	9.1	11.4
Don't know	3.8	0.0	1.4
Other Guardian's Education Level (%)**			
Graduate or professional school	4.0	5.3	4.8
College degree	4.0	13.2	9.5
Some college	24.0	39.5	33.3
High School degree	20.0	18.4	19.0
<High School graduate	8.0	2.6	4.8
No School	0.0	2.6	1.6

	GIRLS	BOYS	TOTAL
Not applicable	40.0	18.4	27.0
Grade level (median)	10	9	10
2 parents in home (% yes)	60.0 <sup>+</sup>	81.6	73.0

*Note:* \*"Respondent Guardian" is the guardian who completed the form. \*\*"Other Guardian" is any other guardian living in the household. No significant differences were found for the demographic variables between boys and girls; <sup>+</sup> = difference trends toward significance,  $\chi^2 (1) = 3.6, p = .06$ .

Table 3

## Means, Standard Deviations, and Psychometrics of Adolescent Psychological and Psychosocial Functioning Variables

	Girls			Boys			Overall		
	Mean (SD)	Range*		Mean (SD)	Range		Mean (SD)	Range	Cronbach's
SIQ-Jr.	7.57 (16.80)	0-53		4.96 (7.49)	0-36		5.96 (11.89)	0-53	.94
RADS-2	53.77 (15.51)	31-93		51.52 (13.15)	32-83		52.39 (14.04)	31-93	.91
AUDIT	.36 (1.00)	0-4		.37 (1.10)	0-6		.37 (1.05)	0-6	.65
IOS	82.58 (17.75)	46-114		74.66 (20.15)	31-111		77.60 (19.55)	31-114	.92
Emotional Support	18.77 (4.37)	10-25		17.66 (5.23)	9-28		18.07 (4.92)	9-28	.70
Attention	20.31 (6.31)**	8-29		16.91 (6.29)	4-30		18.17 (6.47)	4-30	.85
Positive Stimulation	28.50 (7.40)	15-41		25.43 (7.91)	9-41		26.57 (7.81)	9-41	.86
Social Comparison	15.00 (3.96)	9-24		14.66 (4.17)	5-24		14.79 (4.06)	5-24	.70
INQ Burdensomeness	11.96 (9.72)	7-40		9.67 (4.56)	7-25		10.54 (6.98)	7-40	.92
INQ Belongingness	30.96 (3.92)	21-35		29.65 (5.78)	15-35		30.14 (5.17)	15-35	.73
DSSI	17.58 (3.75)	9-24		16.91 (4.26)	8-24		17.16 (4.06)	8-24	.55

	Girls		Boys		Overall		
PEQ Victim	4.24 (8.89)	0-43	2.54 (3.42)	0-12	3.18 (6.09)	0-43	.95
PEQ Bully	3.40 (8.48)	0-43	2.82 (3.52)	0-14	3.05 (5.94)	0-43	.95
PEPSS Average	3.11 (.83)**	1-4	2.45 (1.11)	.33-4	2.67 (1.06)	.33-4	.90
Talking to friends	2.95 (.98)**	1-4	2.37 (1.01)	.67-4	2.60 (1.03)	.67-4	.70
Closeness to friends	3.35 (.88)	1-4	2.90 (1.15)	1-4	3.07 (1.07)	1-4	.91
Listening to friends	2.95 (.91)	1-4	2.49 (1.11)	.67-4	2.67 (1.06)	.67-4	.77
Satisfaction with friends	3.18 (.89)	1-4	2.68 (1.09)	.67-4	2.86 (1.05)	.67-4	.87
PSS-Fa	12.88 (4.53)	2-19	12.48 (4.52)	2-19	12.63 (4.49)	2-19	.78
SOQ	134.05 (20.93)	80-170	123.83 (27.67)	50-164	127.43 (25.77)	50-170	.90

*Notes:* \* “Range” refers to the range of the values in the sample, *not* the possible range of the scale itself; \*\* = difference between girls and boys is significant  $p < .05$ .

Table 4

## Correlation Matrix for Key Study Variables by Sex

	1	2	3	4	5	6	7	8	9	10	11	12
1. SIQ-Jr	-	0.27	0.07	-0.16	0.65 <sup>**</sup>	0.00	-0.21	0.21	0.40 <sup>*</sup>	-0.15	-0.11	0.17
2. RADS-2	0.70 <sup>**</sup>	-	0.04	0.30	0.63 <sup>**</sup>	-0.20	-0.09	0.28	0.44 <sup>**</sup>	-0.47 <sup>**</sup>	0.04	0.08
3. AUDIT	-0.02	0.15	-	-0.02	0.07	0.21	0.16	-0.07	-0.09	-0.18	0.20	-0.27
4. IOS Total	0.36	0.19	-0.21	-	0.05	0.28	0.14	0.17	0.12	0.07	0.45 <sup>**</sup>	0.50 <sup>**</sup>
5. INQ Burdensome	0.95 <sup>**</sup>	0.74 <sup>**</sup>	-0.01	0.42 <sup>*</sup>	-	-0.16	-0.07	0.06	0.44 <sup>**</sup>	-0.44 <sup>**</sup>	0.04	0.02
6. INQ Belongingness	-0.40 <sup>*</sup>	-0.43 <sup>*</sup>	-0.14	0.04	-0.31	-	0.32 <sup>*</sup>	-0.13	-0.31	0.38 <sup>*</sup>	0.33 <sup>*</sup>	0.23
7. DSSI	-0.23	-0.24	0.22	0.12	-0.23	0.44 <sup>*</sup>	-	-0.05	-0.02	0.07	0.36 <sup>*</sup>	-0.04
8. PSS-Fa	0.73 <sup>**</sup>	0.52 <sup>**</sup>	-0.05	0.18	0.65 <sup>**</sup>	-0.64 <sup>**</sup>	-0.20	-	0.62 <sup>**</sup>	-0.07	0.05	0.24
9. PEQ Victim	0.69 <sup>**</sup>	0.39	-0.06	0.12	0.62 <sup>**</sup>	-0.52 <sup>**</sup>	-0.16	0.93 <sup>**</sup>	-	-0.34 <sup>*</sup>	0.05	-0.08
10. PEQ Bully	-0.34	-0.54 <sup>**</sup>	0.09	-0.19	-0.33	0.56 <sup>**</sup>	0.36	-0.34	-0.23	-	0.11	0.41 <sup>*</sup>
11. PEPSS Total	-0.34	-0.08	0.12	0.04	-0.27	0.46 <sup>*</sup>	0.54 <sup>**</sup>	-0.39	-0.49 <sup>*</sup>	0.01	-	0.27
12. SOQ	-0.18	-0.26	-0.07	0.10	-0.12	0.32	0.14	-0.04	-0.06	0.71 <sup>**</sup>	0.05	-

Notes: \* =  $p < .05$ ; \*\* =  $p < .01$ ; correlations above the diagonal are for boys, below for girls.

Table 5

## Correlation Matrix for Key Study Variables: Overall Sample

	1	2	3	4	5	6	7	8	9	10	11
1. SIQ-Jr	-										
2. RADS-2	0.52 <sup>**</sup>	-									
3. AUDIT	0.01	0.08	-								
4. IOS Total	0.13	0.26 <sup>*</sup>	-0.09	-							
5. INQ Burdensome	0.87 <sup>**</sup>	0.66 <sup>**</sup>	0.03	0.25 <sup>*</sup>	-						
6. INQ Belongingness	-0.15	-0.27 <sup>*</sup>	0.10	0.23	-0.17	-					
7. DSSI	-0.19	-0.14	0.18	0.15	-0.13	0.36 <sup>**</sup>	-				
8. PSS-Fa	0.63 <sup>**</sup>	0.42 <sup>**</sup>	-0.05	0.17	0.51 <sup>**</sup>	-0.30 <sup>*</sup>	-0.11	-			
9. PEQ Victim	0.63 <sup>**</sup>	0.38 <sup>**</sup>	-0.06	0.11	0.57 <sup>**</sup>	-0.34 <sup>**</sup>	-0.09	0.86 <sup>**</sup>	-		
10. PEQ Bully	-0.24	-0.49 <sup>**</sup>	-0.08	-0.01	-0.35 <sup>**</sup>	0.43 <sup>**</sup>	0.17	-0.20	-0.25	-	
11. PEPSS Total	-0.16	0.02	0.17	0.36 <sup>**</sup>	-0.05	0.37 <sup>**</sup>	0.40 <sup>**</sup>	-0.10	-0.18	0.09	-
12. SOQ	0.00	-0.03	-0.23	0.40 <sup>**</sup>	0.00	0.26	0.03	0.10	-0.05	0.49 <sup>**</sup>	0.26

Notes: \* =  $p < .05$ ; \*\* =  $p < .01$



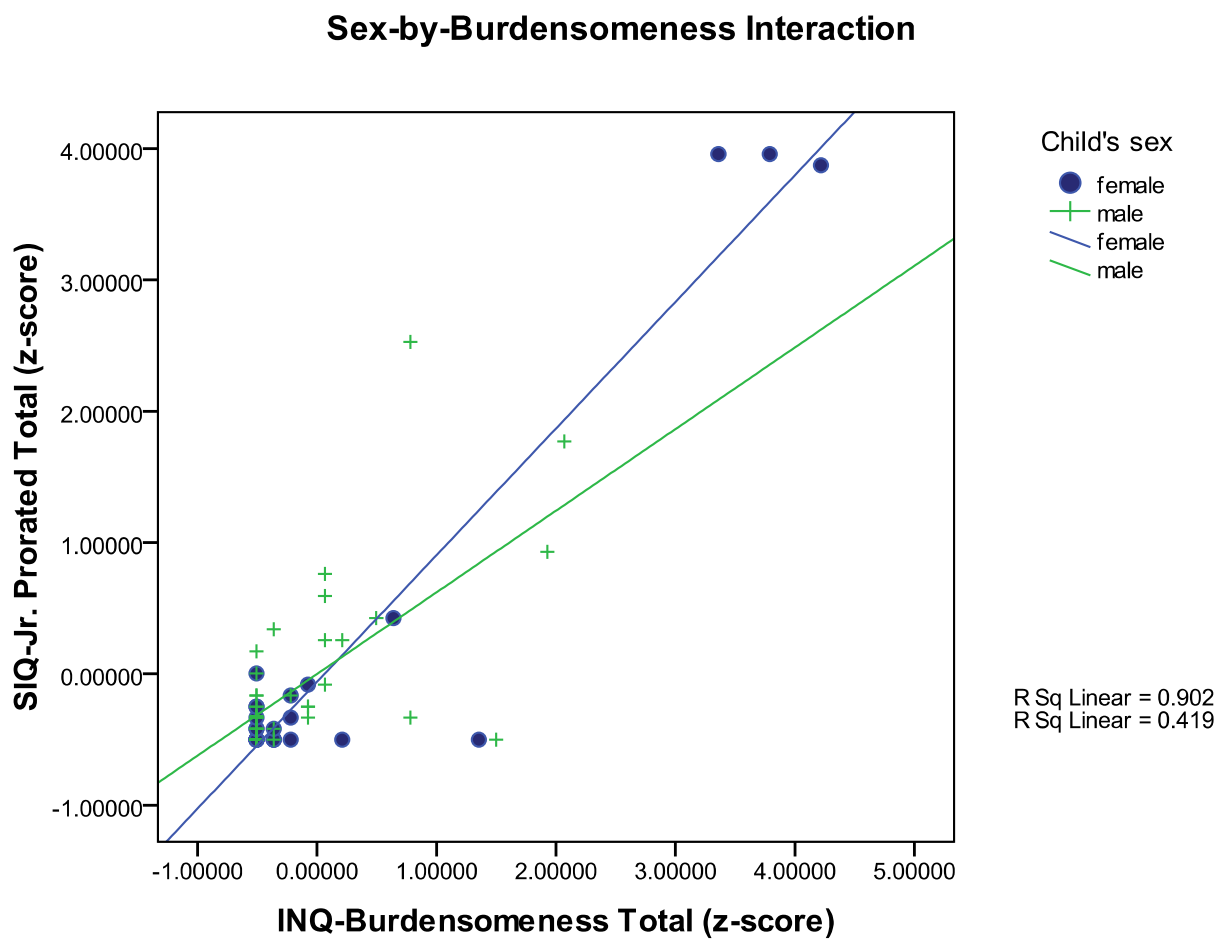
Table 6

Descriptive Statistics for Positive Function, Dysfunction, and Resources.

	Girls			Boys			Overall		
	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range	
Positive Function	.67 (2.04)	-3.20-3.80	-.43 (2.84)	-7.67-4.12	-.04 (2.62)	-7.67-4.12	-.04 (2.62)	-7.67-4.12	
Dysfunction	.31 (3.77)	-1.54 – 17.05	-.26 (1.39)	-1.54-3.40	-.04 (2.60)	-1.54-17.05	-.04 (2.60)	-1.54-17.05	
Available Resources	4.58 (2.05)	.24-7.68	4.89 (2.15)	.48-4.89	4.77 (2.10)	.24-7.68	4.77 (2.10)	.24-7.68	

Figure 1

Sex by Burdensomeness Interactive Prediction of Suicidal Ideation



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