

**Six Year Outcomes of Suicidal Adolescents:
The Role of Sexual Abuse**

by

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Dedication

I would like to dedicate this dissertation to my family who, in each of their own ways, are the very definition of resilience. To my parents who taught me strength and courage – I hope I have made you proud. To my siblings, Cathy, David, and Deirdre, who taught me to go after my dreams, to be true to myself, to try to laugh and carry on even when life gets tough, to stand up for what you believe in, and to always do your best. I will forever be grateful that we were born into the same family. I don't know who or where I would be without your love and support.

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Abstract

Sexual abuse has far reaching consequences and can place an individual at increased risk for mental health disorders, functional and social impairment, and suicide-related behavior, although the mechanisms by which its effects are sustained are not clear. The purpose of this study was to assess the relationship between sexual abuse and suicide-related behaviors, psychopathology, social functioning, and quality of life among young adults who were psychiatrically hospitalized for severe suicidal ideation or a suicide attempt approximately 6 years previously. Study participants were 96 young adults (21-24 years) who were originally participants in an NIMH-funded study, the Youth-Nominated Support Team-II, lead by Cheryl King, Ph.D. Follow-up interviews revealed high levels of current depression, suicidal ideation, a high number of suicide attempts, difficulties with social adjustment and quality of life, and high levels of service utilization across the entire sample. Approximately one-third of the sample had a history of sexual abuse (either at baseline or during the 6 year follow-up period). Participants with sexual abuse histories had significantly higher levels of depression (both at baseline and at follow-up), higher levels of baseline functional impairment, and were more likely to have made a first time suicide attempt during the follow-up period, than those without sexual abuse histories. There were, however, a significant number of sexually abused participants who demonstrated resilient outcomes, an important area for further investigation which may improve intervention development.

Chapter 1: Adolescent Suicide-Related Behaviors

Background

Adolescent and young adult suicide is a tragedy of substantial public health significance, both in the United States and throughout the world. Suicide is the third leading cause of death among adolescents and young adults in the United States. The rate of suicide deaths in the United States from 2000-2006 among adolescents (13-19 years old) was 6.14 per 100,000 (Centers for Disease Control and Prevention, 2010a). In addition to suicide death; suicidal ideation, planning, and attempting are also significant public health problems. According to the Youth Risk Behavior Surveillance (Centers for Disease Control and Prevention, 2010b), 13.8% of high school students had seriously considered attempting suicide in the past year, 10.9% made a plan for how they would attempt suicide, 6.3% attempted suicide, and 1.9% made a suicide attempt that required medical attention (Centers for Disease Control and Prevention, 2010b).

The importance of preventing youth suicide has been highlighted by several recent important public health documents, such as the *Surgeon General's Call to Action to Prevent Suicide* (U. S. Public Health Service, 1999), *Achieving the Promise: Transforming Mental Health Care in America* (President's New Freedom Commission on Mental Health, 2003), and *The National Strategy for Suicide Prevention: Goals and Objectives for Action* (US Public Health Service, 2001).

Definition of Terms

Throughout this paper, the nomenclature originally developed by O'Carroll et al. (1996) and further revised by Silverman et al. (2007) will be employed. Accordingly, *suicidal ideation* is defined as thoughts of killing oneself without regard to intention to act on the thoughts. 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.

Death by suicide refers to a self-inflicted death with either explicit or implicit evidence of intent to die. Taken together, suicidal ideation, suicide attempt, and/or suicide death will be referred to as *suicide-related behaviors*.

Risk Factors for Adolescent Suicide-Related Behaviors

Gender: In the United States, boys are approximately four times more likely to die by suicide than girls (Centers for Disease Control and Prevention, 2010a). However, girls are significantly more likely than boys to have seriously considered attempting suicide (18.7% vs. 10.3%), made a specific plan (13.4% vs. 9.2%), attempted suicide (9.3% vs. 4.6%), and made a medically injurious suicide attempt (2.4% vs. 1.5%) in the previous year. Some have argued that the means that adolescent males and females choose in attempting suicide drive the gender difference in suicide death, with girls predominantly using less lethal means (Moscicki, 1994).

Race/Ethnicity: From 2000-2006, the racial/ethnic rates of suicide deaths among adolescents aged 13-19 years were as follows: African American: 3.71 per 100,000; Asian/Pacific Islander: 4.15 per 100,000; Hispanic 4.61 per 100,000; Caucasian 7.00 per 100,000, and American Indian/Native Alaskan 18.05 per 100,000. Goldston and

colleagues (2008) proposed that the significantly higher rate of suicide deaths among American Indian/Native Alaskan adolescents is related to high rates of alcohol abuse and dependence and limited employment opportunities. Intergenerational trauma (Whitbeck, 2004) and enculturation stress (Yoder, 2006) are also believed to be contributing factors.

There is a strong interplay between gender and race/ethnicity, whereby the ratios of male to female suicide-related behaviors vary greatly across different racial and ethnic groups. Among African American youth, the ratio of male to female suicide deaths is 6.23:1; among Caucasian Americans it is 5.09:1; among Latino Americans it is 4.63:1; among Native Americans it is 3.45:1; and among Asian Americans it is 2.74:1 (Langhinrichsen-Rohling, 2009). There is less of a spread in the ratios across cultures and ethnicities for suicide attempts, with the male to female ratio of suicide attempts among Caucasian Americans being 1:2.26; among Latino Americans 1:2.22; among Asian Americans 1:2.02; among African Americans 1:1.8; and among Native Americans 1:1.58.

Psychiatric Disorders: Psychiatric disorders are common among youth with suicide-related behaviors. With regard to death by suicide, psychological autopsy studies have consistently shown that psychiatric disorders are strongly implicated in suicide deaths. The converging evidence from multiple psychological autopsy studies by Brent et al. (1988, 1994), Shaffer (1974, 1998) and Shaffi (1998) indicate that eighty to ninety percent of adolescents who die by suicide suffer from a significant psychopathology. These studies show that previous suicide ideation and attempt, affective and antisocial disorders, drug and alcohol abuse, family factors such as a history of psychopathology

and suicide-related behaviors, and environmental and social stressors are all important factors in suicide deaths.

The first psychological autopsy study was conducted by Shaffer (1974) with 30 youths aged 12-14 who had died by suicide in England and Wales. Antisocial behavior in the youth was present in 73% of cases, and 70% had an affective/emotional disorder. The author found high rates of family factors such as a history of psychiatric problems, alcohol/drug abuse, and suicide attempt. Only 30% of the youth who died were receiving psychiatric care at the time of the suicide. In a later study by Shaffer and colleagues (1998), 114 youth suicides deaths were examined. Twenty three percent of these youth had made a previous attempt, 25% had a diagnosis of major depression, 32% had a substance use disorder, and 61% had antisocial behavior. Fifty percent of these youth had received mental health services in their lifetime, and 40% had a first or second degree relative who had attempted or died by suicide.

Shafii et al. (1988) compared 20 suicide victims aged 12-19 with 17 matched controls, reporting that the youth who died by suicide had significantly higher rates of suicidal ideation, threat and attempt, exposure to another suicide, antisocial behavior, and frequent drug and alcohol use before their death.

Brent et al. (1988) reported that a diagnosis of bipolar disorder, affective disorder with comorbidity, lack of mental health treatment, higher levels of suicide intent, and the availability of a firearm in the home differentiated those youth who had died by suicide compared to youth who were hospitalized for suicide ideation and/or attempt who did not die. A later study by Brent et al. (1994) focused on family factors reported that among 67 adolescents who had died by suicide, a family history of substance abuse and/or

depression and parent/child discord were related to suicide. When compared to matched living community controls, the adolescents who died by suicide were less likely to live with both biological parents, and were more likely to be exposed to physical abuse and residential instability. Once depression, conduct disorder, and substance abuse in the adolescents were controlled for, however, only family history of depression remained a significant familial risk factor.

Studies investigating risk factors for suicide ideation and attempt (as opposed to suicide death) are much more prevalent in the literature due the higher incidence of ideation and attempt over suicide death. In a large epidemiological study, Foley et al. (2006) examined the psychiatric profiles associated with risk for suicide ideation and attempt among 1,420 individuals aged 9-16 years. Adolescents with depression plus anxiety (especially generalized anxiety disorder), or depression plus a disruptive disorder were at the highest risk for suicide ideation and attempt. Anxiety and substance use disorders were only associated with suicide-related behaviors if they were comorbid with other disorders. Severity of impairment, total symptom load, and poverty were also independently related to an increased risk of suicide-related behaviors.

Gould et al. (1998) investigated the prevalence of psychiatric disorders among 42 youth who had attempted suicide and 67 youth who had experienced suicide ideation only. The authors concluded that mood, anxiety, and substance use disorders had significantly increased the risk of suicide attempt in these youth. Disruptive disorders did not increase the risk for suicide attempt, but were significantly associated with suicide ideation. Furthermore, substance abuse differentiated suicide ideators from attempters, suggesting it plays an important role in escalating from suicidal thoughts to actions.

In a study that looked at correlates of suicide attempts among a larger cohort of suicide ideators, Brezo et al. (2008) collected data over three waves, from age 6 to 24. The authors found that disruptive disorders, history of persistent suicidal thoughts, and sexual abuse were significantly associated with suicide attempts. Among male ideators, disruptive disorders, affective instability, and childhood anxiety made significant contributions to suicide attempts. Among females, the significant contributing factors were childhood disruptiveness/aggression, comorbid Axis-I disorders, and persistent suicidal thoughts.

Prior Suicide Attempt: A prior suicide attempt is one of the strongest predictors of a future suicide attempt and death by suicide. Shaffer et al. (1996) found that a previous suicide attempt conferred a 30-fold increase in death by suicide among boys, and a 3-fold increase among girls. Groholt et al. (1997) reported that between one quarter and one third of youth who die by suicide have made a prior attempt. Youth with multiple suicide attempts are at an even greater risk of future suicide attempts (Miranda, 2008) and ultimately dying by suicide (Hultén, 2001). Youth with a history of multiple suicide attempts versus single suicide attempters display higher levels of psychiatric severity and comorbidity, and higher levels of levels of intent, planning, and perceived lethality related to their suicide attempts (Forman, 2004; Goldston et al., 1999b; Rosenberg et al., 2005).

Additional Risk Factors: A full review of all of the risk factors for adolescent suicide-related behaviors is beyond the scope of this chapter. Sexual abuse as a risk factor will be reviewed in detail in Chapter 3. As outlined by Brent (1999) and Gould (2003) stressful life events such as interpersonal conflict or loss, and legal and

disciplinary problems (especially for youth with conduct disorder and substance abuse), are common precipitants for suicide-related behaviors. Research with youths in juvenile justice settings have reported that 30-70% of youth in these settings have at least one diagnosable mental health disorder (Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Wasserman, McReynolds, Lucas, Fisher, & Santos, 2002). Being gay or bisexual (Foley, 2006; Gould et al., 1998), experiencing traumatic events such as physical abuse (Brent et al., 1993), sexual abuse (see Chapter 3 for a full review of this literature), exposure to a peer suicide (Gould et al., 1994), and bullying (Kaltiala-Heino et al., 1999), have also been found to be related to adolescent suicide-related behaviors.

Outcomes of Suicidal Adolescents

Suicide-related behaviors appear to be a chronic problem for a significant number of adolescents. Using the National Comorbidity Survey, Borges et al. (2008), investigated the association of baseline sociodemographic information; suicidal ideation, plans, and attempts; and lifetime mental health disorders to subsequent first onset (i.e. experiencing suicidal ideation or making a suicide attempt for the first time) and persistence of suicide-related behaviors over a 10 year period among over 5,000 youth. Participants were asked at both time-points if they had ever seriously considered suicide; if they had ever made a plan for suicide; and if they had ever attempted suicide. New onsets of suicide-related outcomes included 6.2% of the sample experiencing new-onset suicide ideation, 2.3% making a new suicide plan, and .9% making a new-onset suicide attempt. The only significant predictor of a suicide attempt at the 10 year follow-up was a history of a suicide attempt at baseline. Almost all mental health disorders measured at baseline

(mood disorders, anxiety disorders, substance use disorders, and impulse-control disorders) predicted suicidal ideation at follow-up, even after controlling for baseline sociodemographic factors and suicide related outcomes, but none significantly predicted a suicide attempt. A suicide plan at baseline was predictive of a subsequent suicide plan, but not a suicide attempt. Over one-third of those who endorsed a history of suicide ideation at baseline continued to experience suicide ideation during the follow-up period, suggesting a chronic pattern of suicidal thoughts for these individuals. Suicide planning persisted for 21.2% and suicide attempts persisted for 15.4% of those who reported these suicide-related behaviors at baseline.

A higher rate of persistence of suicide attempts was reported by Groholt and Ekeberg (2009), where a 9 year follow-up of 71 adolescents admitted to a general hospital in Norway for a suicide attempt revealed that 44% percent of the sample made another suicide attempt. The recruitment method may have played a role in this higher number, given that the youth were recruited after admission to the hospital, indicating that they had made a medically injurious index suicide attempt (i.e., attempt that precipitated their hospitalization and participation in the study), whereas the Borges et al. (2008) study was conducted with a nationally representative, non-clinical sample.

In one of the few studies to report suicide deaths as an outcome, Kotila (1992) conducted a 5 year follow-up of 422 adolescent suicide attempters who were admitted to a hospital in Helsinki. Of the suicide attempts, 120 were made by boys (5 of which were repetitions) and 302 were made by girls (55 of which were repetitions). At the end of the follow-up period, 5 of the males (4.2%) and 3 of the females (.99%) had died by suicide. Two males had also died by homicide and 3 males had died in accidents with ambiguous

circumstances (drowning, road accident, and alcohol intoxication). The mean annual mortality rate among these adolescent suicide attempters was 723 per 100,000, which was 20 times the average mortality for suicide and violent death among individuals of the same age in Finland during the same time period.

There is a growing interest in studying the outcomes of youth who have been psychiatrically hospitalized (who may or may not have histories of suicide-related behaviors) in order to identify predictors of suicide risk after discharge (Brent et al., 1993; Goldston et al., 1999a; King et al., 1995; Prinstein et al., 2008). This literature is highly relevant to the present study as the participants were recruited while psychiatrically hospitalized and then reassessed approximately 5 years later.

In a five year longitudinal study, Goldston et al. (1999a) followed 180 psychiatrically hospitalized adolescents after their discharge. At baseline, 58.3% of participants had no suicide attempt history, 22.8% had attempted suicide once, 11.7% had attempted suicide twice, and 7.2% had attempted suicide between 3 and 7 times. There were no suicide deaths during the 5 year follow-up period but 37 adolescents made at least one suicide attempt. A greater number of suicide attempts prior to hospitalization was related to earlier post-hospitalization suicide attempts. The outcomes for youth without a suicide attempt and with a single suicide attempt were similar; however repeat suicide attempters (2 or more attempts) were at twice the risk of attempting suicide post-hospitalization. Finally, the first 6-12 months after discharge were found to be a high risk time for attempted suicide. Using survival curves, Goldston and colleagues estimated that 7% of adolescents make suicide attempts within the first 6 months after their discharge,

12% attempt suicide within the first year post-discharge, and 25% attempt suicide within the first 5 years post-discharge.

In a 6-month follow-up study of 100 adolescents who had been psychiatrically hospitalized, King et al. (1995) reported that 18% of these adolescents attempt suicide within the first 6 months post-discharge. Adolescents with perceived high levels of family discord, not living with a parent, a diagnosis of dysthymia, and high levels of suicidal ideation during hospitalization were significantly more likely to make a suicide attempt during the 6 month follow-up period. Treatment adherence following hospitalization did not differentiate the adolescents who made a subsequent suicide attempt and those who did not. In a similar study, Brent et al. (1993) reported a 9.7% suicide attempt rate at 6 months post-discharge among 134 psychiatrically hospitalized youth. Predictors of an attempt during this time period were a previous attempt, an affective disorder, conflict with a peer, and death of a nonparental relative.

In a more recent study, Prinstein et al. (2008) conducted assessments with 143 adolescents during their psychiatric hospitalization and again at 3, 6, 9, 15, and 18 months post-discharge in order to examine the temporal course of adolescent suicidal behavior. Between one fifth and one quarter of the adolescent inpatients attempted suicide within 18 months after discharge, and the vast majority of these attempters had attempted suicide prior to their hospital admission. At the 3 month follow-up assessment, 13.9% of the adolescents had attempted suicide, indicating the need for close monitoring in the period following discharge. With regard to suicidal ideation, latent growth curve analysis revealed that there was a period of suicidal ideation remission between baseline and 6 months post discharge, and a subtle period of suicidal ideation re-emergence

between 6 and 18 months. These suicidal ideation trajectories were strongly related to future attempts, even after accounting for the effect of baseline ideation and attempts. Given these findings, the authors suggest the need for investigating more complex models of temporal changes in suicidal ideation in order to predict suicide attempt.

Chapter 2: Child and Adolescent Sexual Abuse

Background

According to the most recent data available, an estimated 772,000 children in the United States were determined by Child Protective Services to be victims of abuse or neglect, which is a rate of 10.3 per 1,000. (U.S. Department of Health and Human Services, 2010). Of these youth, 71.1% of child victims experienced neglect, 16.1% were physically abused, 9.1% were sexually abused, 7.3% were psychologically maltreated, and 2.2% were medically neglected. Not all child abuse cases are reported to the Department of Health and Human Services, however, and true cases of abuse are not always able to be confirmed, so national epidemiological studies are useful in determining a more accurate picture of childhood sexual and physical abuse. In an integrative review of 16 studies of adults reporting on their sexual abuse experiences as children and adolescents, Gorey and Leslie (1997) reported a prevalence estimate of child/adolescents sexual abuse of 12-17% among females and 5-8% among males.

Rates of reported sexual abuse vary greatly depending on the definition used. For example, a national study in Iceland that examined the prevalence of sexual abuse in 9,113 high school students aged 16-19, revealed that 35.7% of girls and 17.8% of boys answered “yes” to experiencing at least one form of sexual abuse, as they included indecent exposure as a form of sexual abuse (Sigfusdottir, 2008). This highlights the need for a more consistent nomenclature for forms of sexual abuse in order to improve our ability to compare and integrate research findings.

Definition of Terms

While there is no universally accepted definition of child sexual abuse, the American Academy of Pediatrics (2010) defines child sexual abuse “When a child is engaged in a sexual situation with an adult or an older child. Sometimes this means direct sexual contact, such as intercourse, other genital contact or touching. But it can also mean that the child is made to watch sexual acts, look at an adult's genitals, look at pornography or be part of the production of pornography. Children many times are not forced into the sexual situation, but rather they are persuaded, bribed, tricked or coerced”

(www.healthychildren.org).

Risk Factors for Experiencing Sexual Abuse

Gender: Girls are 2.5 to 3 times more likely to experience sexual abuse than boys, although approximately 22-29% of all sexual abuse victims are male (Fergusson et al. 1996; Finkelhor, 2007; Sobsey, 1997).

Socioeconomic Status: Although low socioeconomic status is a strong risk factor for physical abuse, it has much less of an impact on sexual abuse. However, a disproportionate number of sexual abuse cases reported to Child Protective Services come from lower socioeconomic classes (Finkelhor, 2007).

Race and Ethnicity: According to the US Department of Health and Human Services (2010), African-American children, American Indian/Alaska Native children, and children of multiple races had the highest rates of victimization at 16.6, 13.9, and 13.8 per 1,000 children respectively. Hispanic children and Caucasian children had rates of 9.8 and 8.6 per 1,000, respectively. Asian children had the lowest rate of 2.4 per 1,000

children. Nearly one-half of all victims were White (45.1%), one-fifth (21.9%) were African-American, and one-fifth (20.8%) were Hispanic.

There are varying reports in the literature about the differences in prevalence rates among racial and ethnic groups, with some studies showing similar rates for Caucasian and African American women (Elliot, 1992; Wyatt, 1985) while others have found higher rates of sexual abuse in Caucasian women compared to African American women (Wyatt, 1985). In a 10 year research review, Putnam (2003) states that race and ethnicity do not appear to be clear risk factors for sexual abuse, although they may influence symptom expression. For example, Latina girls have been shown to have more behavioral and emotional problems as a result of sexual abuse than African-American or Caucasian girls (Mennen, 1995; Shaw, 2001) and African-American girls have been found to have higher levels of post-traumatic avoidance symptoms than Latina girls, but not Caucasian girls (Clear, 2006).

Family constellation: The presence of a stepfather in the home doubles the risk of sexual abuse for girls, not only for being abused by the stepfather but also for being abused by other men prior to the arrival of the stepfather in the home (Mullen, 1993).

Outcomes Associated with Sexual Abuse

There have been numerous studies investigating both the short and long term outcomes of victims of sexual abuse. Silverman et al. (1996) examined the relationship between childhood and adolescent sexual abuse before the age of 18 and psychosocial functioning in mid-adolescence (age 15) and early adulthood (age 21) in a representative community sample of young adults. Sexually abused participants demonstrated significant

impairments in functioning at both ages 15 and 21, including more depressive symptomatology, anxiety, psychiatric disorders, emotional-behavioral problems, suicidal ideation, and suicide attempts.

Similar findings were reported by Garnefski and Arends (1992) who found that in a sample of over 15,000 adolescents, those who reported experiencing sexual abuse endorsed more emotional problems (i.e. feelings of loneliness, anxiety, poor self-esteem, low mood, suicidal thoughts, and suicidal attempts) and behavior problems (use of alcohol and drugs, aggressive behavior, criminal behavior, and truancy) than those who were not sexually abused.

A recent longitudinal study by Fergusson et al. (2008) examined the effects of sexual and physical abuse among 1,265 individuals from birth to age 25. They found that both exposure to childhood sexual and physical abuse was significantly related to later mental health disorders including depression, anxiety, conduct disorder, anti-social personality disorder, substance dependence, suicidal ideation, and suicide attempts. When social, family, and individual factors (maternal age, parents' education, family living standards, family socioeconomic status, family functioning and parental behavior, changes of parents, parental substance abuse and criminal offending, parental affection and over-protection, IQ, and gender) were controlled for however, only exposure to sexual abuse remained significantly associated with later mental health disorders.

After adjusting for these possible confounding variables, experiencing sexual abuse increased the chances of developing a later mental health disorder by 2.4 (accounting for 13% of the variance), whereas experiencing childhood physical abuse increased later chances by 1.4 (accounting for 5% of the variance). There were no gender

differences in how sexual abuse later affected mental health outcomes. The authors conclude that much of the association between childhood physical abuse and later mental health problems reflects the general family context within which the abuse occurs, whereas this is less the case for sexual abuse.

Interested in examining the developmental time period of emerging adulthood (the period between finishing high school and becoming an independent adult), Shilling et al. (2007) examined the social role functioning and depressive symptoms of 572 women who had experienced child sexual abuse. The purpose of this study was to examine the pathways through which adult mental health is compromised by sexual abuse. Participants were first interviewed during their senior year of high school and were then followed up two years later. Two-thirds of the effect of experiencing sexual abuse on depressive symptoms at the follow-up data collection point was explained by experiences in the domains of work, school, and relationships.

The authors reported that women who have been sexually abused find themselves in intimate relationships where they have lower levels of perceived social support which in turn exacerbates depressive symptoms. Women with histories of sexual abuse were less likely to attend 4-year colleges (20.0% vs. 44.1%), were more likely to work full-time (35% vs. 18.5%), reported less enjoyment at school and work, reported lower levels of intimate support and greater argument frequency in their romantic relationships. They were also more likely to have had a baby by the follow-up interview (27.7% vs. 14.2%), and were more likely to have partners with a drinking or drug problem, or who were recently unemployed. With the exception of full-time work participation, all measures in these role domains were associated with both sexual abuse and depressed mood at the 2

year follow-up interview, in the expected direction. The authors concluded that these results revealed significant early adult interpersonal and occupational pathways through which sexual abuse leads to later depression.

Lifetime prevalence of major depression has been consistently found to be 3 to 5 times higher in women with a history of sexual abuse compared to women without such a history (Putnam, 2003). When Whiffen and Clark (1997) controlled for a history of sexual abuse, the classic 2:1 gender difference in depression rates between males and females disappeared, underscoring the significant impact sexual abuse has on the development of depression.

In addition to the psychiatric outcomes, individuals with sexual abuse tend to develop significant problems with affect regulation, impulse control, somatization, sense of self, cognitive distortions, and problems with socialization. Many of these processes are believed to have developmentally sensitive periods related to brain maturation and early caretaker interactions (De Bellis, 1999), suggesting that sexual abuse may have a negative impact on brain development.

The question is often raised as to whether it is the sexual abuse itself, or the context in which the sexual abuse occurs that is responsible for the presence of negative long term outcomes. In an effort to control for environmental confounds, Nelson et al. (2002) examined sexual abuse among 1,991 monozygotic and dizygotic same sex twins. Among twins that were discordant for sexual abuse, the abused twin had significantly higher rates of depression, attempted suicide, conduct disorder, alcohol dependence, nicotine dependence, social anxiety, and rape after age 18; suggesting that it is the abuse itself and not the family context that leads to the negative outcomes.

Resiliency in Survivors of Sexual Abuse

A moderate proportion of survivors of sexual abuse show little or no adverse effects of sexual abuse (Kendall-Tackett, 1993), suggesting that some individuals appear to be resilient to the effects of sexual abuse. Resiliency is a complex concept, with multiple definitions throughout the literature, ranging from broad definitions such as “Child sexual abuse survivors who have good outcomes despite their history of being victimized” (McClure, 2008, p. 82) to more specific definitions such as “A combination of innate personality traits and environmental influences that serve to protect individuals from the harmful psychological effects of trauma or severe stress” (Bogar & Hulse-Killacky, 2006, p. 319). Hyman and Williams (2001, p. 202) define resilience as “Competent functioning in several interrelated spheres despite adversity” with the five spheres being “physical health, mental health, interpersonal relationships, adherence to community standards, and economic well-being.” Rutter (1993) has emphasized how resiliency should be conceptualized as a process that can vary greatly between individuals, with something being a protective factor for one person, but a risk factor for another, suggesting that there cannot be any factors that are considered universally protective.

In a qualitative study of resiliency among 10 women who had been sexually abused as children, Bogar & Hulse-Killacky (2006) reported on determinant factors (innate and learned) and process factors (how participants came to be resilient in their current lives) that appeared as common themes. Resiliency in this study was defined as participants endorsing “a current life situation characterized by the ability to maintain stable relationships and to pursue and maintain career, volunteer, or leisure activities; feeling relatively confident with themselves and their current life circumstances; and

believing their lives had meaning” (p. 320). Qualitative analysis revealed 5 determinant factors (interpersonally skilled, competent, high self-regard, spiritual, and helpful life circumstances) and 4 process clusters (coping strategies, refocusing and moving on, active healing, and achieving closure) that were related to resilient outcomes.

In an examination of both risk and protective factors, McClure et al. (2008) investigated how family characteristics (family conflict and cohesion) and abuse characteristics (age at which abuse occurred, abuse severity, and relationship to perpetrator) were related to resilience (defined as the ability to engage in positive relationships with others, environmental mastery, and self-acceptance). In their sample of 177 university women who had experienced sexual abuse, greater family cohesion was predictive of developing positive relationships with others, accounting for 13% of the variance. In contrast, abuse characteristics only accounted for 3% of the variance in well-being outcomes. With regard to the resilient outcome of environmental mastery, family characteristics (high cohesion and low conflict) accounted for 19% of the variance, whereas abuse characteristics accounted for less than 3% of the variance. In one surprising finding, the number of abuse events was predictive of greater environmental mastery. With regard to self-acceptance, 22% of the variance was accounted for by family characteristics and only 2% by abuse characteristics. This study adds additional support in refuting the argument that the severity of the abuse is one of the most important factors in whether an individual has a resilient outcome or not and suggests the importance of intervention with the families of sexual abuse victims due to their important protective role. However, the retrospective nature of the data collection and the

use of an undergraduate population that could already be considered resilient by virtue of their academic attainment, limits the generalizability of these findings.

Among 87 African American female survivors of sexual abuse (mean age 31.6 years), Banyard et al. (2002) reported that the resilient women in their study (29% of participants) were less likely to have been abused by a family member, had more stable homes (i.e. fewer moves, less foster care placements, and parental drug abuse), and reported higher levels of social support.

Based on previous theories and research that feelings of self worth and confidence are important factors in resilient outcomes, Liem et al. (1997) examined what factors made these two constructs possible among the 28% of their sample of sexually abused undergraduate students who had resilient outcomes, based on low depression scores and high self-esteem ratings. The severity of the abuse was found to be similar across both the resilient and non-resilient group with respect to the age at which the abuse happened, the intra versus extra-familial nature of the relationship, the length of time the abuse went on for, and whether the abuse extended as far as rape or not. The one difference in the abuse characteristic was that the non-resilient group was more likely to have experienced physical coercion as part of the sexual abuse. Resilient survivors came from larger families with more siblings than the non-resilient survivors.

Liem et al. also found that resilient survivors had more internal versus external attributional styles than non-resilient survivors (i.e. attributing to themselves rather than to some external force the capacity to bring about desired outcomes) and less chronic self-destructive behaviors. Resilient survivors were also found to have more stable family

environments before age 5 (i.e., fewer deaths, divorce, major family illnesses, physical or emotional abuse) than the non-resilient survivors.

These resilient survivors were less likely to blame themselves for the abuse, but were no more likely to have told someone about the abuse at the time at which it happened than the non-resilient survivors. The resilient survivors were less likely than the non-resilient survivors to have received psychotherapy as adults, suggesting that therapy is not necessarily the primary vehicle through which survivors regain mastery over their abuse histories, but rather that those without resilient outcomes required more therapeutic intervention. Taken together, the physically coercive nature of the abuse, the stressful nature of the early family environment, having a high locus of internal control and low levels of self-destructiveness, and having a larger number of siblings were the variables that made the largest contribution to predicting a resilient outcome. One major criticism of this research, similar to the Bogar & Hulse-Killacky (2006) study, is that because the sample was drawn from an undergraduate population, one could argue that this group could already be considered resilient due to their attaining higher level education.

Liem et al. (1997) highlighted the methodological difficulties of conducting retrospective research investigating the differences between resilient and non-resilient adults as the length of time since the traumatic event often varies greatly and much has occurred in the interim. Despite these issues, identifying factors associated with more positive outcomes in the aftermath of sexual abuse is an important line of research, with possible opportunities for identifying those at greater risk of negative outcomes and developing treatments that promote resiliency and recovery.

Chapter 3: Sexual Abuse and Suicide-Related Behaviors

Background

Research into the relationship between sexual abuse and suicide-related behaviors has been conducted within nationally representative, community, and clinical samples. Study designs to date have been largely cross-sectional and retrospective, assessing whether past sexual abuse (often studied alongside physical abuse, emotional abuse, and neglect) is associated with current suicide-related behaviors among adolescents and adults. Rates of sexual abuse often vary greatly between nationally representative, community, and clinical samples, with higher rates of abuse in clinical versus community and nationally representative samples. Accordingly, this chapter will be organized by each sampling strategy. Furthermore, studies on the effects of sexual abuse have been conducted with both youth and adult samples, resulting in substantial differences in the length of time since the abuse occurred, and a high degree of variability in developmental level. Given this methodological difference, with retrospective studies in adults being potentially subject to an increase in recall bias, the literature review will be further subdivided between youth and adult samples where appropriate. Finally, psychological autopsy studies will be reviewed in order to investigate the relationship between sexual abuse and suicide death. The literature overall suggests that sexual abuse is linked to higher rates of psychopathology, suicidal ideation, suicide attempt, and death by suicide, regardless of the study design (prospective, cross-sectional, or retrospective), or the population studied

(nationally representative, community, or clinical), for a substantial number of abuse survivors.

Research with Nationally Representative Samples

Large, nationally representative studies have been conducted recently in Europe, Australia and the United States, investigating the prevalence of sexual abuse and its relationship to suicidal behavior. Martin et al. (2004) surveyed 2,458 students (mean age 14) from both rural and suburban areas ranging from lower to upper middle socioeconomic status in South Australia to examine the relationship between sexual abuse and suicide-related behaviors in a nationally representative sample. Participants were asked about sexual abuse, suicidal and self-injurious behaviors, depression, hopelessness, and global family functioning. Two percent of the boys and 5.4% of the girls reported ever experiencing sexual abuse.

When compared to their non-abused counterparts, adolescents who had been sexually abused were significantly more likely to report having experienced suicidal ideation (73% abused vs. 25% non-abused); to have made a suicide plan (55% abused vs. 12% non-abused); to have made a suicide threat (45% abused vs. 9% non-abused), to have made a single suicide attempt (24% vs. 5%), and to have made multiple suicide attempts (35% of the abused youth had made 5 or more suicide attempts compared to 2% of non-abused youth.) Furthermore, the attempts of sexually abused adolescents were more dangerous than non-abused adolescents, with 36% of the abused youth being admitted to a hospital for a medically serious attempt, compared to 8% of the non-abused youth.

Important gender differences were discovered in the Martin et al. (2004) study. The differing rates of reporting a suicide attempt between sexually abused and non-abused girls (29 % vs. 6%) was significantly smaller than the difference in attempted suicide between sexually abused boys and non-sexually abused boys (55% vs. 3.5 %). The sexually abused males and females had significantly higher depression and hopelessness scores, and significantly lower scores on family functioning scales compared to adolescents without a history of sexual abuse. When the authors controlled for these variables, the significant relationship between sexually abused boys and the five suicide-related behaviors variables was reduced, but remained significant. Conversely, when these variables were controlled in the sample of female participants, there was no longer a significant difference in scores on the suicide-related behaviors between sexually abused and non-sexually abused girls. In sum, the authors propose that sexual abuse is a risk factor for suicidal behavior in both boys and girls. However, for girls, this relationship seems to be indirect, mediated by higher levels of depression, hopelessness, and lower levels of family functioning. Conversely, in the male sample the relationship between sexual abuse and increased suicide-related behaviors appears to be direct. Sexual abuse was not defined for the youth in this study, however, so the results are based on the adolescents' perception of what constitutes sexual abuse, which makes it difficult to compare to other studies, without clear operational definitions for the abuse experiences.

A more recent study conducted in the United States by Calder et al. (2010) asked 4,081 adults about their experiences with physical and sexual abuse during childhood and adulthood. Seventeen percent of those who reported both sexual and physical abuse

during childhood endorsed suicidal ideation in the past year, compared to 8% of those who had experienced either sexual abuse or physical abuse during childhood (but not both). Twenty nine percent of those who experienced physical abuse in adulthood, 13% of those who experienced sexual abuse in adulthood, and 64% of those who experienced both sexual and physical abuse endorsed suicidal ideation in the past year. These results were significant after controlling for age, gender, income, education, race, employment, and marital status.

Using the data from the National Longitudinal Study of Adolescent Health, Hahn et al. (2010) examined the cumulative effects of multiple types of childhood maltreatment (neglect, physical abuse, and sexual abuse) on sexual risk behaviors, delinquency, and suicide-related behaviors in the past 12 months among 7,576 females aged 18-27 years. Thirty one percent of participants reported one type of maltreatment only, 14.3% reported two types of maltreatment, and .3% reported all three types of maltreatment. The authors found that sexual abuse in combination with another form of maltreatment had the highest proportion of sexual risk behaviors (i.e., multiple sex partners, sex for money, sex before 15), delinquency (property damage, fighting, gang affiliation, owning a gun, being a runaway), and suicidal ideation and attempt in the past 12 months.

Sigfusdottir et al. (2008) conducted a national cross-sectional study in Iceland examining the prevalence of sexual abuse and its relationship to suicide-related behaviors among 9,113 high school students aged 16-19, representing 80% of students in Iceland. The authors found that 35.7% of girls and 17.8% of boys reported experiencing at least one form of sexual abuse – ranging from inappropriate touching to forced intercourse. (Full details of this study are given in Chapter 2). Students were also asked about

communicating suicidal thoughts to others and making a suicide attempt (ever and in the past year). Among the entire sample, 29.6% of the girls and 21.7% of boys answered “yes” to one or more of these questions. Additional data were also collected regarding delinquent behavior, depressed mood and anger.

Experiencing sexual abuse was positively correlated with suicidal behavior ($r = .27$ for girls and $.15$ for boys), delinquency ($r = .10$ for girls and $.18$ for boys), anger ($r = .19$ for girls and $.15$ for boys), and depressed mood ($r = .22$ for girls and $.10$ for boys). Using depressed mood and anger as mediating variables between experiencing sexual abuse and suicidal behavior, Sigfusdottir and colleagues (2008) discovered that the effects of sexual abuse on suicide-related behaviors were twice as strong through depressed mood as through anger. The effect of sexual abuse on depressed mood was significantly stronger for girls than for boys, suggesting that girls more often respond to sexual abuse with internalizing symptoms, while the effect of sexual abuse on delinquency was significantly stronger for boys than for girls, suggesting that they respond to sexual abuse with more externalizing symptoms.

The National Longitudinal Survey of Adolescent Health (Bearman & Moody, 2004) collected data on the effect of individual and social variables (e.g. risk behaviors, self esteem, friendships, social and demographic factors, and household structure) and mental health outcomes at two time points with 13,465 American youth (grades 7 through 12). Females (but not males) were asked “Were you ever physically forced to have sexual intercourse against your will?” in addition to being asked about suicidal ideation and attempt within the past year. Those girls who reported being forced to have sexual

intercourse had a significantly increased risk of suicidal ideation in the past 12 months, but not suicide attempt.

Among a nationally representative sample of over 15,000 adolescents in the Netherlands, Garfenski and Arends (1998) found that sexually abused girls 2.5 times more likely to report suicidal ideation and 5 times more likely to report suicide attempts than non-sexually abused girls; while sexually abused boys reported 3 times more suicidal ideation and 13 times more suicide attempts than non-sexually abused boys. These findings suggest that while lower in frequency, sexual abuse among males may have more deleterious effects to them than to their female counterparts.

Using the National Comorbidity Study data, Belik et al. (2007) examined whether exposure to various types of traumatic events were differentially associated with suicidal ideation and attempts, after controlling for sociodemographic factors and the presence of mental and physical disorders. Participants were 8,098 individuals from across the United States, aged 15-54, years who were assessed for a full spectrum of psychological disorders, interpersonal and non-interpersonal traumatic experiences, and suicide-related behaviors. The vast majority of non-interpersonal traumas had no significant relationship to suicide-related behaviors, whereas interpersonal traumas were strongly related to suicide-related behaviors. Physical abuse, serious neglect, and having been threatened with a weapon were significantly associated with suicidal ideation for men; while rape, sexual molestation, physical attack, and physical abuse as a child were significantly associated with suicidal ideation for women. Being raped, sexually molested, physically attacked, physically abused as a child, and seriously neglected as a child had significant associations with suicide attempts in men; while being raped, sexually molested,

physically attacked, and physically abused as a child were significantly associated with suicide attempts in women. When examining the temporal order of traumatic events and suicide related behaviors, the majority of individuals experienced the interpersonal trauma first and then the suicidal behavior, ranging from 77-100% of the time, suggesting a strong unidirectional relationship with trauma being a risk factor for subsequent suicide-related behaviors.

Taken together, these nationally representative studies suggest that in the general population, having experienced sexual abuse is associated with higher rates of suicidal ideation, suicide attempt and psychopathology. They also give us epidemiological data about the rates of sexual abuse in the general population which, when compared to the rates of abuse among clinical populations, gives us an idea of how over-represented sexually abused youth are in our clinics and hospitals. All of the nationally representative studies were conducted in Western countries, however, lacking generalizability to non-Western countries, and their different definitions of sexual abuse limit the ability to synthesize findings across countries.

Research with Community Youth Samples

Community-based studies with non-clinical adolescents and young adults have shown that sexual abuse is associated with increased levels of suicidal ideation and attempt, in addition to higher rates of psychopathology such as depression, anxiety, post-traumatic stress disorder, and emotional-behavioral problems (Brown et al., 1999; Silverman et al., 1996). Community samples are different from nationally representative samples in that they are generally smaller in size and recruited from one area or region. As such, they

may have much less generalizability than nationally representative samples, but are more representative than clinical samples.

Looking at two important developmental stages, Silverman et al. (1996) examined the relationship between childhood and adolescent physical and sexual abuse before the age of 18 and psychosocial functioning in mid-adolescence (age 15) and early adulthood (age 21) in a community sample. This study provides evidence of the increased risk for negative outcomes among victims of sexual abuse compared to victims of physical abuse. Subjects were 375 participants (50% female) originally drawn from a cohort of 777 kindergarteners in a public school system in the Northeastern United States in 1977. Nearly 11% (n = 40) of the participants reported at least one type of abuse (physical or sexual) before age 18. At age 15, half of the physically abused males (n=4) displayed high levels of suicidal ideation, compared to 12.3% of the non-abused boys (n=20), a statistically significant difference. At age 21, this relationship was no longer significant, however. At both time points, there was no difference in the number of reported suicide attempts between the physically abused and non-abused males. Small sample sizes may have limited the power to detect true differences, however. Since only two males reported sexual abuse no analyses were conducted on this form of abuse among males.

At age 15, 70% (n=7) of the physically abused females displayed high levels of suicidal ideation, compared to 29.1% (n = 50) of non-physically abused females. At age 21, physically abused females had a 6-fold elevated rate of suicide attempts (n = 3, 25%) over non-physically abused females (n = 7, 4.0%). Nearly all (n = 14, 87.5%) of the sexually abused females indicated by age 15 that they had thought about attempting suicide, compared to one-quarter (n = 43, 25.9%) of their non-abused peers. Almost 22%

of the sexually abused females acknowledged that they had thought about attempting suicide within the past 12 months, compared to 7.3% of their non-sexually abused peers. More than one in four sexually abused females, compared to one in 42 non-sexually abused females, reported making at least one suicide attempt by age 21, suggesting that sexual abuse is a particularly detrimental form of abuse with regard to increasing suicidal behavior in females.

In an effort to tease apart the experience of the abuse itself from the broader context of an abusive environment, Brown et al. (1999) investigated the independent and additive effects of childhood neglect, physical abuse, and sexual abuse on adult depression and suicidal behavior, taking into account the abuse milieu (e.g. child, family, environmental, and psychiatric risk factors) in a longitudinal community sample. Participants were members of a random sample of families who were first assessed in 1975 and followed for 17 years. Participants were assessed for depression, suicide attempt, childhood neglect, physical abuse, and sexual abuse. Of the 639 participants, 81 (12.6%) had experienced some form of abuse (neglect, physical abuse, sexual abuse). Looking at the differential risk of childhood neglect, physical abuse, and sexual abuse, Brown and colleagues found different results for the different forms of abuse. When contextual factors were controlled for, childhood neglect was not found to have any independent effect on depression or suicide attempts, either during adolescence or early adulthood. Among those who had experienced physical abuse, there was an independent increase in the risk for adult depressive disorder (OR = 3.83) and repeated suicide attempts in adolescence (OR=10.74). Consistent with other studies, the highest rates of depressive disorders and suicide attempts were found among those who had experienced

sexual abuse. After controlling for confounding contextual factors, those who were sexually abused had an increased risk (during adolescence and young adulthood) for a depressive disorder (OR = 4.07); a single suicide attempt (OR = 5.71); and repeated suicide attempts (OR = 8.40), suggesting that sexual abuse may be the most detrimental form of childhood interpersonal trauma with regard to suicide risk.

Research with community youth samples allows us to investigate the incidence and effects of sexual abuse among youth who are not in clinical settings, and provides insight into the broader spectrum of abuse experiences and levels of psychological functioning. Problems of under-reporting of physical and sexual abuse and of suicidal behavior, however, are ever-present in this area of research.

Research with Community Adult Samples

While keeping the important caveat of recall bias in mind, retrospective studies with adult community samples offer convincing evidence that sexual abuse can have a long-lasting impact on the suicide risk outcomes of the individuals who were abused (Boudewyn, 1995; Stepakoff, 1998; Wiederman, 1998). Among a sample of 151 women who were attending their family physician for routine gynecological care (age range 17-49, mean age = 34, 84.8% Caucasian), Wiederman et al. (1998) examined the relationship between 5 forms of interpersonal trauma and suicide attempt.

Of the 151 women, 25.8% had experienced sexual abuse, 36.4% had experienced physical abuse, 43.7% had experienced emotional abuse, 9.3% had experienced physical neglect, 43% had witnessed violence, and 10% of them had attempted suicide. The majority of women reporting a trauma history reported more than one type of trauma

(64.1%). The likelihood of having attempted suicide was greater among women who had experienced sexual abuse, physical abuse, emotional abuse, or witnessed violence, but not among women reporting a history of physical neglect. Upon closer examination of the types of abuse, sexual and physical abuse were each uniquely predictive of having attempted suicide, even after controlling for the effects of each other as well as emotional abuse and witnessing violence. Of the women who had experienced both sexual and physical abuse (n = 21), 8 had attempted suicide (38.1%), a significantly higher percentage than 11.1% of sexually abused (but not physically abused) suicide attempters and 12.15% of physically abused (but not sexually abused) suicide attempters.

With sexual abuse appearing to be an especially harmful form of abuse, Stepakoff (1998) investigated the relationship between suicidal ideation and attempts and five types of sexual victimization among 393 female undergraduate students in the United States aged 17-62 (mean = 20; 96.6% aged 18-25). Using a diverse sample (67.3% White, 12.1% African American, 3.6% Latina and 17% Native American, Asian American or Other), authors stratified the sample into non-victimized, sexual contact, attempted rape, coercive intercourse (defined verbal pressure or use of the offender's authority over the victim), and rape, both during childhood and adulthood. Fifteen percent of the sample (n=59) reported experiencing some type of childhood sexual victimization (7.6% had experienced sexual contact; 1.5% had experienced coercive intercourse; 2.5% had experienced attempted rape; and 3.3% had experienced rape). Thirty-nine percent of the women reported experiencing adult sexual victimization (11.5% had experienced sexual contact; 14.2% had experienced coercive intercourse; 5.1% had experienced

attempted rape; and 8.7% had experienced rape). A history of one or more suicide attempts was reported by 10.5% (n=39) of the participants.

Stepakoff (1998) found that self-reported lifetime suicide attempts were significantly predicted by a history of sexual abuse as well as by sexual victimization in adulthood. Current suicidal ideation and hopelessness were predicted by adult sexual victimization but not by a history of sexual abuse. The authors suggest that hopelessness and suicidal thoughts and behaviors may be short-term consequences of sexual victimization, with suicidal ideation remitting after a period of time. Thus, a survivor of sexual abuse may engage in suicidal behavior sometime after being victimized but may not necessarily experience hopelessness and suicidal ideation several years later.

Boudewyn and Liem (1995) compared the outcomes of adults who had experienced sexual abuse, physical abuse, emotional abuse, parental separation or divorce, serious illness, or serious illness or loss of a family member. Sexual abuse ranged from unwanted sexual kissing and touching to unwanted oral, anal and genital intercourse before the age of 14. In this college sample of 173 men and 265 women (aged 16-65, mean age 24.87), 16% of males and 24% of female respondents reported having been sexually abused as children. Approximately one third of those who experienced sexual abuse reported unwanted kissing and touching, one third reported attempted oral, anal, or genital intercourse, and one third reported completed oral, anal, or genital intercourse.

Both men and women with any reported sexual abuse (regardless of severity) had significantly higher levels of suicidal ideation, suicide attempts, self-harm ideation, and acts of self-harm than their non-abused counterparts (Boudwyn & Liem, 1995). Sexual

abuse made a significant independent contribution to the variance accounted for in adult depression and chronic self-destructiveness, and in the frequency of self-harm ideation, suicide ideation, suicide attempts, and acts of self-harm among both male and female sexual abuse groups. The more frequent and severe the sexual abuse and the longer its duration, the more depression and self-destructiveness reported in adulthood. Physical abuse (defined as having been hit, slapped, punched, or kicked with the intention of doing physical harm) and emotional abuse (defined as having been verbally humiliated, demeaned, threatened, or told you weren't loved or wanted) also made independent contributions to the variance accounted for in depression (emotional abuse only), suicide ideation, suicide attempts (physical abuse only), and self-harm ideation (emotional abuse only).

While helpful in adding to our knowledge on this topic, the length of retrospective recall can be extremely long allowing for increasing levels of recall bias, and the number of possible confounding variables continues to grow exponentially. Methodological weaknesses aside, however, there does appear to be a growing body of evidence that sexual abuse is associated with long-term increases in rates of suicide-related behaviors and psychopathology, for a substantial proportion of abuse survivors.

Research with Clinical Youth Samples

Studies focusing on youth who are either hospitalized or in outpatient treatment often find that youth exposed to sexual abuse are highly over represented in these populations. While findings from studies with youth recruited from clinical settings are not generalizable to the larger population, they provide valuable information to researchers

and clinicians who work with youth in clinical settings who are at higher risk for suicide-related behaviors. Youth who are receiving clinical services who have a history of sexual abuse are more likely to have experienced suicidal ideation, a single suicide attempt, and/or multiple suicide attempts (Bayatpour, 1992; De Wilde, 1992; Edwall, 1989; Grilo, 1999; Lipschitz et al., 1999a; Walrath, 2001). The majority of studies investigating sexual abuse and suicide among clinical youth are cross-sectional and retrospective, with few longitudinal or prospective investigations.

Research with psychiatrically hospitalized youth often reveals extremely high levels of sexual abuse and suicide-related behaviors. An early study by Edwall (1989) reported that over one third (35.2%) of 597 female adolescents (mean age=15.6) hospitalized for substance abuse had experienced sexual abuse. Of the abused females, 56.5% of the incest group, 35.7% of the extrafamilial, and 44.2% who experienced both intra- and extrafamilial abuse reported a suicide attempt in the year prior to hospitalization. This was compared to 20.4% of youth who had not been sexually abused, indicating a significant difference in suicide risk between abused and non-abused youth. While the statistics used in this study were rudimentary, the clear differences in suicide attempt history between the abused and non-abused groups are compelling. A major strength of this study was that they examined the differences between females who had been abused by a family member or someone outside the family. The authors raise some important limitations of their own study, namely that they did not obtain information about the duration and severity of the abuse and whether there had been disclosure and/or intervention prior to the study. The authors suggest that how adults respond to a child or

adolescent disclosing abuse may have significant effects on the long term suicide risk of the youth, an important avenue for future research.

The rate of approximately one third of hospitalized youth reporting abuse was also found by Shaunesey et al. (1993). Among 177 psychiatrically hospitalized adolescents in their study (aged 13-18; mean age 14.5), 33.3% had experienced physical abuse and 30.8% had experienced sexual abuse. Adolescents who had experienced any type of abuse (either sexual, physical, or both) were significantly more likely to have made a previous suicide attempt than their non-abused counterparts and displayed significantly higher levels of suicidal ideation. Additionally, the higher the frequency of physical abuse, the more severe the suicidal ideation and the greater the number of previous suicide attempts. For sexual abuse, however, there was no increase in suicidal ideation or number of previous suicide attempts based on the frequency of the abuse.

Considering a broad spectrum of abuse, Lipschitz et al. (1999a) studied the prevalence of suicidal ideation and suicide attempt among youths who have experienced emotional abuse, physical neglect, emotional neglect, physical abuse, and/or sexual abuse. The sample consisted of 71 psychiatrically hospitalized adolescents (52% female, aged 12-18, mean age=14.8) who were 48% Latino, 42% African American, 5% Caucasian, and 5% other ethnicities. Fifty-one percent of the sample reported having made a suicide attempt and displayed high levels of current suicidal ideation. Female gender, sexual abuse, and emotional neglect were significant predictors of suicidal ideation, and female gender and sexual abuse were significant predictors of suicide attempts.

In a large clinical study of 4,677 children and adolescents (65% male) receiving outpatient psychiatric services from 1993 to 1998 in 16 states, Walrath and colleagues (2001) investigated the association between suicide attempt status (non-attempter, first time attempter, previous attempter, and multiple attempter) and histories of physical abuse, sexual abuse, and being sexually abusive. Of the 4,677 youths in the sample, 171 (3.7%) were identified as first-time suicide attempters, 526 (11.2%) as previous attempters (i.e., there was a suicide attempt history, but a suicide attempt was not the presenting problem), 452 (6.0%) as repeat attempters, and 3,701 (79.1%) as having never attempted suicide. Several important findings related to physical and sexual abuse emerged from this study. Previous attempters were most likely to have been physically or sexually abused, followed by repeat attempters, first-time attempters, and non-attempters. Previous attempters were also almost twice as likely as the other three groups to have a history of being sexually abusive. This was the only study found in the literature review process that examined the relationship between perpetrating sexual abuse to suicide-related behaviors, which may be an important research area to pursue with regards to prevention of the cycle of abuse and increased suicide risk.

In a sample of 352 ethnically diverse (63% Hispanic, 19% Caucasian, 14% Black and 5% Asian), economically challenged pregnant teens, Bayatpour et al. (1992) examined the prevalence of physical and sexual abuse, substance use, and suicidal ideation and attempt among this psychiatric outpatient sample. Twenty two percent of these females reported being either physically or sexually abused (of these, 51.2% reported being the victim of sexual abuse, 35% reported a history of physical abuse, and 13.8% reported both). Eighteen percent of these young females had experienced suicidal

ideation and/or attempt, although a specific breakdown between ideation and attempt was not given. Experiencing either physical or sexual abuse was associated with a four-fold increase in suicidal ideation and attempt compared to their non-abused pregnant counterparts. Experiencing both physical and sexual abuse was associated with a seven-fold increase in suicide-related behaviors.

Wozencraft et al. (1991) found that among 65 youth aged 5 to 17 (mean age = 10.74) who had recently disclosed sexual abuse, 37% reported suicidal ideation without intent, and 5% suicidal ideation with intent. Data were collected between 7 and 72 calendar days following investigation of the abuse by the appropriate authorities. A greater likelihood of any suicidal ideation was associated with being older, remaining in the family home following investigation of the abuse, having a mother who was rated as less compliant with the investigation, and being abused by a family member.

While research with clinical samples of youth is not generalizable to the larger population, it provides a wealth of knowledge about how prevalent and deleterious sexual abuse is among youth who are struggling with mental disorders and suicide-related behaviors. This research highlights the urgent need to develop better ways of identifying, treating and preventing both the abuse itself and the associated increase in risk for psychopathology and suicide-related behaviors.

Research with Clinical Adult Samples

There have been several studies of psychiatrically hospitalized adults who are assessed for a history of sexual abuse during childhood/adolescence in order to examine any possible relationship between early abuse and later suicide-related behaviors. Despite

some major methodological shortcomings (reliance on recall over long periods of time, small sample sizes, and high levels of comorbid diagnoses), these studies do suggest that sexual abuse is associated with long term increases in psychopathology and suicide risk.

Ystgaard et al. (2004) recruited 74 subjects, (65% women, aged 6-82 years, mean = 36) who were consecutively admitted to a general hospital after having made a suicide attempt, and collected data on their prior suicide attempts, self-mutilation, psychopathology, and various forms of child abuse before age 18 (sexual abuse, physical abuse, neglect, antipathy from parents), and other stressful life events (loss of parents, and exposure to family violence). The prevalence of sexual abuse was 35%, physical abuse 18%, neglect 27%, antipathy 34%, loss of caregiver 37% and exposure to family violence 31%. Both physical and sexual abuse were independently associated with repeated suicide attempts even after controlling for the effects of the other adverse childhood factors. No other childhood adversity was related to chronic suicidal behavior.

Brodsky et al. (2001) investigated whether a higher frequency of reported childhood trauma would be found in depressed adults with higher levels of trait impulsivity, aggression, and suicidal behavior. In a sample of 136 adult psychiatric inpatients (87 women and 49 men), 38% reported a history of physical or sexual abuse before the age of 15 years. Subjects who reported abuse were significantly more likely to have a diagnosis of borderline personality disorder, to have higher impulsivity and aggression scores, and to have made a suicide attempt.

Talbot et al. (2004) examined the relationship between sexual abuse histories and suicidal ideation and behavior among 127 depressed women age 50 years and older. After admission to a psychiatric unit, participants were administered a structured, standardized

diagnostic assessment and measures of suicidal ideation and suicidal behavior. Women who reported sexual abuse histories were more likely to report suicidal ideation at the time of hospitalization and a history of multiple suicide attempts.

In a similar study of 158 female hospitalized suicide attempters in the Netherlands, van Egmond (1993) found that 50% of the participants reported being sexually abused at some time in their life. Within this suicidal sample, the sexually abused suicide attempters showed more suicidal behavior in the past than their non-abused counterparts, and had significantly more repeat suicide attempts during the 1 year follow-up period.

In a psychiatric outpatient sample of 251 ethnically diverse adults (73% female; mean age 38.7; 35% Hispanic; 19% Black, and 44% Caucasian), Kaplan et al. (1995) examined the effects of experiencing physical and/or sexual abuse in childhood, and physical and/or sexual assault in adulthood on suicidal behavior. The authors reported that 51% of the participants experienced physical or sexual abuse during childhood, 19.5% experienced physical or sexual assault during adulthood, 28% reported a combination of childhood abuse and abusive experiences in adulthood, and 26% reported at least one suicide attempt in their lifetimes. A history of a combination of childhood and adulthood abuse was significantly associated with higher rates of current suicidal ideation; while adulthood physical abuse alone, and a combination of childhood and adult abuse was significantly associated with having made a suicide attempt.

Kaplan (1995) reported that participants who had experienced childhood abuse, but were not later victimized did not have significantly higher rates of current ideation or past attempt, possibly suggesting that the cumulative effects of repeated abuse are what

places individuals at higher risk for suicide in the long-term. There is some evidence that women who are sexually abused in childhood/adolescence are more likely to be abused as adults (Herman, 1986; Van der Kolk, 1989) which Kaplan and colleagues suggest can lead to increased suicide-related behaviors in adulthood. This theory needs further research, but it could suggest that working with child and adolescent survivors of abuse to prevent re-victimization as adults could be a possible means of suicide prevention.

As can be gathered from these studies, histories of sexual abuse (along with other interpersonal traumas) are commonly found in adults seeking treatment for psychological disorders. Having such a history is associated with long term psychological difficulties, ranging from impulsivity, aggression, to suicidal ideation, multiple suicide attempts, and borderline personality disorder. While the retrospective methods utilized in these studies warrants caution in conferring a cause-and-effect relationship between sexual abuse and negative outcome, the converging evidence across multiple studies lends support to the results of these studies.

Psychological Autopsy Studies

Two of the psychological autopsy studies previously described in Chapter 1 included questions about sexual abuse history among the youth who have died by suicide. Brent et al. (1993) reported a higher rate of sexual abuse among 76 youth who had died by suicide compared to 67 demographically matched living controls, both in the 12 months before the suicide and in their lifetime. Among the youth who died by suicide, 2 of them experienced sexual abuse in the past year and 5 of them experienced it in their lifetime. Among the matched controls, none had experienced sexual abuse in the past

year, and 2 had experienced sexual abuse in their lifetime. This difference was not statistically significant, but this appears to be largely due to very limited power.

In a non-controlled study, Houston et al. (2001) reported a sexual abuse rate of 18.5% among 27 youth (25 males and 2 females) who had died by suicide in England. While they did not have a matched control group of living youth, the rate of 18.5% is substantially higher than the rate of sexual abuse in the general population, and among males in particular.

Research looking at the relationship between sexual abuse and death by suicide is very difficult to do, as death by suicide among adolescents is, statistically speaking, a rare event. In addition, asking families about sexual abuse experiences among their youth who have recently died by suicide can be an especially sensitive topic and is often difficult to substantiate. Given these limitations, however, these two studies provide preliminary evidence that points towards an association between sexual abuse and death by suicide, but much more research is needed in order to make any firm conclusions.

Chapter 4: The Current Study

Background and Rationale

Sexual abuse and adolescent suicide are tragic events that greatly impact the lives of youth and their families. This is evident from converging findings from a multitude of studies examining the relationship between sexual abuse and suicide-related behaviors over the past two decades (e.g. Silverman et al., 1996; Belik, 2007; Edwall, 1989; Grilo, 1999; Lipschitz et al., 1999b; Martin, 2004; Shaunesey, 1993; Walrath, 2001). Sexual abuse has far reaching consequences and can often place an individual at increased risk for mental health disorders, functional impairment, suicidal behavior and even death by suicide, although the mechanisms by which its effects are sustained are not clear. As a field we are continuing to learn about the deleterious effects of sexual abuse, both in the short and long-term. The purpose of this study is to examine the long term outcomes of adolescents who were hospitalized for severe suicidal ideation or suicide attempt with and without a history of sexual abuse. The 6-year longitudinal design of this study, along with the rich amount of data that was collected at baseline, will add to the field's understanding of sexual abuse in relation to the long term outcomes of suicidal adolescents.

A Transactional Model of Sexual Abuse and Suicide-Related Behaviors

Due to the multiple interacting risk factors and pathways to youth suicide in the context of changing developmental tasks, this study is best conceptualized within a developmental psychopathology model, with an accumulation of risk factors that can

exacerbate each other over time, creating a trajectory toward suicide-related behaviors. Figure 4.1 is an adaptation from a developmental psychopathology model for suicide risk proposed by King (1997) that presents the variables being examined in the current study. In this model, it is proposed that sociodemographic factors, psychopathology, and environmental stressors or trauma (such as sexual abuse) interact with each other over time through the developmental periods of childhood, adolescence, and early adulthood. During this developmental trajectory, adolescents are in an ever-changing period of cognitive and social change, which can lead to improvements in outcomes, or can further exacerbate their negative outcomes. Protective factors and moderating/mediating variables (possible examples include treatment, social support, education) can help to buffer youth from the effects of sociodemographic factors, psychopathology, and environmental stress/trauma, leading to an improvement in current functioning beyond what would be expected given the risk factors (i.e., resiliency).

Aims and Hypotheses

Aim 1: Examine psychological outcomes, social functioning, and service utilization of the entire follow-up sample approximately 6 years post index psychiatric hospitalization.

- Current depression, suicidal ideation, history of suicide attempt since baseline, drug abuse, alcohol abuse, quality of life, social adjustment, service utilization, and socioeconomic variables will be described for the entire follow-up sample.

Aim 2: Examine the relationship between sexual abuse history and psychological outcomes, social functioning, and service utilization.

- It is hypothesized that participants with a history of sexual abuse at baseline will have higher levels of baseline depression, hopelessness, suicidal ideation, suicide attempt history, and functional impairment than youth without sexual abuse.
- It is hypothesized that participants with a history of sexual abuse at baseline and/or during the follow-up period will have higher levels of current depression, suicidal ideation, suicide attempt history, drug abuse, alcohol abuse, and service utilization, and lower levels of quality of life and social adjustment.
- Exploratory analysis will be conducted to examine whether there are differences in service utilization between those with and without a history of sexual abuse.

Aim 3: Conduct exploratory analyses to identify factors associated with resilient outcomes among participants with sexual abuse histories.

- *Participants with sexual abuse histories with resilient outcomes will be compared to participants with sexual abuse histories with non-resilient outcomes on age, baseline household income, baseline perceived social support from family, years of education, and use of mental health services order to identify any factors associated with resilient outcomes.*

Participants

Study participants at baseline were 448 adolescents, ages 12 to 17 years (mean age = 15.5 years), who were psychiatrically hospitalized approximately 6 years ago at the University of Michigan Child and Adolescent Psychiatric Hospital or Havenwyck Hospital. These individuals were originally participants in an NIMH-funded study, the Youth-Nominated Support Team-II, lead by Cheryl King, Ph.D. The consent rate for this original stuffy

was 43%, however this recruitment rate was similar to other studies with acutely suicidal youths. All of these youth met inclusion criteria for acute suicide-related behaviors, satisfied by a parent or adolescent report on the NIMH DISC-IV Suicidal Ideation/Behavior section (David Shaffer, et al., 1998) of: (a) recent suicidal ideation that was *either* unrelenting *or* accompanied by a specific plan (“Did you think about killing yourself many times in the last four weeks?” or “Did you plan exactly how you would kill yourself?”); or (b) suicide attempt within the last four weeks.” In the month preceding hospitalization, 88.4% of adolescents reported severe suicidal ideation, 56% of adolescents endorsed a suicide attempt plan, and 51.1% had attempted suicide.

For the current study, we attempted to contact the first 166 of the original participants. Out of these 166 participants, 96 (58%) completed the follow-up interview, 20 (12%) refused participation, and 50 (30%) were unable to be located (see Table 4.1). The follow-up sample was 74% percent female, their average age at the follow-up interview was 22.6 years (SD = 1.3 years), and 80.2% were Caucasian (see Table 4.2). The average number of years of education completed by the follow-up interview was 13.1 (SD = 1.88). Eighty-two percent of the sample has never married, 15.6% are cohabitating or married, and 1% were divorced. Nineteen percent of the sample currently receives Medicaid and 15% receive public assistance. At baseline, 19.5% of the follow-up participants reported that their household income was between \$0-\$39,000; 34.1% reported household income between \$40,000 and \$79,000; and 10.2% reported household income of \$80,000 and above. Five percent of the participants’ families were receiving public assistance.

Procedures

Institutional Review Board approval from the University of Michigan Medical School was obtained for both the baseline and the follow-up stages of this study.

Baseline Study Procedures: The purpose of the baseline study was to examine the efficacy of an intervention for suicidal adolescents, the Youth Nominated Support Team – Version II. Inclusion criteria were (a) 13–17 years of age and (b) significant suicidal ideation or suicide attempt within the past 4 weeks. Parent/guardian written informed consent and youth written informed assent were obtained. Of study-eligible adolescents, 43% were recruited. Baseline assessments occurred during or within 1 week of hospitalization. Follow-up assessments were conducted at 6 weeks, 3 months, 6 months, and 12 months at either an outpatient office adjacent to the hospital or in the participant’s home. Adolescents were paid \$30, and parents/guardians were paid \$20 for participation in each assessment. For a full description of the baseline study, please see King et al. (2009).

Follow-up Study Procedures: During the initial phase of the current study, participants were contacted via a letter to the address that they had provided in the baseline study, or if needed, an address that was found through internet searching. This letter explained the purpose of the study and included an opt-out post-card with their unique identification code printed on it. The recipients were instructed to return the postcard if they did not want any further contact from the study team. If an opt-out postcard was not received after 3 weeks, we then attempted to contact the participant by telephone in order to conduct the screen and arrange for an in-person interview to complete the study questionnaires. At this stage of the study, the interviews were all conducted in person.

Due to difficulties in locating participants, the Institutional Review Board later approved the use of Facebook and MySpace websites to locate and contact participants. These participants were sent a message from a study specific YST Research Facebook or MySpace account explaining the purpose of the study and asking them to contact us if they would like to participate. We only sent messages to participants who had a public profile, enabling us to match birth dates and other distinguishing evidence in case the participant shares the name of another Facebook member.

During the initial phase of the study, the follow-up interview was conducted in-person, with research staff going to the participants' home to conduct the interview. Research staff informed participants of the general nature of the study, their privacy rights, expectations for their participation, the voluntary nature of their participation, and that their participation can be withdrawn at any time. Written informed consent was obtained from each participant and they received a \$40 payment at the time of the interview as compensation for their time.

Due to logistical and financial difficulties of doing the interviews in person, the Institutional Review Board later approved doing the interview via mail and telephone. In this situation, the participant was mailed the consent form, the subject fee payment form, and copies of certain measures to complete and return via mail. The participant was required to send back a signed copy of the consent form and participant payment form before the telephone interview could be completed. Payment was mailed to the participant upon completion of the phone interview. Consent forms were filed in a confidential research file and copies were given to the subject.

Study Measures

Baseline Measures:

- i) **The YST-II Baseline Demographics Form:** Collected information on the gender, ethnicity/race, parental education level, income level, and receipt of public assistance.

- ii) **Schedule for Affective Disorders and Schizophrenia for School-Age Children (KSADS-PL; Kaufman et al., 1997):** The KSADS-PL is a structured diagnostic interview that is based on the DSM-IV. Adolescents and parents were independently administered the affective disorders section of the KSADS-PL; adolescents were also interviewed about other disorders. Interviewers were trained mental health professionals who completed 20 hours of KSADS-PL training and established inter-rater reliability with a senior diagnostician on four consecutive interviews prior to study onset. For the purposes of this study the variable “Victim of Sexual Abuse” variable was used.

- iii) **Diagnostic Interview Schedule for Children-IV (DISC-IV; Shaffer et al., 2000):**
The DISC-IV is a highly structured diagnostic interview that is designed to assess for more than 30 psychiatric disorders in children and adolescents. For the purposes of the baseline assessment, only the section on suicidal ideation and attempts were used. Participants were asked about suicidal ideation, suicide attempt and medically serious suicide attempt in the last 4 weeks, and ever in their lifetime as a way of determining if they met the study inclusion criteria. In general, the DISC-IV shows moderate to good diagnostic reliability and has been widely used in NIMH studies.

- iv) **The Children's Depression Rating Scale-Revised (CDRS-R; Poznanski & Mokros, 1996):** The CDRS-R is a semi-structured interview that was conducted with adolescents to assess depressive symptoms within the previous two weeks. Of the 17 items of CDRS-R, three items (sleep, appetite, and tempo of speech) are rated from 1 to 5 and the other 14 items from 1 to 7 in the direction of increasing pathology. Scores range from 0-100, with scores over 60 being indicative of depression. Inter-interviewer reliability on the baseline assessment for total scores was high (mean alpha across raters =.98).
- v) **The Suicidal Ideation Questionnaire-Junior (SIQ-JR; Reynolds & Mazza, 1999):** The SIQ-JR is a 15-item self-report questionnaire assessing the frequency of a wide range of suicidal thoughts. Scores on the SIQ-JR can range from 0-90, with 31 being the suggested clinical cut-off. Total scores have excellent, well-documented psychometric properties (Reynolds, 1999).
- vi) **The Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1996):** The CAFAS was administered to parents to assess their child's level of functional impairment. The CAFAS has demonstrated high test-retest reliability, construct validity, and predictive validity. Subscales used in this study were: School/Work (functioning in group/educational setting); Home (observation of reasonable rules and performance of age appropriate tasks); Behavior Toward Others (appropriateness of behavior towards adults and peers); Moods/Emotions. Possible scores on each subscale range from 0-30, with the total score ranging from 0-120. Higher scores indicate more difficulties in functioning.
- vii) **Beck Hopelessness Scale (BHS; Beck & Steer, 1993):** The BHS is a 20-item self-report scale contains 20 true or false statements about participants' positive and

negative beliefs about the future. Scores range from 0-20, with higher scores indicating higher levels of hopelessness. The authors have demonstrated high levels of internal consistency, concurrent validity, and construct validity.

viii) **Perceived Social Support from Family Scale** (PSS-Fa; Procidano & Heller, 1983):

The PSS-Fa is a 20-item self-report scale that specifically assessed adolescent's perception of social support from family members. The scale has excellent internal consistency and concurrent validity (Cumsille & Epstein, 1994).

Follow-Up Measures

- i) **Medicaid Study Phone Screen:** Twelve demographic items specifically designed for this study were used to record current living situations, education history, employment status, and a summary of their use of health care services and public assistance.
- ii) **Columbia Suicide-Severity Rating Scale** (C-SSRS; Posner et al., 2007): The Columbia Suicide-Severity Rating Scale is a standardized measure of suicidal ideation and suicidal behavior that is administered in a clinical interview format. It assesses for frequency, duration, controllability, reasons, and deterrents of suicidal ideation; lethality of actual attempts; interrupted and aborted attempts; and preparatory action taken since the last assessment. The C-SSRS is being widely used in National Institute of Mental Health studies and is frequently recommended by the FDA as a way of monitoring suicide risk in high risk participants.
- iii) **Beck Scale for Suicide Ideation** (BSSI; Beck et al., 1993): The BSS is a 21-item self-report tool that measures both active and passive suicidal ideation over the past

week. In testing, subjects using this measure reported more severe suicidal ideation than the clinician ratings, suggesting that this may be a more thorough and accurate measure of suicidal ideation. The BSSI correlates positively with a history of past suicide attempt. Total BSSI scores range from 0 to 38 points, with a clinical cut-off of 10.

- iv) **The Alcohol and Drug Questionnaire** (ADQ; Madhukar & Trivedi, 2007): The ADQ is an 8 item clinician rated scale used to rate alcohol, drug, and tobacco use during the last 2 weeks that was developed for the Depression Trials Network Suicide Assessment Methodology Study. Participants who answered positively to “In the past 2 weeks have you consumed 3 or more alcoholic drinks within a 3 hour period on more than one occasion?” were considered to have current alcohol abuse. Participants who answered yes to “In the last 2 weeks, have you ever taken any drugs to get high, to feel better, or to change your mood?” were considered to be positive for drug abuse.

- v) **The Trauma History Questionnaire** (THQ; Green, 1996): The THQ is a 24-item self report measure that examines experiences with potentially traumatic events such as crime, general disaster, and sexual and physical assault using a yes/no format. For the purposes of this study, we used the sexual abuse/assault questions: “Has anyone ever made you have intercourse, oral, or anal sex against your will?” and “Has anyone ever touched private parts of your body, or made you touch theirs, under force or threat?” For each event endorsed, respondents were then asked to provide the frequency of the abuse, their age at the time of the event, and the nature of the relationship of the abuser.

vi) **Quality of Life Inventory (QOLI; Frisch, 1994):** The QOLI is a 32-item self-report questionnaire that assesses importance and satisfaction across 16 life areas (e.g., work, health, self-esteem). Importance is assessed on a 3-point scale 0 = *not at all important* to 2 = *very important*. Satisfaction is rated on a 6-point scale -3 = *very dissatisfied* to +3 = *very satisfied*. The sum of the importance and satisfaction scores for each item, divided by the number of non-zero items, provides an overall mean quality of life score, ranging from -6 to 6. QOLI scores between 2.00 and 3.75 are considered to be in the typical range for college students (between the 25th and 75th percentile). Test-retest coefficients for the QOLI range from .80 to .91 and significant negative correlations with psychopathology have been reported by the authors.

vii) **Quick Inventory of Depressive Symptomatology, Self-Report 16-Item (QIDS-SR; Rush et al., 2003):** The QIDS-SR is a 16-item scale derived from the 30-item Inventory of Depressive Symptomatology (IDS). Possible scores range from 0-17, and a clinical cut-off score of 11 indicates that the individual meets criteria for moderate depression. The QIDS-SR measures criteria relevant to DSM-IV diagnostic criteria. The QIDS-SR has been found to be highly consistent with the IDS and the Hamilton Rating Scale for Depression, and is therefore considered a valid measure of depressive symptoms (Rush et al., 2003).

viii) **Social Adjustment Scale, Self-Report (SAS-SR; Weissman, 1999):** The SAS-SR uses 54 items to measure 8 dimensions of social adjustment in both instrumental and expressive ways. The scale is often used to evaluate the outcomes of psychotherapy research, and is particularly well-suited to determine if treatments are effective in

reducing the economic and social costs associated with an untreated mental disorder. For this study, we used the 4 dimensions most relevant to our younger adult subjects, Work for Pay, Student, Social and Leisure, and Family Unit. Average scores were computed for each subscale, and an overall average score (range 1-5) was used as an indicator of total social adjustment. A higher score indicates poorer levels of social adjustment.

ix) **Service Utilization Questionnaire** (SUQ; Grant et al., 2004): The SUQ measures service utilization since the baseline interview. This questionnaire is a modified section of the services utilization assessment used by the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). As part of this structured interview, participants report the nature and frequency of services that they have received for mental health and substance-related problems. The NESARC interview has sound reliability and validity (Üstün, 1997).

Data Analyses

Descriptive statistics were used to describe the sociodemographic and clinical outcomes of the follow-up sample. Bivariate analyses were carried out to examine sociodemographic and clinical differences between those who completed the follow-up versus those who did not, and those with a history of sexual abuse and those without. Proportions (for qualitative variables) were compared using the Chi-squared test, while means (for quantitative variables) were compared using Student's t-test.

Pearson correlation matrices were used to determine significant correlations both within and between baseline and follow-up variables in order to select variables to be further analyzed. Step-wise multiple hierarchical and logistic regression analyses were

used to assess the ability of sexual abuse to predict outcomes of participants in relation to other controlled for variables. To reduce multicollinearity, centered variables were constructed for the regression analyses.

Dividing the sexually abused sample into those with resilient and non-resilient outcomes, we examined whether there are any risk/resiliency factors that differ between the two groups.

Chapter 5: Results

Participant Retention Analyses: Comparison of Baseline Characteristics between Those Who Completed the Follow-Up and Those Who Did Not

In order to determine whether the participants who completed the follow-up interview were significantly different in any measured way from those who did not, we compared the two groups on their baseline sociodemographic and clinical characteristics. There were no significant baseline sociodemographic (see Table 5.1) or clinical differences (see Table 5.2) between those who completed the follow-up interview and those who did not, indicating that the individuals who completed the follow-up interview are likely comparable to those who did not. While there are innumerable variables that we have not measured that could be impacting these two groups differently, it is necessary to make this assumption in order to proceed with describing the outcomes of those who participated in the follow-up interview.

Baseline Clinical Characteristics of the Follow-Up Sample

Given that the baseline interviews were conducted while the participants were psychiatrically hospitalized for suicide-related behavior, they understandably report very high levels of psychopathology and suicide-related behaviors (see Table 5.2). For those who completed the follow-up interview, their mean score on the CDRS-R at baseline was 63.75 (SD = 13.5), with 84% of the sample meeting the clinical cut-off score for depression. Their baseline mean hopelessness score was 10.2 (SD = 6), with 46.9% of

participants being above the clinical cut-off for hopelessness. Their baseline mean SIQ-JR score was 50.11 (SD = 21.4), with 74.5% being above the clinical cut-off score for suicidal ideation. Twenty five percent of participants at baseline had no history of a suicide attempt, 36.5% had made one suicide attempt, and 38.5% had made two or more suicide attempts. The average CAFAS score was 107.61 (SD = 33.69), indicating a very high level of functional impairment. Almost 20% of participants reported a history of sexual abuse before the baseline interview.

Clinical Characteristics of the Follow-Up Sample

Table 5.3 provides information on the clinical characteristics of the sample at the follow-up interview. The mean score on the QIDS was 8.87 (SD = 4.74), with 33.3% of participants meeting clinical cut-off for depression. The mean BSS score was 3.6 (SD = 3.99), with 11.8% of participants being above the clinical cut-off for current suicidal ideation. Thirty one percent of participants reported making a suicide attempt since the baseline interview and 47.9% reported having made two or more suicide attempts in their lifetime. One third and one fifth of the sample met criteria for substance and alcohol abuse respectively. The mean quality of life score was 1.54 (SD = 1.54) and the mean social adjustment score was 2.15 (SD = .71).

Service Utilization Between Baseline and Follow-Up

Eighty one percent of participants reported receiving any mental health services, with 63.5% receiving psychotherapy and 59.4% receiving psychiatric medication since the baseline interview (see Table 5.4). Thirty percent of the participants had been psychiatrically re-hospitalized, 12.5% had been in a residential drug or alcohol treatment center, and 11.5% had received outpatient drug or alcohol treatment. Almost 22% of the

sample reported having a probation or juvenile corrections officer and 19.8% of them reported being in detention center, training school, or jail.

Prevalence of Sexual Abuse Histories Among Participants

Table 5.6 and Figure I provide a breakdown of the sexual abuse histories of participants. Among the follow-up sample, 19 participants (19.8% of total sample) reported sexual abuse at baseline, 21 (21.9%) youth reported sexual abuse during the follow-up period, 30 (31.3%) reported sexual abuse either at baseline or during the follow-up period, 10 (10.8%) reported sexual abuse at both baseline and during the follow-up period, 9 (9.3%) reported sexual abuse at baseline but not at follow-up, and 11 (11.5%) reported sexual abuse during the follow period but not at baseline.

Comparison of Sociodemographic Characteristics of Participants With and Without Sexual Abuse Histories

Table 5.6 shows that those with a history of any sexual abuse (either baseline or follow-up or both) were significantly more likely to be female ($t = 6.38$; $df = 1$; $p < .05$) and reported higher rates of receiving public assistance during the follow-up period than those without sexual abuse ($t = 5.71$; $df = 1$; $p < .05$), although the small number of participants in the group of sexually abused and receiving public assistance ($n=4$), warrants precaution in interpretation. There were no other significant current demographic differences observed between those with a history of any sexual abuse and those without.

Comparison of Clinical Characteristics of Participants With and Without Sexual Abuse Histories

When we compared the baseline clinical characteristics between the two groups (see Table 5.7), those with a sexual abuse history had significantly higher depression scores ($t = -3.19$, $df = 86$, $p < .01$) and significantly higher functional impairment ($t = -2.97$, $df = 86$, $p < .01$). Those with sexual abuse histories demonstrated a trend toward having significantly higher levels of suicidal ideation at baseline [$t = -1.35$, $df = 85$, $p < .10$]. There were no significant differences in baseline hopelessness or suicide attempt.

When the two groups were compared on current clinical characteristics (see Table 5.8), those with a history of any sexual abuse had significantly higher levels of current depression ($t = -1.84$, $df = 76$, $p < .05$) and were more likely to have made a first time suicide attempt since baseline ($X^2 = 4.39$, $df = 1$, $p < .05$). There were no significant differences between the two groups in any of the other follow-up clinical characteristics (hopelessness, suicidal ideation, suicide attempt, or functional impairment).

Comparison of Service Utilization by Participants With and Without Sexual Abuse

There were no differences in the utilization of mental health, substance abuse, or legal services between those with a history of sexual abuse and those without (see Table 5.9).

Relationships Between Baseline and Follow-up Clinical Variables

Table 5.10 presents a correlation matrix between the baseline variables. Baseline depression was the only variable that was correlated with a history of sexual abuse at baseline ($r = .255$, $p < .01$). There were significant correlations between other clinical variables: baseline hopelessness was positively correlated with baseline depression ($r = .375$, $p < .01$) and baseline suicidal ideation ($r = .528$, $p < .01$), baseline depression was positively associated with baseline suicidal ideation ($r = .416$, $p < .01$), and a suicide attempt in the last year was correlated with a lifetime suicide attempt ($r = .897$, $p < .01$).

When we examined the relationships between follow-up variables, a history of sexual abuse during the follow-up period was not significantly correlated with any of the other follow-up variables (see Table 5.11). Significant correlations were found between depression and suicidal ideation ($r = .489, p < .01$), quality of life ($r = -.640, p < .01$), and social adjustment ($r = -.579, p < .01$). Alcohol use and drug use were significantly related to each other ($r = .444, p < .01$), but not to any other variables. Suicidal ideation was significantly associated with a suicide attempt since baseline ($r = .481, p < .01$), quality of life ($r = -.287, p < .05$), and social adjustment ($r = -.324$). Finally, quality of life and social adjustment were correlated with each other ($r = .548$). All correlations were in the expected direction.

Next we examined the relationship between baseline and follow-up clinical variables (see Table 5.12). Sexual abuse at baseline was positively correlated with sexual abuse during the follow-up period ($r = .762, p < .01$), but was not correlated to any other clinical variables at follow-up. Baseline suicidal ideation was negatively correlated with current alcohol abuse ($r = -.238, p < .05$). All other correlations between baseline and current clinical variables were non-significant.

Predicting Current Depression, Suicidal Ideation, Quality of Life, and Social

Adjustment

Current Depression

Hierarchical multiple regression was used to assess the ability of sexual abuse to predict current levels of depression after controlling for the effects of baseline depression, gender, baseline functioning, current drug abuse, current alcohol abuse, current social functioning, and current quality of life (see Table 5.13). Baseline depression was entered

in step one and explained 1.8% of the variance, a model that was not significant [$F(1, 71) = 1.299, p > .05$]. Gender was entered in step 2 but this did not significantly change the amount of variance explained and this was also not a significant model [$F(2, 70) = .641, p > .05$]. The remaining clinical and social variables (baseline functioning, current drug abuse, current alcohol abuse, current social functioning, and current quality of life) were entered in step 3, and the amount of variance explained increased significantly to 51.6%. The model tested at this step was statistically significant [$F(8, 64) = 8.523; p < .001$]. Finally, any sexual abuse was entered in the final step and the total variance explained increased significantly to 55.4%. This final model remained clinically significant [$F(9, 63) = 8.69, p < .001$]. In the final model the only significant predictors of current depression were: current quality of life ($\beta = -.443; p < .001$), current drug use ($\beta = -.229; p < .05$), current social adjustment ($\beta = -.304; p < .01$), and any sexual abuse ($\beta = .219; p < .05$).

Current Suicidal Ideation

Hierarchical multiple regression was used to assess the ability of sexual abuse to predict current levels of suicidal ideation after controlling for the effects of gender, baseline depression, baseline hopelessness, baseline suicidal ideation, current quality of life, current drug use, current alcohol use, current depression, and current social adjustment (see Table 5.14). Gender and baseline clinical variables were entered in step 1 and explained 11.6% of the variance. The model tested in this first step was not statistically significant [$F(4, 66) = 2.162, p > .05$]. Current clinical and social variables were entered in step 2 and the total variance explained by the model increased to 36.8%, a statistically

significant increase. Adding any sexual abuse to the model increased the amount of variance explained to 38.1%, but this was not a statistically significant increase. Both model 2 [$F(9, 61) = 3.942$; $p < .001$] and model 3 [$F(10, 60) = 3.699$; $p < .001$] were statistically significant models. In the final model, only two variables predicted current suicidal ideation: baseline hopelessness ($\beta = -.295$, $p = .032$) and current depression ($\beta = .417$, $p = .009$).

Current Quality of Life

Hierarchical multiple regression was performed to assess the ability of sexual abuse to predict current levels of quality of life after controlling for current depression, gender, current drug use, current alcohol use, current suicidal ideation, and current social adjustment (see Table 5.15). Current depression was entered in the first step and accounted for 39% of the variance in quality of life scores. The addition of the other variables in step 2 (gender, current drug use, current alcohol use, current suicidal ideation, and current social adjustment) and step 3 (sexual abuse) did not explain any additional significant variance. All 3 models were statistically significant [model 1: $F(1, 72) = 47.59$; $p = .000$; model 2: $F(6, 67) = 9.837$; $p < .001$; and model 3: $F(1, 72) = 8.308$, $p < .001$]. In the final model, the only variables that predicted current quality of life were current depression ($\beta = -.536$; $p = .000$) and social adjustment ($\beta = -.272$; $p = .018$).

Current Social Adjustment

Hierarchical multiple regression was performed to assess the ability of sexual abuse to predict current levels of social adjustment after controlling for the effects of current

depression, gender, current drug use, current suicidal ideation, current alcohol use, and current quality of life (see Table 5.16). Current depression was entered in the first step and explained 33.5% of the variance. The addition of the other clinical and social variables and sexual abuse did not significantly increase the amount of variance explained. All three models were significant [model 1: $F(1,72) = 36.22$; $p = .000$; model 2: $F(6, 67) = 7.61$; $p = .000$; model 3: $F(7,67) = 6.65$, $p = .000$.] In the final model, the only significant predictors of current social adjustment were current depression ($\beta = -.353$; $p = .016$) and quality of life ($\beta = -.300$; $p = .018$).

Comparison of Sexually Abused Participants with Resilient versus Non-Resilient

Outcomes

Among the sexually abused participants, 46.6% of them met criteria for depression at the follow-up interview (see Table 5.17). When we compared this group to the non-depressed sexually abused group, they reported significantly higher current suicidal ideation ($t = -2.94$, $df = 12$, $p < .01$), significantly poorer quality of life ($t = 2.85$; $df = 25$; $p < .01$), and significantly poorer social adjustment scores ($t = -4.39$, $df = 25$, $p < .01$).

Using current depression (which is related to higher levels of current suicidal ideation and lower levels of quality of life and social adjustment) as a proxy for a non-resilient outcome, we divided the sexually abused participants into “resilient” and “non-resilient” groups (see Table 5.18). Fifty-three percent of the sexually abused participants fit into this resilient group. We were not able to identify any resiliency factors, however.. There were no significant differences in age, baseline household income, baseline

perceived social support from family, years of education, or receipt of mental health services since baseline.

Chapter 6: Discussion

The aims of the current study were three-fold: to examine to long term outcomes of youth who have been psychiatrically hospitalized for suicide-related behavior, to investigate the relationship between experiencing sexual abuse and suicide-related behavior, and to explore resiliency among those with sexual abuse. The present study differed from much of the previous literature in the breadth and depth of the outcomes that were examined. In addition to examining outcomes specifically related to mental health disorders (which is often the focus of our field), service utilization, social functioning, and quality of life outcomes were also studied. Including variables from multiple spheres of the participants' lives provides a broader knowledge base regarding the broad spectrum of long term outcomes experienced by both youth with severe suicide-related behaviors and youth suicide-related behaviors and sexual abuse histories. In addition, much of our knowledge of the relationship between sexual abuse and suicide-related behaviors among youth in clinical/psychiatric settings comes from cross-sectional research. The longitudinal design of this study helps to address this gap in the field.

In this final chapter, the results pertaining to each of the 3 research aims and their respective hypotheses will be discussed, the limitations of the study will be examined, and future directions for research will be suggested.

Aim 1: Examine the Psychological and Social Functioning, and Service Utilization of the Total Follow-Up Sample

The first aim of this study was to examine the psychological and social outcomes, and service utilization of the entire follow-up sample in order to describe how adolescents who have been psychiatrically hospitalized for suicide-related behaviors are functioning approximately 6 years post hospitalization. Given that there were no significant baseline sociodemographic or clinical differences between those who completed the follow-up versus those who did not, we can be reasonably confident that the samples are not different in any critical way, and therefore are representative of the remainder of the sample. It is important to note from the outset that this is a sample of adolescents/young adults who are not psychologically representative of the general population due to their history of psychiatric hospitalization for suicide-related behaviors. The results of this study should not be extrapolated to the general population, but rather to young adults with similar psychiatric histories.

A significant level of psychopathology was observed among the follow-up sample. At the time of the follow-up interview, 33% participants were above the clinical cut-off for depression as measured by the Quick Inventory for Depressive Symptoms (Rush et al., 2003), and 12% met the clinical cut-off for current suicidal ideation as measured by the Beck Suicide Scale (Beck et al., 1993). In addition, one-third of the participants were above the clinical cut off for drug abuse and one-fifth were above the clinical cut-off for alcohol abuse, as measured by the ADQ (Madhukar & Trivedi, 2007). This combination of depression, suicidal ideation, and drug and alcohol abuse is well established as putting youth at high risk for making a suicide attempt (Shaffer, 1974,

1998; Shaffi, 1998; Gould, 1998, 2003; Foley et al., 2006), and highlights the chronic nature of mental health problems and suicide risk experienced by young adults who were previously hospitalized for suicide related behavior.

Approximately 31% of participants in the follow-up sample had made a suicide attempt since the baseline interview. This reflects a first time suicide attempt for 14.6% of the sample, and going from a single attempter to a multiple attempter for 7.1% of the sample. The remaining 9.3% were multiple attempters at baseline who continued to make additional attempts during the follow-up period. This finding is similar to Prinstein and colleagues' (2008) finding that between one fifth and one quarter of adolescents made a suicide attempt within 18 months of being psychiatrically discharged, and Ekeberg's (2009) finding that 44% of psychiatrically hospitalized adolescents made another attempt over the 9 year follow-up period. This risk of making a new or repeat suicide attempt is very important for clinicians, family members, and adolescents themselves to be aware of in order to prepare for relapse prevention and crisis planning, should a repeat attempt occur.

The average rating that participants reported regarding their quality of life and social adjustment was relatively poor compared to standardized reports on these measures. Firsch (1994) reported that for a similar age group as the follow-up sample, typical Quality of Life scores were between 2.00 and 3.75. Given that the follow-up sample reported a mean score of 1.54 it is clear that they are not experiencing the same quality of life as their peers. Similarly, the current sample reported a mean score of 2.15 (with higher scores meaning poorer adjustment) on the Social Adjustment Scale – Self Report (Weissman, 1999), whereas the average score for non-clinical adults is 1.59.

These findings indicate that not only are the follow-up participants still displaying significant levels of psychopathology, they are also experiencing impairments to their quality of life and social functioning, giving additional weight to the importance of supporting these youth post-hospitalization.

The participants in this study reported a high level of services utilization, ranging from psychotherapy, psychiatric medications, psychiatric hospitalization, and drug and alcohol treatment. A significant number of them also had involvement with the juvenile justice system, with approximately one-fifth reporting that they had been in detention center, training school or jail. This percentage is in line with previous findings that 30-70% of youth in the juvenile justice system have one or more diagnosable mental health disorder (Teplin et al., 2001; Wasserman et al., 2002). This high level of involvement with the legal system is possibly related to the relationship between conduct disorder and suicide-related behaviors (e.g. Brent, 1999; Gould, 2003). Exploring the interplay between psychopathology, involvement with legal systems, and suicide-related behaviors is an important area for future research and intervention development

Taken together, the service utilization data collected by this study indicate the significant public health importance of this research, demonstrating the potential long-term cost associated with adolescent mental health disorders, suicide-related behaviors, hospitalization and other service utilization, and involvement with the legal system.

In summary, from the preliminary analyses of the follow-up sample data, it is clear that these young adults continue to struggle with psychological and social difficulties as they transition into young adulthood. The outcomes of these young adults indicate the importance of viewing this population within a transactional model (as

outlined in Figure I), whereby sociodemographic factors, psychopathology, and environmental stress and/or trauma interact and exacerbate each other over time. As can be seen from the overall outcomes of these young adults, ranging from high levels of depression, suicidal ideation, suicide attempts, social and legal difficulties, and high levels of service utilization, their difficulties rarely lie in just one realm, but in many.

Aim 2: Examine the Relationship between Sexual Abuse and Psychological Functioning, Social Outcomes, and Service Utilization

The second aim of this study was to examine the effects of sexual abuse on the psychological functioning, social outcomes and service utilization of the participants. The prevalence of experiencing sexual abuse in the current sample (31.3%) is higher than we would expect in the general population which a meta-analysis of 16 studies reported to range from 12-17% among females and 5-8% among males (Gorey, 1997). When we compare it to other clinical populations, however, the rates are very much in line with previous studies. For example Edwall (1989) and Shaunesey (1993) both found that approximately one third of their sample of psychiatrically hospitalized participants had histories of sexual abuse. The significant gender difference found among those who had experienced sexual abuse (with the majority of the participants reporting sexual abuse being female) is also in line with findings from previous studies (Fergusson et al., 1996; Finkelhor, 2007; Sobsey, 1997). The low number of males endorsing sexual abuse prevented any examination of gender differences in the current study.

It was hypothesized that participants with a history of sexual abuse at baseline would have higher levels of baseline depression, hopelessness, suicidal ideation, suicide attempt history, and functional impairment than participants without sexual abuse. Only

two of these hypotheses were supported by the data; depression and functional impairment. These findings are consistent with the findings of other cross sectional studies on sexually abused adolescents and young adults (e.g. Silverman et al, 1996; Fergusson 2008; Putnam et al, 2003).

It was also hypothesized that participants with sexual abuse at baseline and/or follow-up would have higher levels of current depression, suicidal ideation, suicide attempt history, drug abuse, alcohol abuse, and service utilization, and lower levels of quality of life and social adjustment. The results showed that participants with sexual abuse histories had higher levels of current depression (similar to the baseline finding), and were more likely to have made a first time suicide attempt during the follow-up period than those without sexual abuse. This heightened risk of becoming a first time suicide attempter is an important finding, warranting further analysis to determine the temporal relationship of the sexual abuse and making a first time suicide attempt. This finding also suggests the need to monitor youth with suicide-related behavior and sexual abuse histories closely for future suicide attempt risk.

The lack of support for the other hypotheses (both at baseline and follow-up) were in contrast to previous research which has found higher levels of suicide-related behaviors and functional impairment (e.g. Fergusson et al., 2008; Lipschitz, 1999b; Silverman et al., 1996). This is possibly due to the fact that the current sample are a highly disturbed group and have many risk factors other than sexual abuse, that make it difficult to find support for the effects of sexual abuse over and above all of the other challenges these adolescents were facing at the time of their hospitalization. Another possible explanation would be the “file drawer” phenomenon (Rosenthal, 1979), whereby

studies that find significant results are more likely to be published than those that did not find such results.

Hierarchical multiple regression analyses showed that a history of sexual abuse (either before the baseline interview or during the follow-up period) predicted current depression, even after controlling for baseline levels of depression, gender, baseline hopelessness, current drug and alcohol abuse, baseline functional impairment and current quality of life. This finding suggests a strong link between sexual abuse and depression, which has been found in many previous studies (e.g. Silverman et al, 1996; Fergusson 2008; Putnam et al, 2003). The regression analyses also revealed that current quality of life, current drug use, and current social adjustment also predicted current depression, suggesting the importance of social factors in addition to sexual abuse.

Contrary to our hypotheses, a history of sexual abuse was not able to statistically predict higher levels of current suicidal ideation, quality of life, and social adjustment. As mentioned previously, it is possible that the high levels of psychological, legal, and social difficulties among the current sample makes it difficult to disentangle the effects of sexual abuse from the multitude of other co-occurring risk factors.

Aim 3: Examine Resilience Among Survivors of Sexual Abuse

The third aim of the study was to conduct exploratory analyses to identify factors associated with resilient outcomes among those with sexual abuse histories. Because this study was not specifically designed to measure resilience in any standardized way, we used current depression (which was significantly associated with higher suicidal ideation, lower quality of life and poorer quality of life scores) as a proxy for assigning participants with sexual abuse to resilient or non-resilient outcomes. A similar method

was employed by Liem et al. (1997), whereby low depression scores and high self-esteem ratings were used as a proxy for resiliency. The finding that over half of the sexually abused participants were considered to have resilient outcomes was a hopeful one. The current study was unable to determine any factors associated with resilient outcomes among those who were sexually abused, although the previously mentioned finding of recency being an important factor in current functioning may point to “time since the abuse” being a possible resiliency factor that has not been explored in the literature to date.

Summary and Conclusions

This 6 year follow-up study of 96 young adults who were previously psychiatrically hospitalized for suicide-related behavior provided a unique opportunity to examine their overall outcomes, in addition to the specific outcomes of youth with sexual abuse histories. The high levels of psychopathology, suicide-related behaviors, low quality of life and social adjustment for a significant number of these young adults are concerning findings, strengthening the arguments for increasing support and treatment for youth who struggle with mental health disorders and suicide-related behaviors. While there were some concerning outcomes among participants with sexual abuse histories (increased depression, higher functional impairment, and an increased risk of making a first time suicide attempt), there was also evidence of resiliency among a significant proportion of the sexually abused participants.

Limitations

There are several important limitations to the current study that should be noted. The first limitation concerns recruitment, retention, and sample size. The participation rate in the

baseline study was 43%. Although this rate was similar to other studies conducted with similar populations and study designs, it does limit the generalizability of the original study's findings (King et al., 2009). The participation rate of 58% in the current study was relatively high, considering the participants' mental health history and the fact that this study was not initially designed to be a longitudinal study of 6 years. However, our inability to locate 30% of the participants and the refusal rate of 12% may also limit the generalizability of the current findings. It is possible that the youth we were able to locate and who agreed to participate in the follow-up interview may have been functioning better than those we were unable to find or those who refused participation. Retention analysis was used to try to safeguard against some of these possible methodological problems, whereby all available baseline sociodemographic and clinical information was compared across the participants who completed the follow-up interview and those who did not.

The second limitation relates to standardized measurement issue. While every effort was made to use instruments that have been well researched and have strong psychometric properties, there were several that were somewhat lacking in this regard. For example, the Columbia Suicide Severity Rating Scale has been used widely in national studies but has yet to be empirically validated. Also of note, the necessary change from conducting interviews in person to a combination of mail and telephone may also have had some effect on participants' responses that we could not control for.

The third limitation is in regards to the homogeneity and small size of the sample. The sexually abused participants in the current sample were predominantly female, therefore preventing us from analyzing gender differences. Once we divided the sample

into those with and without a history of sexual abuse, the groups became relatively small, possibly limiting the statistical ability to detect true differences. The small sample size also limited analyzing any racial/ethnic or socioeconomic differences, in addition to other factors such as the type, severity, and duration of the abuse, and the nature of the relationship between the perpetrator and the participant.

Finally, asking participants at the follow-up interview to recall their sexual abuse experiences over a period of approximately 6 years means that we have to rely on the accuracy of participants' memories and their willingness to disclose their sexual abuse histories. This is a weakness that is inherent in all studies of this nature and one that cannot be necessarily solved by including third party information such as legal proof of sexual abuse, as many cases are not reported and/or substantiated. In an attempt to ensure that the same sexual abuse experience was not reported twice (i.e. in the baseline interview and in the follow-up interview), the timing of the reported abuse experience were cross checked for accuracy when the timelines were within a short period of each other.

Future Directions

The current study represents a very small amount of the depth and breadth of the data collected over the 6 years of this study. More fine-grained analyses of the type and severity of the sexual abuse, the presence of other forms of abuse (e.g., physical abuse), and the relationship of the perpetrator to the victim are also planned. The data collection is still underway, so larger sample sizes are anticipated for further analysis.

More generally, suggested directions for future research include studying the relationship between sexual abuse and suicide-related behaviors. The dearth of research on sexual abuse and suicide-related behaviors with males represents a concerning gap in the literature, one which it is hoped will be addressed by additional data collection with the remaining males in this follow-up sample. The few studies that report on small numbers of males suggest that the effects of sexual abuse on suicide-related behaviors may be especially deleterious, warranting future research.

Qualitative studies asking youth with sexual abuse about whether they perceive there to be a direct link between their sexual abuse experiences and their suicide-related behavior would be a very valuable line of investigation to follow. This may provide us with some understanding of the mechanisms as to how sexual abuse might lead to suicidal behavior, which would in turn help to develop interventions specifically targeted for sexually abused and suicidal youth. Further research to uncover resiliency factors is also important so that we can identify youth at risk for poor outcomes and learn from those with more positive outcomes, leading to better prevention and intervention programs in the future.

Finally, the overlap between sexual abuse, suicide-related behaviors, and contact with the legal system, warrants further investigation. Given high number of youth in the current sample that had contact with the legal system, and data that suggest that a high percentage of incarcerated youth suffer with mental health disorders (Teplin et al., 2001; Wasserman et al., 2002), it is clear that these are pressing issues for the health and well-being of our young people. Future research examining the relationship between these variables would allow the field to develop appropriate interventions that would either

prevent youth with mental health disorders from becoming involved in the legal system, or more appropriately treat and rehabilitate youth in juvenile justice system who are also struggling with mental health disorders.

Figures

**Figure I: Transactional Model for Understanding Suicidal Behavior in Youth with Sexual Abuse
(Adapted from King, C.A., 1997)**

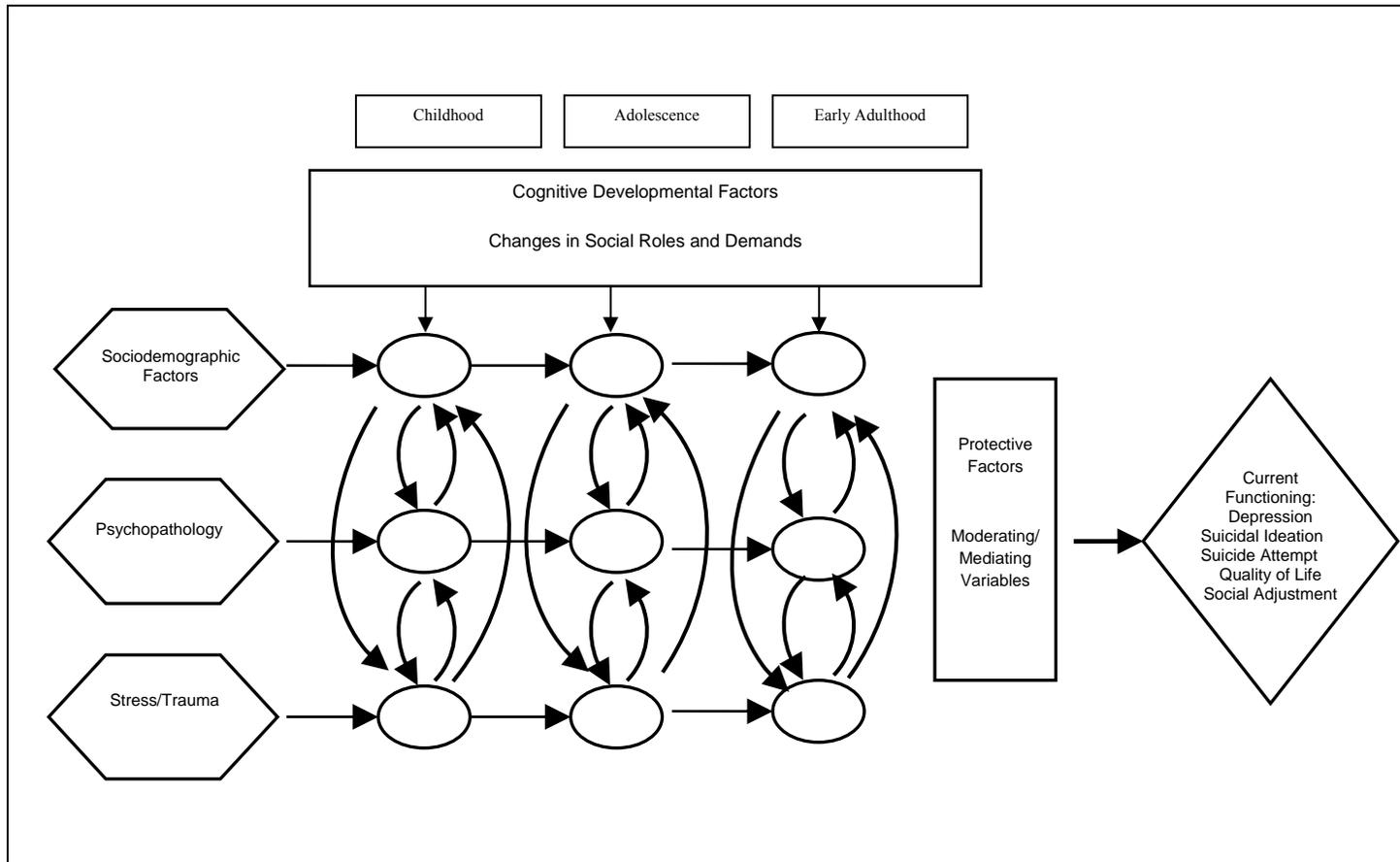
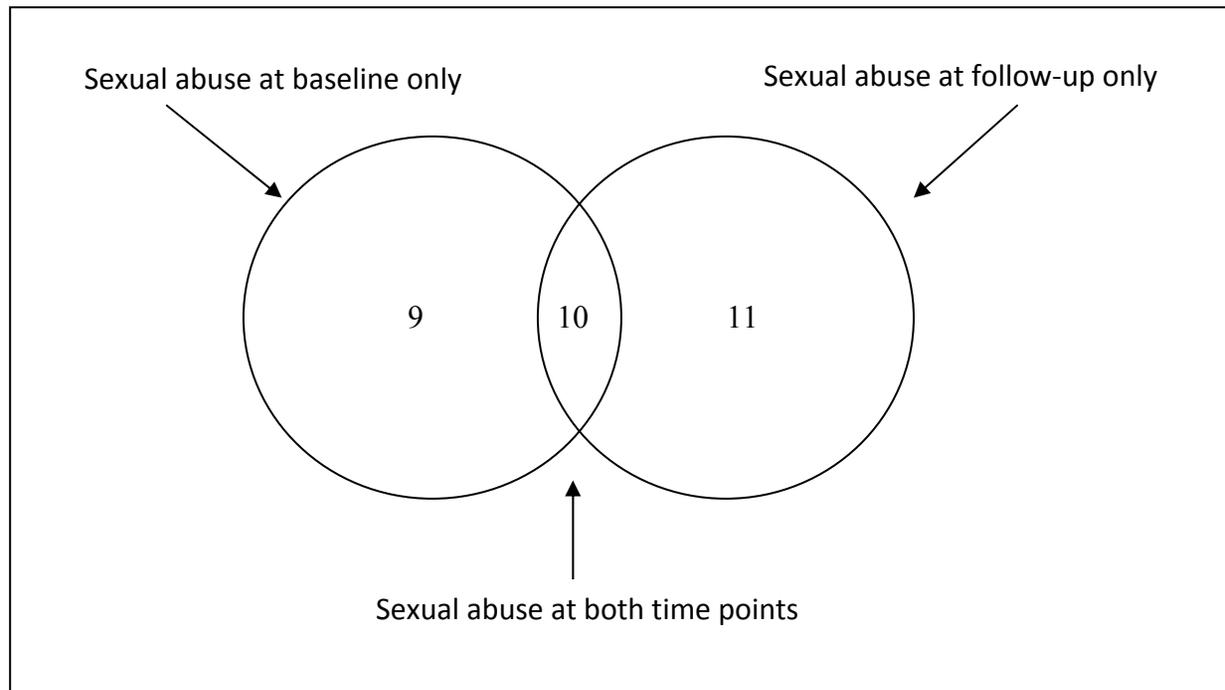


Figure II: Sexual Abuse at Baseline Only, Follow-up Only, and at Both Time Points



Tables

Table 4.1 Participant Recruitment Data

Participants	n (%)
Attempted to Contact	166
Completed follow-up interview	96 (58%)
Refused participation	20 (12%)
Unable to locate	50 (30%)

Table 4.2 Sociodemographic Characteristics of Follow-Up Sample

	<i>n (%) or M (SD/range)</i>
Gender	
Female	71 (74.0%)
Male	25 (26.0%)
Age at baseline	15.6 (1.23)
Age at follow-up	21.6 (1.30)
Race/Ethnicity	
Caucasian	77 (80.2%)
African American, Latino, Asian, Pacific Islander, Native American, Other	11 (12.5%)
Household Income at baseline	
\$0-\$39,000	16 (19.5%)
\$40,000-\$79,000	28 (34.1%)
\$80,000 and higher	33 (40.2%)
Don't Know/Refused to Answer	5 (6.1%)
Family receiving public assistance at baseline	5 (5.2%)
Participant receiving public assistance at follow-up	15 (15.6%)
Participant receiving Medicaid at follow-up	19 (19.8%)
Years of education completed at follow-up	13.1 (1.88)
Marital status at follow-up	
Never married	79 (82.3%)
Cohabiting/Married	14 (15.6%)
Divorced	1 (1.0%)
Number of years since baseline interview	6.1 (5.7-7.0)

Table 5.1 Comparison of Baseline Sociodemographic Characteristics between Participants Who Completed the Follow-Up and Those Who Did Not

	<i>Completed the Follow-Up Interview (N=96) M (SD) or n(%)</i>	<i>Did Not Complete the Follow-Up Interview (N=70) M (SD) or n(%)</i>	<i>X² or t (df)</i>	<i>p</i>
Gender				
Female	74.0%	64.0%	1.37 (1)	.242
Male	26.0%	36.0%		
Race/Ethnicity				
Caucasian	80.2%	83.8%	0.43 (1)	.513
African American, Latino, Asian, Pacific Islander, Native American, Other	12.5%	16.2%		
Age at Baseline	15.6 (1.23)	15.8 (1.24)	-1.20 (154)	.233
Household Income				
\$0-\$39,000	16 (19.5%)	23 (34.3%)	5.21 (3)	.157
\$40,000-\$79,000	28 (34.1%)	21 (31.3%)		
\$80,000 and higher	33 (40.2%)	18 (26.9%)		
Don't Know/Refused to Answer	5 (6.1%)	5 (7.5%)		

* = $p < .05$; ** = $p < .01$; *** = $p < .10$ (two-sided)

Table 5.2 Comparison of Baseline Clinical Characteristics between Participants Who Completed the Follow-Up and Those Who Did Not

	Completed the Follow-Up Interview (N=96) M (SD) or n (%)	Did Not Complete Follow-Up Interview (N=70) M (SD) or n (%)	X² or t (df)	p
Depression	63.75 (13.5)	64.57 (14.25)	-0.36 (153)	.718
Hopelessness	10.02 (6.0)	9.50 (6.30)	0.53 (153)	.600
Suicidal ideation	50.11 (21.4)	46.43 (21.35)	1.07 (153)	.288
Presence of a suicide attempt	64 (72.7%)	50 (73.5%)	0.02 (1)	.911
Lifetime multiple attempter	37 (42.0%)	23 (33.3%)	1.10 (1)	.295
Functional impairment	107.27 (32.97)	108.06 (34.87)	-0.14 (153)	.866
∞ Presence of sexual abuse history	19 (21.6%)	17 (25.0%)	0.25 (1)	.616

* = p < .05; ** = p < .01; *** = p < .10 (two-sided)

Table 5.3 Current Clinical Characteristics of Follow-Up Sample

	<i>M (SD) or n (%)</i>
Depression	8.87 (4.74)
Above clinical cut-off for depression	28 (33.3%)
Suicidal ideation	3.60 (3.99)
Above clinical cut-off for suicidal ideation	10 (11.8%)
Suicide attempt since baseline	30 (31.3%)
First time suicide attempt since baseline	14 (14.6%)
Went from single attempter to multiple attempter since baseline	6 (7.1%)
Multiple attempter at baseline who made subsequent attempt(s)	9 (9.4%)
Two or more suicide attempts in lifetime	46 (47.9%)
Above Cut Off for Drug Abuse	32 (33.0%)
Above Cut Off for Alcohol Abuse	20 (20.8%)
Quality of life	1.54 (1.54)
Social Adjustment	2.15 (0.71)

Table 5.4 Service Utilization Among Follow-Up Sample

	<i>n (%) or M (SD)</i>
Received any mental health services	78 (81.3%)
Received psychotherapy	61 (63.5%)
Taken psychiatric medication	57 (59.4%)
Psychiatric hospitalization	29 (30.2%)
Residential drug or alcohol treatment center	12 (12.5%)
Outpatient drug or alcohol treatment	11 (11.5%)
Probation or juvenile corrections officer	21 (21.9%)
Detention center/training school/jail	19 (19.8%)

Table 5.5 Rates of Reported Sexual Abuse Histories

	n (%)	# female
Sexual abuse at baseline	19 (19.8%)	19
Sexual abuse during follow-up period	21 (21.9%)	19
Sexual abuse at either baseline or during follow-up period	30 (31.3%)	28
Sexual abuse at both baseline or during follow-up period	10 (10.4%)	10
Sexual abuse at baseline but not during follow-up	9 (9.3%)	9
Sexual abuse at during the follow-up period but not at baseline	11 (11.5%)	9

Table 5.6 Comparison of Current Sociodemographic Characteristics of Participants With and Without a History of Sexual Abuse

	<i>Any Sexual Abuse (n=30) M (SD) or n(%)</i>	<i>No Sexual Abuse (n=66) M (SD) or n(%)</i>	<i>X² or t (df)</i>	<i>p</i>
Female Gender	28 (93.3%)	35 (66.0%)	6.38 (1)	.012*
Race/Ethnicity				
Caucasian	26 (32.1%)	46 (56.8%)	0.68 (1)	.409
African American, Latino, Asian, Pacific Islander, Native American, Other	2 (2.5%)	7 (8.6%)		
Current Age	22.34 (1.39)	22.68 (1.22)	1.08 (81)	.282
Years of education completed	12.77 (2.06)	13.21 (1.84)	0.99 (79)	.324
Marital status				
Never married	23 (76.7%)	47 (88.7%)	0.67 (1)	.330
Cohabiting/Married	6 (20.0%)	6 (11.3%)		
Divorced (not included in analysis)	1 (3.3%)	0 (0.0%)		
Receiving public assistance	9 (30.0%)	4 (7.5%)	5.71 (1)	.017*
Receiving Medicaid	6 (20.0%)	9 (17.0%)	0.12 (1)	.731
Household Income at Baseline				
\$0-\$39,000	14 (32.6%)	10 (20.4%)	4.07 (3)	.254
\$40,000-79,000	15 (34.9%)	18 (36.7%)		
\$80,000 and higher	14 (32.6%)	18 (36.7%)		

* = p < .05; ** = p < .01; *** = p < .10 (two-sided)

Table 5.7 Comparison of Baseline Clinical Characteristics of Participants With and Without a History of Sexual Abuse

	<i>Sexual Abuse History (n=19) M (SD) or n(%)</i>	<i>No Sexual Abuse History (n=66) M (SD) or n(%)</i>	<i>X² or t (df)</i>	<i>p</i>
Depression	72.53 (2.34)	61.33 (13.86)	- 3.19 (86)	.001**
Hopelessness	11.32 (6.34)	9.66 (5.94)	- 1.06 (85)	.147
Suicidal ideation	55.95 (21.7)	48.49 (21.19)	- 1.35 (85)	.091***
History of suicide attempt at baseline	15 (78.9%)	49 (71.0%)	.473 (1)	.246
Functional impairment	126.32 (25.43)	102.03 (33.01)	- 2.97 (86)	.004**

* = p < .05; ** = p < .01; *** = p < .10 (one-sided)

Table 5.8 Comparison of Follow-Up Clinical Characteristics of Participants With and Without a History of Sexual Abuse

	<i>Any Sexual Abuse History (n=30)</i>	<i>No Sexual Abuse History (n=66)</i>	<i>X² or t (df)</i>	<i>p</i>
	<i>M (SD) or n (%)</i>	<i>M (SD) or n (%)</i>		
Depression	10.14 (5.50)	8.08 (4.29)	-1.84 (76)	.04*
Above clinical cut-off for depression	13 (50.0%)	13 (26.0%)	2.51 (1)	.06***
Suicidal ideation	4.54 (5.2)	3.08 (2.98)	-1.37 (36.8)	.179
Suicide attempt since baseline	13 (44.8%)	17 (32.7%)	1.18 (1)	.199
New first time attempt since baseline	9 (32.1%)	5 (10.2%)	4.39 (1)	.020*
Went from single attempter to multiple attempter since baseline	1 (2.1%)	5 (10.0%)	.290 (1)	.308
Two or more suicide attempts in lifetime	17 (65.4%)	29 (55.8%)	.325 (1)	.569
Drug Abuse	5 (17.2%)	13 (26.0%)	.380 (1)	.538
Alcohol Abuse	9 (31.0%)	21 (40.4%)	.355 (1)	.552
Quality of life	1.33 (1.65)	1.73 (1.47)	.203 (78)	.280
Social adjustment	2.19 (0.81)	2.12 (0.67)	-.442 (80)	.659

* = p < .05; ** = p < .01; *** = p < .10 (one-sided)

Table 5.9 Comparison of Service Utilization Since Baseline Among Follow-Up Group With and Without a History of Sexual Abuse

	<i>Any Sexual Abuse History (n=30) M (SD) or n (%)</i>	<i>No Sexual Abuse History (n=66) M (SD) or n (%)</i>	<i>X² or t (df)</i>	<i>P</i>
Received any mental health services	27 (93.1%)	46 (88.5%)	.08 (1)	.777
Received psychotherapy	21 (77.8%)	36 (89.0%)	.00 (1)	1.00
Taken psychiatric medication	21 (77.8%)	34 (75.6%)	.00 (1)	1.00
Psychiatric hospitalization	10 (37%)	19 (42.2%)	.04 (1)	.852
Outpatient drug or alcohol treatment	5 (18.5%)	6 (13.0%)	.09 (1)	.770
Residential drug or alcohol treatment center	5 (18.5%)	6 (13.0%)	.09 (1)	.770
8 Probation or juvenile corrections officer	10 (40.0%)	9 (20.0%)	2.32 (1)	.128
Detention center/training school/jail	9 (34.6%)	9 (20.0%)	1.17 (1)	.280

* = p < .05; ** = p < .01 (two-sided)

Table 5.10 Bivariate Correlations Between Baseline Variables

	Sexual Abuse	Hopelessness	Depression	Suicidal Ideation	Suicide Attempt in Past Year	Lifetime Suicide Attempt	Functional Impairment
Sexual Abuse	---						
Hopelessness	.08	---					
Depression	.26**	.38**	---				
Suicidal ideation	.14	.53**	.42**	---			
Suicide Attempt in Past Year	.05	.03	.04	.07	---		
Lifetime Suicide Attempt	.06	.06	.02	.08	.90**	---	
Functional Impairment	.14	-.14	.03	-.85	.25	.05	---

* Correlation is significant at the .05 level; ** Correlation is significant at the .01 level

Table 5.11 Bivariate Correlations Between Follow-up Variables

	Any Sexual Abuse	Depression	Alcohol Use	Drug Use	Suicidal Ideation	Suicide Attempt Since Baseline	Quality of Life	Social Adjustment
Any Sexual Abuse	---							
Depression	.21	---						
Alcohol Use	-.10	-.13	---					
Drug Use	-.09	.22	.44**	---				
Suicidal Ideation	.17	.49**	.03	.20	---			
Suicide Attempt Since Baseline	.12	.19	-.00	-.00	.48**	---		
Quality of Life	-.12	-.64**	.11	-.07	-.29*	-.17	---	
Social Adjustment	-.05	-.58**	.17	-.05	-.32*	-.20	.55**	---

* Correlation is significant at the .05 level; ** Correlation is significant at the .01 level

Table 5.12 Bivariate Correlations Between Baseline Variables and Follow-up Variables

	Sexual Abuse During Follow-up	Current Depression	Current Alcohol Use	Current Drug Use	Current Suicidal Ideation	Suicide Attempt Since Baseline	Quality of Life	Social Adjustment
Sexual Abuse at Baseline	.76**	.14	-.22	-.16	-.05	-.03	-.08	.05
Baseline Hopelessness	-.06	.11	-.10	.15	-.09	-.04	-.01	.13
Baseline Depression	.27	.14	-.22	-.09	.15	.16	-.21	.15
Baseline Suicidal Ideation	.13	.17	-.24*	-.08	.16	.11	-.01	.09
Suicide Attempt at Baseline	-.08	-.13	.13	.06	-.14	-.04	.21	-.14
Baseline Functional Impairment	.22	-.04	.05	-.07	-.21	.02	-.12	.04

* Correlation is significant at the 0.05 level; ** Correlation is significant at the 0.01 level

Table 5.13 Hierarchical Regression Analysis Predicting Current Depression

	Step 1	Step 2	Step 3	Step 4
R²	.02	.02	.52	.55
Variables (β)				
Baseline Depression	.134	.135	.004	-.036
Gender		.004	.067	.127
Baseline hopelessness			-.010	-.002
Current drug abuse			.221*	.229*
Current alcohol abuse			-.109	-.108
Baseline functional impairment			-.054	-.107
Current social functioning			.310**	.304**
Current quality of life			-.448***	-.443***
Any Sexual Abuse				.219*

* = $p < .05$; ** = $p < .01$, ***= $p < .001$

Table 5.14 Hierarchical Regression Analysis Predicting Current Suicidal Ideation

	Step 1	Step 2	Step 3
R²	.116	.368	.381
Variables (β)			
Gender	-.091	-.111	-.063
Baseline hopelessness	-.256	-.301	-.295*
Baseline suicidal ideation	.305*	.265	.247
Baseline functioning	-.158	-.153	-.187
Current quality of life		.101	.092
Current drug use		.035	.049
Current alcohol use		.146	.140
Current depression		.458**	.417**
Current quality of life		.138	.149
Any sexual abuse			.135

* = $p < .05$; ** = $p < .01$, ***= $p < .001$

Table 5.15 Hierarchical Regression Analysis Predicting Current Quality of Life

	Step 1	Step 2	Step 3
R²	.398	.468	.468
Variables (β)			
Current depression	-.631***	-.535***	-.536***
Gender		.114	.116
Current drug use		.059	.060
Current alcohol use		-.076	-.076
Current suicidal ideation		.099	.098
Current Social Adjustment		-.273	-.272*
Any sexual abuse			.007

* = p < .05; ** = p < .01, ***=p<.001

Table 5.16 Hierarchical Regression Analysis Predicting Current Social Adjustment

	Step 1	Step 2	Step 3
R²	.335	.405	.403
Variables (β)			
Current depression	.579***	.334*	.353*
Gender		-.010	-.041
Current drug use		-.305*	-.300*
Current alcohol use		-.017	-.029
Current suicidal ideation		-.091	-.084
Current Social Adjustment		.091	.100
Any sexual abuse			-.099

* = $p < .05$; ** = $p < .01$, ***= $p < .001$

Table 5.17 Comparison of Depressed vs. Non-Depressed Sexually Abused Participants

	<i>Meets Criteria for Depression (n=13) M (SD) or n(%)</i>	<i>Does Not Meet Criteria for Depression (n=15) M (SD) or %</i>	<i>t (df)</i>	<i>p</i>
Current suicidal ideation	7.83 (6.49)	2.20 (1.52)	-2.94 (11.96)	.006**
Quality of life	6.5 (19.39)	32.93 (26.99)	2.85 (25)	.005**
Social adjustment	2.81 (0.73)	1.75 (0.52)	-4.39 (25)	.000**

* p < .05; ** p < .01; * ** p < .10 (one sided)

Table 18: Comparison of Resilient vs. Non-Resilient Sexually Abused Participants^a

	<i>Non-resilient (n=13) M (SD) or n (%)</i>	<i>Resilient (n=15) M (SD) or %</i>	<i>t (df)</i>	<i>p</i>
Age	22.39 (1.36)	22.42 (1.49)	.046 (26)	.964
Baseline Household Income				
\$0-\$39,000	3 (25.0%)	3 (25.0%)		
\$40,000-\$79,000	5 (41.7%)	3 (25.0%)		
\$80,000 and higher	3 (33.3%)	6 (50%)	.90 (2)	.638
Baseline Perceived Social Support from Family	7.92 (3.25)	7.31 (1.89)	-.590 (19.3)	.281
Years of education	12.77 (2.17)	12.80 (2.18)	.037 (26)	.970
Received mental health services since baseline	12 (92.3%)	14 (93.3%)	.000 (1)	.722

* p < .05; ** p < .01; * ** p < .10 (one sided)

^a Resilient defined as not meeting clinical criteria for depression which is associated with high quality of life and better social adjustment

Appendices

Appendix A: Consent Form

IRBMED 2002-0033

Consent Approved On: 12/17/2005

Project Approval Expires On: 11/18/2010

UNIVERSITY OF MICHIGAN CONSENT TO BE PART OF A RESEARCH STUDY

NAME OF STUDY AND RESEARCHERS

Title of Project: Youth Nominated Support Team: Phase II Follow-Up
Principal Investigator: Melissa C. Webster, LMSW
Co-Investigators: Cheryl A. King, Ph.D., Mark Ilgen, Ph.D., Daniel Eisenberg, Ph.D

GENERAL INFORMATION

Project Description

We are conducting follow-up research with about 170 adults who previously participated in our research study several years ago, *Youth-Nominated Support Team for Adolescents (YST)*. The goals of this 4 to 5-year follow-up are 1) to learn about the use of healthcare services for young adults who were previously psychiatrically hospitalized and 2) to learn about how services and how they were doing before relate to how they are doing now. We will look at how these young adults are doing and their use of mental health and other health services during the change from adolescence to adulthood.

Participants

We invite you to participate in this study because you took part in our earlier study. If you want to do it, we will ask you to do an interview and complete surveys (either in person, over the phone, or by mail). We will ask about your current moods, thoughts and behaviors. We will also ask about your education, employment and the healthcare and mental health services you have used since you took part in our earlier study.

Your participation in this study is completely voluntary. You do not have to be in this study. You can choose whether or not to be in it. The follow-up study will involve interviews and questionnaires. These will take about 45 minutes of your time. You will get a \$40 payment to thank you for your time and participation.

Information for Research Participants

You do not have to pay for being in this study. Your health plan is not charged for this study either. Your research file will remain confidential like your medical record. It will not be shared except as noted below.

There is no direct benefit to you for being in this study. But, some people find that interviews may help them to clarify their difficulties. This study will improve our understanding of mental health and other healthcare services for youth and young adults. This will guide the work of mental health professionals, teachers, and researchers.

AUTHORIZATION TO RELEASE PROTECTED HEALTH INFORMATION AND CONFIDENTIALITY OF SUBJECT RECORDS

Signing this form gives the researchers your permission to obtain, use, and share information about you for this study, and is required in order for you to take part in the study. Information about you may be obtained from any hospital, doctor, and other health care provider involved in your care, including:

- Hospital/doctor's office records, including test results (X-rays, blood tests, urine tests, etc.)
- Mental health care records (except psychotherapy notes not kept with your medical records)
- Alcohol/substance abuse treatment records
- Your AIDS/HIV status
- All records relating to your condition, the treatment you have received, and your response to the treatment

There are many reasons why information about you may be used or seen by the researchers or others during or after this study. Examples include:

- The researchers may need the information to make sure you can take part in the study.
- The researchers may need the information to check your test results or look for side effects.
- University, and/or government officials may need the information to make sure that the study is done in a safe and proper manner.
- Study sponsors or funders, or safety monitors or committees, may need the information to, make sure the study is done safely and properly, learn more about side effects, or analyze the results of the study
- The researchers may need to use the information to create a databank of information about your condition or its treatment.
- Information about your study participation may be included in your regular UMHS medical record.
- If you receive any payments for taking part in this study, the University of Michigan accounting department may need your name, address, social security number, payment amount, and related information for tax reporting purposes.

We will do everything we can to protect your privacy. The results of this study could be published in an article, but would not include any information that would let others know who you are. However, if we have any concerns about your safety, or the safety of others, we will need to notify the appropriate people and authorities to obtain help.

As a rule, the researchers will not continue to use or disclose information about you, but will keep it secure until it is destroyed. Sometimes, it may be necessary for information about you to continue to be used or disclosed. Examples of reasons for this include:

- To avoid losing study results that have already included your information.
- To provide limited information for research, education, or other activities (This information would not include your name or anything else that could let others know who you are.)
- To help University and government officials make sure that the study was conducted properly

As long as your information is kept within the University of Michigan Health System, it is protected by the Health System's privacy policies. For more information see <http://www.med.umich.edu/hipaa/npp.htm>. Note that once your information has been shared with others

as described under Question 9.2, it may no longer be protected by the privacy regulations of the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Your permission expires at the end of the study, unless you cancel it sooner. You may cancel your permission at any time by contacting the researchers listed below.

Your signature in the next section means that you have received copies of all of the following documents:

- This "Consent to be Part of a Research Study" document. *(Note: In addition to the copy you receive, copies of this document will be stored in a separate confidential research.)*
- Other (specify): _____

CONTACT INFORMATION

To find out more about the study, ask a question or express a concern about the study contact one of the following:

Principal Investigator: Melissa Webster, LMSW 4250 Plymouth Rd, Ann Arbor, MI 48109 Telephone: (734)936-6328 Email: misi@umich.edu	Study Coordinator: Anne Kramer, LMSW 4250 Plymouth Rd, Ann Arbor, MI 48109 Telephone: (734) 764-7179 Email: ack@umich.edu
University of Michigan Compliance Help Line at 1-888-296-2481 or if you are concerned about a possible violation of your privacy, contact the University of Michigan Health System Privacy Officer at 1-888-296-2481	University of Michigan Medical School Institutional Review Board (IRBMED) 517 W. William, Argus 1 Ann Arbor, MI 48103-4943 734-763-4768 E-mail: irbmed@umich.edu

SIGNATURES

Research Subject:

I understand the information printed on this form. My questions so far have been answered.

Signature of Subject: _____ Date: _____

Name (Print legal name): _____

Patient ID: _____ Date of Birth: _____

Appendix B: Demographic and Current Living Situation Screen

1. What best describes your current residence? (check one)

- | | |
|--|---|
| <input type="checkbox"/> House | <input type="checkbox"/> Apartment or condominium |
| <input type="checkbox"/> Mobile home | <input type="checkbox"/> College Housing |
| <input type="checkbox"/> Hotel/Motel | <input type="checkbox"/> Homeless |
| <input type="checkbox"/> Healthcare facility | |

2. How long have you lived at your current residence?

YEARS ___ + MONTHS ___
(Specify only if fewer than 2 years at current residence)

3. Who do you live with? (check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Alone | <input type="checkbox"/> Live w/ other family |
| <input type="checkbox"/> Live w/ parents | <input type="checkbox"/> Live w/ peers (friends, students) |
| <input type="checkbox"/> Live w/ spouse or partner | <input type="checkbox"/> Live w/ children |

4. What is your current marital status? (check one)

- | | |
|--|--|
| <input type="checkbox"/> Never married | <input type="checkbox"/> Cohabiting with partner |
| <input type="checkbox"/> Married | <input type="checkbox"/> Separated |
| <input type="checkbox"/> Divorced | <input type="checkbox"/> Widowed |

5. Do you have any children?

- No
 Yes How many: _____

6. How many years of schooling have you completed?

(e.g. Graduated High School = 12) _____ Years of Schooling

7. What is the highest degree you have received? (check one)

- None
 High School Diploma
 GED
 Associate Degree/Technical Degree
 College Diploma
 Masters Degree
 Doctorate or Professional Degree (e.g., MD, PhD, Law Degree, JD)

8. Are you currently a student (attending school or in summer recess)?

- No Full-time Part-time

9. What best describes your current employment status? (check one)

- Unemployed, not looking for employment
 Unemployed, looking for employment
 Full-time employed for pay
 Part-time employed for pay
 Self-employed for pay

10. Have you been hospitalized for medical or psychiatric problems since your last interview with us on _____ / _____ / _____

If yes...

- i. Medical _____ times
- ii. Psychiatric _____ times
- iii. Other _____ times

11. Are you on medical or psychiatric leave?

Yes No

12. Do you have:

- i. Medicare?
 Yes No Refused to answer Don't know
- ii. Medicaid, a state supported assistance program that pays for health care?
 Yes No Refused to answer Don't know
- iii. MICHild, a state supported assistance program that pays for health care?
 Yes No Refused to answer Don't know
- iv. Private insurance that helps pay for health care?
 Yes No Refused to answer Don't know

13. Are you receiving public assistance (Includes temporary assistance and SSI)

Yes No Refused to answer Don't know

14. Have you served in the military?

No Yes

If yes, what service: _____

Appendix C: Trauma History Questionnaire

TRAUMA HISTORY QUESTIONNAIRE

Please answer these questions since your last interview on _____

1. Has anyone ever made you have intercourse, oral or anal sex against your will?	Yes	No	If yes... Was it repeated? _____ Approx. how often and at what age(s)? _____ Please indicate the nature of the relationship with the person (e.g. stranger, friend, relative, parent, sibling) _____
2. Has anyone ever touched private parts of your body, or made you touch theirs, under force or threat?	Yes	No	If yes... Was it repeated? _____ Approx. how often and at what age(s)? _____ Please indicate the nature of the relationship with the person (e.g. stranger, friend, relative, parent, sibling) _____
3. Other than incidents mentioned in Questions 1 and 2, have there been any other situations in which another person tried to force you to have unwanted sexual contact?	Yes	No	If yes... Was it repeated? _____ Approx. how often and at what age(s)? _____ Please indicate the nature of the relationship with the person (e.g. stranger, friend, relative, parent, sibling) _____
4. Has anyone, including family members or friends, ever attacked you with a gun, knife or some other weapon?	Yes	No	If yes... Was it repeated? _____ Approx. how often and at what age(s)? _____ Please indicate the nature of the relationship with the person (e.g. stranger, friend, relative, parent, sibling) _____
5. Has anyone, including family members or friends, ever attacked you <u>without</u> a weapon and seriously injured you?	Yes	No	If yes... Was it repeated? _____ Approx. how often and at what age(s)? _____ Please indicate the nature of the relationship with the person (e.g. stranger, friend, relative, parent, sibling) _____
6. Has anyone in your family ever beaten, "spanked" or pushed you hard enough to cause injury?	Yes	No	If yes... Was it repeated? _____ Approx. how often and at what age(s)? _____ Please indicate the nature of the relationship with the person (e.g. stranger, friend, relative, parent, sibling) _____

Appendix D: Quality of Life Inventory

Quality of Life Inventory

HEALTH is being physically fit, not sick, and without pain or disability.

1. How **important** is HEALTH to your happiness?

Not important

Important

Extremely Important

2. How **satisfied** are you with your HEALTH?

Very
Dissatisfied

Somewhat
Dissatisfied

A Little
Dissatisfied

A Little
Satisfied

Somewhat
Satisfied

Very
Satisfied

SELF-ESTEEM means liking and respecting yourself in light of your strengths and weaknesses, successes and failures, and ability to handle problems.

3. How **important** is SELF-ESTEEM to your happiness?

Not important

Important

Extremely Important

4. How **satisfied** are you with your SELF-ESTEEM?

Very
Dissatisfied

Somewhat
Dissatisfied

A Little
Dissatisfied

A Little
Satisfied

Somewhat
Satisfied

Very
Satisfied

GOALS-AND-VALUES are your beliefs about what matters most in life and how you should live, both now and in the future. This includes your goals in life, what you think is right or wrong, and the purpose or meaning of life as you see it.

5. How **important** are GOALS-AND-VALUES to your happiness?

Not important

Important

Extremely Important

6. How **satisfied** are you with your GOALS-AND-VALUES?

Very
Dissatisfied

Somewhat
Dissatisfied

A Little
Dissatisfied

A Little
Satisfied

Somewhat
Satisfied

Very
Satisfied

MONEY is made up of three things. It is the money you earn, the things you own (like a car or furniture), and believing that you will have the money and things that you need in the future.

7. How **important** is MONEY to your happiness?

Not important

Important

Extremely Important

8. How **satisfied** are you with the MONEY you have?

Very
Dissatisfied

Somewhat
Dissatisfied

A Little
Dissatisfied

A Little
Satisfied

Somewhat
Satisfied

Very
Satisfied

WORK means your career or how you spend most of your time. You may work at a job, at home taking care of your family, or at school as a student. **WORK** includes your duties on the job, the money you earn (if any), and the people you work with. (If you are unemployed, retired, or can't work, you can still answer these questions.)

9. How **important** is **WORK** to your happiness?

Not important Important Extremely Important

10. How **satisfied** are you with your **WORK**? (If you are not working, say how satisfied you are about not working.)

Very Dissatisfied Somewhat Dissatisfied A Little Dissatisfied A Little Satisfied Somewhat Satisfied Very Satisfied

PLAY is what you do in your free time to relax, have fun, or improve yourself. This could include watching movies, visiting friends, or pursuing a hobby like sports or gardening.

11. How **important** is **PLAY** to your happiness?

Not important Important Extremely Important

12. How **satisfied** are you with the **PLAY** in your life?

Very Dissatisfied Somewhat Dissatisfied A Little Dissatisfied A Little Satisfied Somewhat Satisfied Very Satisfied

LEARNING means gaining new skills or information about things that interest you. **LEARNING** can come from reading books or taking classes on subjects like history, car repair, or using a computer.

13. How **important** is **LEARNING** to your happiness?

Not important Important Extremely Important

14. How **satisfied** are you with your **LEARNING**?

Very Dissatisfied Somewhat Dissatisfied A Little Dissatisfied A Little Satisfied Somewhat Satisfied Very Satisfied

CREATIVITY is using your imagination to come up with new and clever ways to solve everyday problems or to pursue a hobby like painting, photography, or needlework. This can include decorating your home, playing the guitar, or finding a new way to solve a problem at work.

15. How **important** is **CREATIVITY** to your happiness?

Not important Important Extremely Important

16. How **satisfied** are you with your **CREATIVITY**?

Very Dissatisfied	Somewhat Dissatisfied	A Little Dissatisfied	A Little Satisfied	Somewhat Satisfied	Very Satisfied
<input type="checkbox"/>					

HELPING means helping others in need or helping to make your community a better place to live. **HELPING** can be done on your own or in a group like a church, a neighborhood association, or a political party. **HELPING** can include doing volunteer work at a school or giving money to a good cause. **HELPING** means helping people who are not your friends or relatives.

17. How **important** is **HELPING** to your happiness?

Not important	Important	Extremely Important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. How **satisfied** are you with the **HELPING** you do?

Very Dissatisfied	Somewhat Dissatisfied	A Little Dissatisfied	A Little Satisfied	Somewhat Satisfied	Very Satisfied
<input type="checkbox"/>					

LOVE is a very close romantic relationship with another person. **LOVE** usually includes sexual feelings and feeling loved, cared for, and understood. (If you do not have a **LOVE** relationship, you can still answer these questions.)

19. How **important** is **LOVE** to your happiness?

Not important	Important	Extremely Important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. How **satisfied** are you with the **LOVE** in your life? (If you are not in a **LOVE** relationship, say how satisfied you feel about not having a **LOVE** relationship.)

Very Dissatisfied	Somewhat Dissatisfied	A Little Dissatisfied	A Little Satisfied	Somewhat Satisfied	Very Satisfied
<input type="checkbox"/>					

FRIENDS are people (not relatives) you know well and care about who have interests and opinions like yours. **FRIENDS** have fun together, talk about personal problems, and help each other out. (If you have no **FRIENDS**, you can still answer these questions.)

21. How **important** is **FRIENDS** to your happiness?

Not important	Important	Extremely Important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. How **satisfied** are you with your **FRIENDS**? (If you have no **FRIENDS**, say how satisfied you are about having no **FRIENDS**.)

Very Dissatisfied	Somewhat Dissatisfied	A Little Dissatisfied	A Little Satisfied	Somewhat Satisfied	Very Satisfied
<input type="checkbox"/>					

CHILDREN means how you get along with your child (or children). Think of how you get along as you care for, visit or play with your child. (If you do not have CHILDREN, you can still answer these questions.)

23. How **important** are CHILDREN to your happiness? (If you have no CHILDREN, say how important having a child is to your happiness.)

Not important Important Extremely Important

24. How **satisfied** are you with your relationships with your CHILDREN? (If you have no CHILDREN, say how satisfied you feel about not having children.)

Very Dissatisfied Somewhat Dissatisfied A Little Dissatisfied A Little Satisfied Somewhat Satisfied Very Satisfied

RELATIVES means how you get along with your parents, grandparents, brothers, sisters, aunts, uncles, and in laws. Think about how you get along when you are doing things together like visiting, talking on the telephone, or helping each other out. (If you have no living RELATIVES, check the checkbox "Not Important" for question 25 and DO NOT ANSWER question 26.)

25. How **important** are RELATIVES to your happiness?

Not important Important Extremely Important

26. How **satisfied** are you with your relationship with RELATIVES?

Very Dissatisfied Somewhat Dissatisfied A Little Dissatisfied A Little Satisfied Somewhat Satisfied Very Satisfied

HOME is where you live. It is your house or apartment and the yard around it. Think about how nice it looks, how big it is, and your rent or house payment.

27. How **important** is your HOME to your happiness?

Not important Important Extremely Important

28. How **satisfied** are you with your HOME?

Very Dissatisfied Somewhat Dissatisfied A Little Dissatisfied A Little Satisfied Somewhat Satisfied Very Satisfied

NEIGHBORHOOD is the area around your home. Think about how nice it looks, the amount of crime in the area, and how well you like the people.

29. How **important** is your NEIGHBORHOOD to your happiness?

Not important Important Extremely Important

30. How satisfied are you with your NEIGHBORHOOD?

Very Dissatisfied	Somewhat Dissatisfied	A Little Dissatisfied	A Little Satisfied	Somewhat Satisfied	Very Satisfied
<input type="checkbox"/>					

COMMUNITY is the whole city, town, or rural area where you live (it is not just your neighborhood). **COMMUNITY** includes how nice the area looks, the amount of crime, and how well you like the people. It also includes places to go for fun like parks, concerts, sporting events, and restaurants. You may also consider the cost of things you need to buy, the availability of jobs, the government, schools, taxes, and pollution.

31. How important is your COMMUNITY to your happiness?

Not important	Important	Extremely Important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

32. How satisfied are you with your COMMUNITY?

Very Dissatisfied	Somewhat Dissatisfied	A Little Dissatisfied	A Little Satisfied	Somewhat Satisfied	Very Satisfied
<input type="checkbox"/>					

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