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http://epublications.marquette.edu/theses_open/390

SUICIDAL RISK AT A COLLEGE COUNSELING CENTER:
CORRELATES AT INTAKE AND
THERAPEUTIC OUTCOMES

by

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A Thesis submitted to the Faculty of the Graduate School,
Marquette University,
in Partial Fulfillment of the Requirements for
the Degree of Master of Science

Milwaukee, Wisconsin

December 2016

ABSTRACT
SUICIDAL RISK AT A COLLEGE COUNSELING CENTER:
CORRELATES AT INTAKE AND
THERAPEUTIC OUTCOMES

Maha Baalbaki, B.A.

Marquette University, 2016

Suicidal risk is examined within the population of college students entering therapy. College student suicidal risk factors are examined among those entering therapy. Based on suicidal risk presented at intake, subsequent outcomes, with respect to treatment duration and mental health functioning, are evaluated. Participants include 1717 students aged 18-22 receiving therapy services at the Johns Hopkins University Counseling Center. Measures included the Personal Identification Form, Problem Checklist, and Behavioral Health Questionnaire-20. Various demographic (race/ethnicity), clinical (previous treatment and referral source), emotional (depression, anxiety, and substance abuse), and collegiate (thwarted belongingness, academic stress, and identity confusion) factors were associated with increased suicidal risk presented at intake. Initial suicidal risk was also associated with treatment duration and changes in self-reported levels of distress, symptoms, impairment, and global mental health. Implications and future directions are discussed.

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Suicide Risk at a College Counseling Center: Correlates at Intake and Therapeutic Outcomes

Suicide is the tenth leading cause of death in the United States for all ages, taking the lives of over 40,000 Americans each year [Centers for Disease Control (CDC), 2015]. From 1990-2000, the suicide rate decreased from 12.5 to 10.4 per 100,000 persons. However, over the past decade, the rate of deaths by suicide increased to 12.9 per 100,000 persons (American Association of Suicidology, 2014).

Research suggests that certain characteristics are associated with increased risk for suicide. For example, women are more likely to report suicidal ideation than men (Evans, Hawton, Rodham, Psychol, & Deeks, 2005), European-Americans are more likely to attempt suicide than African-Americans (American Association of Suicidology, 2014), and those who have poor relationships with family members are more likely to complete suicide than those with strong relationships (Engin, Gurkan, Dulgerler, & Arabaci, 2009). Other correlates of increased suicidal risk include age (American Association of Suicidology, 2014; CDC, 2015), dysregulation of the serotonergic system (Caspi et al., 2003), problematic functioning in the ventromedial prefrontal cortex (Oquendo & Mann, 2000), family history of suicide (Farabaugh et al., 2011), depression (Arria et al., 2009; Farabaugh et al., 2011; Garlow et al., 2008), hopelessness (Beck, Steer, Beck, & Newman, 1993; Kovacs & Garrison, 1992), perceived burdensomeness (Hill & Pettit, 2012; Joiner, 2009), poor adjustment (Gould et al., 1998), low socioeconomic status (Dubow, Kausch, Blum, Reed, & Bush., 1989), low social support (Arria et al., 2009; Farabaugh et al., 2011), impulsive and aggressive behavior (Farabaugh et al., 2011), and personality factors (Brezo et al., 2006).

The following reviews research regarding suicide with a particular focus on factors relevant to college students. A review of statistics related to attempts and ideation among the college population is followed by a review of the literature identifying factors that increase risk for suicide among college students. The next section discusses suicide risk among college students seeking counseling. Finally, a study identifying correlates of increased risk and therapeutic outcomes is described.

Risk of Suicide among College Students

Suicide is the second most common cause of death among 15 to 24 year-olds (CDC, 2015) and the second leading cause of death among college students (Wilcox et al., 2010). Approximately 1,100 US college students die by suicide each year (Wilcox et al., 2010).

Attempted suicide is more prevalent with approximately 24,000 suicide attempts occurring annually among US college students (American Association of Suicidology, 2014). Even more common is suicidal ideation, considered to be an important precursor to later attempted and completed suicide (see below; Brent, Baugher, Bridge, Chen, & chiappetta, 1999; Gili-Planas, Roca-Bennasar, Ferrer-Perez, & Bernardo-Arroyo, 2001; Lewinsohn, Rohde, & Seeley, 1996; Reinherz et al., 1995). Nearly 25 percent of college students have thought about attempting suicide (Westefeld et al., 2005) and an estimated 1 in 12 college students has composed a plan to commit suicide (Haas, Hendin, & Mann, 2003). With the most extensive epidemiological studies indicating that for each completed suicide worldwide there are an estimated 25 suicide attempts (American Foundation for Suicide Prevention, 2016), there is no question that treatment for suicidal ideation is a significant target for improvement.

Research has identified numerous demographic factors (e.g., gender), clinical factors (e.g., depression), and social factors (e.g., thwarted belongingness) that put college students at risk for suicidal ideation, attempts, and completions.

Demographic factors.

Age. Silverman, Meyer, Sloane, Raffel, and Pratt (1997) found that the suicide base rate was higher for students over the age of 24 years. Likewise, graduate students had a higher risk of suicide than any undergraduate class (Silverman et al., 1997). Within the undergraduate classes, freshman had the highest risk of suicide and seniors had the lowest (Silverman et al., 1997).

Gender. While men are more likely to complete suicide (American Foundation for Suicide Prevention, 2016; CDC, 2015), there is evidence suggesting that women report more suicidal thoughts and tendencies than men (CDC, 2015; Evans et al., 2005; Kessler, Borges, & Walters, 1999) and that gender differences in suicidal ideation persist through college (Engin et al., 2009). Gender differences in prevalence of completed suicide, attempted suicide, and suicidal ideation are likely due to females experiencing higher vulnerability to mood disorders, which are strongly linked to suicidal ideation (Arria et al., 2009; Farabaugh et al., 2011; Garlow et al., 2008). Moreover, males are likely to experience higher levels of aggression leading to violent means of (completed) suicide (Garrison, 1992).

Race/ethnicity. Within the larger population as well as within college, European-Americans display the highest suicide rates (American Association of Suicidology, 2014; CDC, 2015). Studies with African-Americans and Latinos demonstrate the protective factors of family and religiosity against suicide (Stephenson et al., 2005). For both Asian-

American and Latino students, acculturation can be linked to increased risk of suicide, such that those who are first generation citizens are at higher risk for suicide (Perez-Rodriguez et al., 2014; Wong, Vaughan, & Chang, 2014).

Help-seeking is uncommon among racial/ethnic minorities as compared to European-American students (Clement et al., 2015). Students from racial/ethnic minority backgrounds are unlikely to find value in professional mental health services (Thompson, Akbar, & Bazile, 2004) and are often encouraged to “tough it out” during difficult situations (Broman, 1996). Reluctance towards seeking professional help can come from negative perceptions of mental health care providers held by racial/ethnic minorities. For example, African-Americans may not believe that a European-American therapist will understand or be sensitive to their issues (Thompson, Akbar, & Bazile, 2004). Thus, racial/ethnic minority students may prefer to seek help from other avenues, such as family, friends, or religious figures (Cauce et al., 2002) for more serious issues that may be rooted within their core self-beliefs.

Emotional disturbances.

Depression. Depressive disorders, which can include suicidal thoughts as a symptom, are generally viewed as one of the greatest risk factors for suicide and are a logical starting point with respect to identification of at risk individuals (Konick & Gutierrez, 2005). Research suggests a strong relationship between depression and suicidal risk (Arria et al., 2009; Farabaugh et al., 2011; Garlow et al., 2008). Cukrowicz and colleagues (2011) found a positive association between depressive symptoms and suicidal ideation to persist among college students. The American College Health Association (ACHA, 2006) reported that approximately 95 percent of students who commit suicide

are clinically depressed. Moreover, nearly half of college students who seriously consider suicide experience significant depression (ACHA, 2006).

Anxiety. College students with suicidal ideation experienced higher levels of anxiety than those without suicidal ideation (Nyer et al., 2013). Eisenberg, Hunt, and Speer (2013) found that 26 percent of college students with suicidal ideation experienced comorbid generalized anxiety disorder (GAD). Furthermore, more severe suicidal ideation is associated with more frequent and more intense anxiety (Nyer et al., 2013)

Substance Abuse. Substance abuse is often comorbid with depressive disorders (Kandel, Raveis, & Davies, 1991) making it another predictor of suicide risk. Research provides evidence for an association between substance abuse and suicidal ideation (Arria et al., 2009; Westefeld et al., 2005). Gould and colleagues (1998) found results suggesting that substance abuse contributes to the escalation of suicidal thoughts to suicide attempts. Moreover, research suggests that substance abuse is more predictive of suicide risk for females than males (Kandel, Raveis, & Davies, 1991).

Collegiate difficulty.

Thwarted belongingness. Thwarted belongingness is the experience that one is alienated from others, not an integral part of the family, circle of friends, or other valued groups. Related concepts include social isolation, alienation, and loneliness. Such concepts date as far back as Durkheim's (1897) sociological theory of suicide. Since early theoretical models explaining suicide, isolation and alienation have remained core factors contributing to suicidal ideation and the desire for death. Baumeister and Leary (1995) elaborate that the need to belong is a powerful, fundamental, and extremely

pervasive motivation that if thwarted can lead to numerous negative effects on health, adjustment, and well-being.

Through research, thwarted belongingness has received some of the strongest and most uniform evidence supporting its role as a risk factor for suicidal behavior (Boardman, Grimbaldston, Handley, Jones, & Willmott, 1999; Joiner et al., 2002; Van Orden, Witte, Gordon, Bender, & Joiner, 2008). The connection between belonging (or its absence) and suicidality has been established for a number of diverse populations, including young adolescents, college students, elderly individuals, and psychiatric inpatients (Bonner & Rich, 1987; Osgood & Brant, 1990; Prinstein, Boergers, Spirito, Little, & Grapentine, 2000; Roberts, Roberts, & Chen, 1998). For example, Conner, Britton, Sworts, & Joiner (2007) examined the relationship between prior suicide attempt and levels of belonging and found that individuals who reported greater belonging decreased their odds of having a past suicide attempt by approximately 6 percent.

Furthermore, studies have found evidence for the critical “buffering” role of events that foster feelings of belongingness, which are associated with lower suicide rates. Specifically, suicide rates go down during times of celebration such as sporting events (Joiner, Hollar, & Van Orden, 2006) and during times of hardship or tragedy such as the death of an icon (Biller, 1977). Studies have repeatedly found evidence suggesting that positively valenced social interactions provide a protective factor against suicide (Baumeister & Leary, 1995).

Academic stress. College students have the added pressures of academics, including performance measures of homework, examinations, and writing prompts. The association between academic stressors and suicidal ideation among adolescents has been

well documented in several research studies (Ang & Huan, 2006; Toero, Nagy, Sawaguchi, Sawaguchi, & Sotonyi, 2001; Westefeld et al., 2005). In school, adolescents often see themselves as being evaluated in terms of their academic performance, which produces a constant pressure to excel. It is therefore not surprising that adolescents who attempted suicide often had problems in school. In a study conducted by Westefeld and colleagues (2005), the authors found that all students who attempted suicide cited stress related to school as a contributing factor to their attempt(s). Toero et al. (2001) argued that there is a strong link between the pressure to excel in school and suicidal behaviors among adolescents. In their study, Toero and colleagues showed that the number of suicide cases in a year usually peaked during examination periods where students experienced a high level of stress in school.

Identity confusion. The transition into college occurs during adolescence, which is marked by important identity development (Waterman, 1982). During adolescence, individuals explore personal identity through important aspect of the self. However, as identity formation flourishes, the development of identity does not always progress linearly or smoothly. Identity formation often includes progressive shifts, regressive changes, and reentry into identity crises (Waterman, 1982). This fluid movement through identity development can cause stress for many as it may lead to confusion regarding the self-concept.

Confusion occurs when conflict arises during exploration of personal identity. Research suggests that problems with identity contribute to suicidal ideation (Brezo et al., 2006). Specifically, conflict in understanding one's sexual identity (Blosnich & Bossarte, 2012; Hill & Pettit, 2012; Shatyermmman, Reilly, & Knight, 2012), ethnic identity (Hwang

& Goto, 2009; Walker, Wingate, Obasi, & Joiner, 2008), and other aspects of personal identity (Marcia, 1980; Nyer et al., 2013) have been correlated to increased risk of suicidal ideation.

Suicide Risk in College Students Seeking Counseling

Research conducted with a sample of nonclinical college students found that students with suicidal ideation were more willing to seek treatment than those experiencing personal problems without suicidal ideation (Deane & Todd, 1996). This implies that suicidal ideation increases distress enough to warrant professional help. Unfortunately, based on findings that suggest a lack of treatment adherence for those experiencing suicidal ideation, students experiencing ideation rarely receive the full benefits of psychotherapeutic intervention. Those with suicidal ideation are more likely to prematurely discontinue treatment (Trautman, Stewart, & Morishima, 1993) even after efforts to promote adherence, including psychoeducation (Zimmerman, Asnis, & Schwartz, 1995) and increased attentional care (Rotheram-Borus et al., 1996). Therefore, it is necessary to identify properly those at risk for suicide and understand common therapeutic outcomes in order to intervene effectively.

However, while students may indicate more willingness to seek treatment during times of suicidal ideation, their willingness is not reflected in their help-seeking behavior. Research indicates that only about 18 percent of college students with suicidal ideation actually seek treatment (Kisch, Leino, & Silverman, 2005). This suggests, in turn, that there are multiple barriers to treatment seeking. While not the focus of this study, it is imperative that college counseling centers work to reduce barriers to treatment. Students

who do not seek treatment during times of crisis are likely to experience higher levels of distress and reach crisis (Eisenberg, Hunt, Speer, & Zivin, 2011).

Summary and Implications of Research

The risk factors for suicide, such as thwarted belongingness, depression, and anxiety, can be treated effectively by mental health professionals, but only if suicide risk is properly identified and only if the person at risk of suicide stays in treatment long enough to benefit from it. For counselors of college students to effectively reduce suicide risk, however, they must be able to identify those at risk and they must understand how students at risk respond to treatment. These are the areas of focus of the present study.

Present Research

This research will focus on college students entering psychotherapy because the experience of individual psychotherapy provides an optimal opportunity to address suicide risk. The aims of the present study are twofold: to identify psychological and demographic predictors of suicidal risk for students entering therapy and to assess change in mental health during therapy of students presenting with various levels of suicide risk.

The first set of analyses in this study explore whether previously-identified risk factors for the college population (reviewed above) are likewise associated with the level of suicide risk of college students presenting for treatment at their college counseling center. Specifically, demographic variables and measures of depression, anxiety, substance abuse, thwarted belongingness, identity confusion, and academic stress are assessed for predictability of level of suicide risk. Since the present research is based on analyses of responses to existing measures used by numerous universities in the United States, the findings will be applicable to other counseling centers across the nation.

There are several predictions for the first aim of the study. First, due to low variability in age, as all participants were college students between the ages of 18 and 22, age is not expected to be predictive of suicidal risk in this study. Based on research findings suggesting that females experience higher levels of suicidal risk, it is also expected that females will be at higher risk for suicide than males. Moreover, it is expected that European-Americans will display the highest risk and African-Americans will show the lowest risk of suicide, which is congruent with earlier findings. With regard to clinical presentation, it is predicted that depression, anxiety, and substance abuse will all be positively associated with suicidal risk. Similarly, based on previous research indicating the harmful effects of thwarted belongingness, it is expected that thwarted belongingness will be positively associated with suicidal risk. It is also expected that academic stress will be positively associated with suicidal risk. Finally, it is expected that all critical items capturing identity confusion will be positively associated with suicidal risk.

The second set of analyses in this study will examine whether suicide risk factors are associated with various treatment outcomes. The association between suicide risk and total duration of treatment will be examined. In addition, the association of risk and measures of change in mental health, including distress, symptoms, impairment, and global mental health (GMH) over the course of treatment will be evaluated.

There is very limited previous literature on which to make predictions about these analyses. Based on research suggesting that treatment duration is positively associated with illness or symptom severity (Catty et al., 2010), it is predicted that those entering with higher levels of suicidal risk remain in therapy for a longer period of time. The last

two predictions are related. It is expected that final mental health scores, including levels of distress, symptoms, impairment, and GMH, will be comparable across groups with various levels of suicide risk at intake as termination of treatment is elicited by positive mental health indicated by low scores in each realm. Thus, positive mental health is unrelated to level of suicide risk at intake. Since final mental health scores are expected to be comparable near the end of treatment, change in mental health scores must be largest for the group that enters with higher levels of suicidal risk.

Method

Participants

Participants included 1,717 students attending Johns Hopkins University with ages ranging from 18 to 22 years ($M = 19.69$, $SD = 1.28$). The sample was majority female (61%). Of the students, 60% identified as European-American, 22% identified as Asian-American, 6% identified as Latino, 6% identified as African-American, and 7% either selected “other” or did not report their race/ethnicity. Previous treatment was reported by 37% of the current sample. Treatment lasted from 1 to 35 sessions ($M = 4.40$, $SD = 4.81$).

Materials

The present study utilized archival data retrieved from the Johns Hopkins University Counseling Clinic (JHUCC) including information on all college students seeking psychotherapy services from the clinic between the 2002-2003 and 2006-2007 academic years. Data included demographic information collected from the Personal Identification Form (PIF), presenting problems from the Problem Checklist (PCL), and

measures of mental health at each therapy session from the Behavioral Health Questionnaire-20 (BHQ-20).

Personal identification form (PIF). The PIF was created by the JHUCC committee as a standard form used to collect demographic information from students seeking psychotherapy services from the JHUCC. It requests demographic information including age, gender, ethnicity, parental marital status, class year, academic status, major, referral information, previous psychotherapeutic treatment, and family history of medical and emotional problems. (See Appendix A.) The PIF was completed before the first therapy session.

The present study used five variables derived from the PIF: age, gender, race/ethnicity, previous treatment, and referral source. Students entered their age and identified their gender as either male or female. They noted their race/ethnicity by selecting one of the following options: European-American, African-American, Latino, Asian-American, or other. Students also indicated whether they received prior counseling from JHUCC or elsewhere. Responses were combined to indicate whether students received previous treatment (yes or no). Students responded to the question “Who referred you to the Counseling Center?” Responses were collapsed into three groups: self (myself), friend/relative (friend and relative), and school personnel (Residential Life staff, faculty, staff, Student Health & Wellness, Career Center, Academic Advising, Dean of Students, and Security Office).

Problem checklist (PCL). The PCL was developed by the JHUCC committee who reviewed intake questionnaires from counseling centers across various campuses. They determined the prominent and relevant problem areas most commonly identified by

students in the open-ended responses on intake questionnaires. The members of the committee analyzed the most common responses and used this information, combined with their clinical judgment, to determine the statements on the PCL.

The PCL was completed by all students seeking services from the JHUCC. It was completed before the first therapy session. It includes 44 items ranging in topics from academic concerns to emotional health to psychotic features. Specific items include “Academic concerns; school work and grades,” “Self-confidence or self-esteem; feeling inferior,” and “Irritable, angry hostile feelings; difficulty expressing anger appropriately.” (see Appendix B for all items.) Participants rated the 44 items on a five-point Likert-type scale choosing one of the following options: 0 (severe problem), 1 (serious problem), 2 (moderate problem), 3 (slight problem), 4 (not a problem or not applicable). All items were reverse scored so that higher scores indicated more serious problems.

Three measures of collegiate difficulty—thwarted belongingness, academic stress, and identity confusion—were captured using items from the PCL. A factor analysis revealed that items on the PCL represent unique factors (Rubinshteyn, 2012). Thus, items may be best analyzed individually, as in the current study.

Thwarted belongingness. An estimate of thwarted belongingness was captured by four items on the PCL. Participants indicated the degree to which they presented problems related to social relationships. Thwarted belongingness scores were created using the responses to the four items with scores ranging from 0 (belonging) to 4 (thwarted belonging). Specific items included: “loneliness, homesickness,” “relationship with friends and/or making friends,” “concern regarding breakup, separation, divorce,” and “shy or ill at ease around others,”

Academic stress. Academic stress was captured by three items on the PCL. Participants indicated the degree to which they presented problems related to academics including “academic concerns, school work and grades,” “overly high academic standards for self,” and “have been considering dropping out or leaving school.” Academic stress scores were created using the responses to the three items ranging from 0 (no academic stress) to 4 (high academic stress).

Identify confusion. Three items on the PCL captured estimates of identity confusion. Participants indicated the degree to which they presented problems related to personal identity including confusion regarding religion, ethnic identity, and sexual orientation. Identity confusion scores ranged from 0 (identity clarity) to 4 (identity confusion).

Behavioral health questionnaire-20 (BHQ-20). The BHQ-20 (Kopta & Lowry, 2002) was a 20-item self-report measure completed before every therapy session by all clients seeking services from the JHUCC. (See Appendix C.) It is used at over 20 college counseling centers (Kopta et al., 2014). The psychometric properties of the BHQ-20 suggest that it is a valid and reliable measure for assessing mental health. It has been shown to have high internal consistency, test-retest reliability, construct validity, and concurrent validity (Kopta & Lowry, 2002).

According to the DSM-5, “A mental disorder is a syndrome characterized by clinically significant disturbance in an individual’s cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress or disability in social, occupational, or other important activities” (p.

20). Thus, the BHQ-20 measures the core components (distress, symptoms, and impairment) of mental illness.

Distress. The participant's level of distress was captured by three questions including "How distressed have you been [in the past two weeks]? Participants responded using a five-point Likert-type scale [i.e., 0 (extremely distressed), 1 (very distressed), 2 (moderately distressed), 3 (a little bit distressed), 4 (not at all distressed)]. Two of the three items were reversed scored so that higher scores indicated more distress. A total Distress score was computed by averaging the participant's responses for the three items providing scores ranging from 0 to 4 with lower scores indicated less distress. Kopta and Lowry (2002) reported the Distress Scale has good internal consistency, with coefficients ranging from .65 to .74, and good test-retest reliability (.71).

Symptoms. Thirteen items assessed the participant's symptoms. Item include: wanting to harm someone, not liking yourself, thoughts of ending your life, feeling nervous, and hear pounding or racing. Participants responses using a five-point Likert-type scale choosing one of the following options: 0 (Almost always), 1 (Often), 2 (Sometimes), 3 (A little bit), 4 (Never). Items were reversed so that higher scores indicated more frequent symptoms. Total Symptom score were computed by averaging the participant's responses to these 13 items providing scores from 0 to 4 with lower scores indicating fewer and less frequent symptoms. Kopta and Lowry (2002) reported the Symptoms Scale has high internal consistency, with coefficients ranging from .85 to .86, and high test-retest reliability (.83). Within the Symptoms Scale are clinical subscales that assess depression, anxiety, and drug/alcohol abuse.

Impairment. The participant's level of impairment was captured by four questions. These items asked participants to respond to the prompt "How have you been getting along in the following areas of your life over the past two weeks?" in regard to nonfamily social relationships, life enjoyment, work/school, and intimate relationships. Participants responded using a five-point Likert-type scale choosing from one of the following options: 0 (Terrible), 1 (Poorly), 2 (Fair), 3 (Well), 4 (Very well). Items were reverse scored so that higher scores indicated more impairment. A total Impairment score was computed by averaging the participant's responses on these four items providing scores ranging from 0 to 4 with lower scores indicating less impairment. Kopta and Lowry (2002) determined the Impairment Scale has high internal consistency (coefficients ranging from .72 to .77) and test-retest reliability (.80).

Global mental health (GMH). An overall measure of mental health was captured using all 20 items included in the BHQ-20. Therefore, the GMH Scale captured the collective distress, symptoms, and impairment level for students at each therapy session. Kopta and Lowry (2002) determined the GMH Scale has high internal consistency, which coefficients ranging from .89 to .90, and high test-retest reliability (.80).

Depression. A measure of depression included three symptom items on the BHQ-20 ($\alpha = .83$). Items captured multiple depressive symptoms including low self-esteem, depressed mood, and hopelessness. Depression scores were created using the averages of the three responses with total scores ranging from 0 (no depression) to 4 (high depression).

Anxiety. A measure of anxiety included three symptom items from the BHQ-20 ($\alpha = .79$). Items captured anxious symptoms, such as fearful, feeling nervous, and heart

pounding. Anxiety scores were created using the average of the three responses with total scores ranging from 0 (no anxiety) to 4 (high anxiety).

Substance abuse. Substance abuse was captured with two symptom items presented in the BHQ-20. Items assessed the extent to which participants felt distress within the past two weeks caused by alcohol/drug use interfering with performance at school/work and relationships with family/friends. Substance Abuse scores were created using the averages of the two responses with total scores ranging from 0 (no substance use) to 4 (high substance use).

Procedure

When a student arrived at the JHUCC for an intake session, the PIF, PCL, and BHQ-20 were administered as part of the standard clinic routine before being seen by a clinician. For all other psychotherapy sessions, the student completed the BHQ-20 to re-assess mental health functioning. These measures were completed by all students receiving services through the JHUCC between the 2002-2003 and 2006-2007 academic years. The results of the questionnaires were made available to treating clinicians. Students consented to participating in research at intake for treatment, as a portion of the therapy consent form directly stated that information collected during treatment could be utilized for research. All identifying information was discarded before the data was made accessible to the present researcher. A specific PIF number was given to each student in order to monitor all re-assessments of the BHQ-20. Students did not receive any compensation for participating.

Measuring suicidal risk. Level of suicidal risk was based on students' responses to Question 10 on the BHQ-20, which asks students "In the past two weeks how much

have you been distressed by thoughts of ending your life?” Students responded using a Likert scale including the options: 0 (almost always), 1 (often), 2 (sometimes), 3 (a little bit), 4 (never). This item was reverse scored so that higher scores indicated more suicidal risk.

Based on their responses to Question 10 indicating their level of suicidal risk, students were categorized into three groups: none, moderate, high. Those who responded to Question 10 with “never” were categorized as not at risk (none). Those who responded with either “a little bit” or “sometimes” were categorized as having moderate suicidal risk levels. Finally, those who indicated “often” or “almost always” having been distressed by thoughts of ending their life in the past two weeks were categorized as highly at risk for suicide.

Therapeutic outcomes. The study used three measures of therapeutic outcomes. The first measure was the number of sessions attended, which was derived from the database of BHQ-20 scores (since every student completed the measure at every session). The second measure was mental health functioning during final therapy session, which was captured by the four major scales (Distress, Symptoms, Impairment, and GMH). Finally, change in mental health was calculated as the difference in scores on the four major scales from the first session to the final session.

Results

Exploratory Data Analysis

Preliminary assumption testing was conducted to check for normality, linearity, and univariate and multivariate outliers. High levels of skewness, as defined by Tabachnik and Fidell (2007), were found for the distributions of items indicating

collegiate difficulty (e.g., thwarted belongingness and academic stress) as well as measures of emotional disturbance (i.e., depression, anxiety, and substance abuse). Therefore, scores were analyzed using the logarithmic transformations of these variables. Reported means and standard deviations are not transformed. Descriptive statistics of items indicating collegiate difficulty and measures of emotional disturbance are displayed in Table 1 and Table 2, respectively. Due to low endorsement percentages, items denoting identity confusion were analyzed as either endorsed or not endorsed. Descriptive statistics of identity confusion items are displayed in Table 3. Correlations between collegiate difficulty items and emotional disturbance scales are displayed in Table 4. Correlations were generally significant, but not so large as to invalidate multivariate analyses due to collinearity.

For all of the following multivariate analyses, preliminary analyses evaluated the assumption of homogeneity of variance-covariance matrices. When this assumption was violated, alpha was set at .025 to determine significance, as recommended by Tabachnik and Fidell (2007). For multivariate analysis of variance (MANOVA), if the overall multivariate test was significant, univariate main effects were examined. In the case of multiple comparisons, alpha was set at .01 to indicate significance.

Table 1. Collegiate Difficulty Descriptive Statistics

	<i>M (SD)</i>	Skewness (<i>SE</i>)	Item Log <i>M (SD)</i>
<i>Thwarted Belongingness Items</i>			
Loneliness, homesickness	1.19 (1.26)	0.75 (0.06)	0.27 (0.25)
Relationship with friends and/or making friends	0.83 (1.13)	1.25 (0.06)	0.19 (0.24)
Concern regarding breakup, separation, divorce	0.69 (1.25)	1.61 (0.06)	0.15 (0.24)
Shy or ill at ease around others	0.74 (1.10)	1.46 (0.06)	0.17 (0.23)
<i>Academic Concern Items</i>			
Academic concerns; school work and grades	1.84 (1.30)	0.09 (0.06)	0.40 (0.24)
Overly high academic standards for self	1.27 (1.26)	0.67 (0.06)	0.29 (0.25)
Have been considering dropping out or leaving school	0.60 (1.07)	1.84 (0.06)	0.14 (0.22)

Table 2. Emotional Disturbance Scales Descriptive Statistics

	<i>M (SD)</i>	α	Skewness (<i>SE</i>)	Scale Log <i>M (SD)</i>
Depression	1.37 (1.15)	0.83	0.50 (0.06)	0.32 (0.22)
Anxiety	1.13 (1.01)	0.79	0.72 (0.06)	0.28 (0.21)
Substance Use	0.20 (0.55)	0.49 ⁺	3.59 (0.06)	0.05 (0.13)

⁺Pearson Correlation

Table 3. Identity Confusion Item Endorsement Percentages

<i>Identity Confusion Items</i>	<i>N (%) endorsing “Not a problem”</i>	<i>N (%) endorsing “Slight,” “Moderate,” “Serious,” or “Severe” problem</i>
Confusion over personal or religious beliefs and values	1257 (73%)	348 (20%)
Concerns related to being a member of a minority	1473 (86%)	126 (7%)
Issues related to gay/lesbian identity	1510 (88%)	90 (5%)

Table 4. Item and Scale Correlations

	1.	2.	3.	4.	5.	6.	7.	8.	9.
<i>Thwarted Belongingness Items (PCL)</i>									
1. Loneliness, homesickness	--								
2. Relationship with friends and/or making friends	.46**	--							
3. Concern about breakup, separation, divorce	.13**	.09**	--						
4. Shy or ill at ease around others	.30**	.50**	-.02	--					
<i>Academic Issues Items (PCL)</i>									
5. Academic concerns; school work and grades	.23**	.11**	.05*	.10**	--				
6. Overly high academic standards for self	.23**	.14**	.08**	.17**	.35**	--			
7. Have been considering dropping out or leaving school	.33**	.22**	.06*	.15**	.30**	.16**	--		
<i>Emotional Disturbance Scales (BHQ-20)</i>									
8. Depression	.46**	.36**	.16**	.33**	.29**	.26**	.36**	--	
9. Anxiety	.31**	.21**	.11**	.28**	.23**	.23**	.23**	.53**	--
10. Substance Abuse	.08**	.03	.10**	-.02	.07**	-.00	.11**	.15**	.09**

* $p < .05$, ** $p < .01$

Correlates of Suicidal Risk at Intake

Most students entered therapy not at risk for suicide (80%), 18% entered with moderate suicidal risk, and 3% presented with high risk for suicide. Analyses were conducted to identify demographic and clinical characteristics, emotional disturbance, and collegiate difficulty correlates of suicidal risk.

Demographic and clinical characteristics. A univariate analysis of variance (ANOVA) was conducted to assess the relationship between suicidal risk and age. The

relationship between suicidal risk and age was not significant, $F(2, 1711) = 0.17, p < .85, \eta_p^2 < .01$. The average age across level of suicidal risk was 19.6 years.

Chi-square tests of independence were performed to examine the relationships between suicidal risk and demographic and clinical characteristics, including gender, race/ethnicity, previous treatment, and referral source. The results are displayed in Table 5. There was no relationship between suicidal risk and gender, $\chi^2(2, N = 1714) = 4.71, p = .10$. The relationship between suicidal risk and ethnicity was significant, $\chi^2(6, N = 1602) = 16.16, p = .01$. Analysis of the contingency table indicated that Asian-Americans were over-represented in the moderate and high suicidal risk groups, while African-Americans were over-represented in the no suicidal risk group.

Table 5. Demographic Characteristics Across Level of Suicidal Risk

		Level of Suicidal Risk			Total
		None	Moderate	High	
Race/Ethnicity	European-American	841 (82%)	163 (16%)	26 (3%)	1030 (100%)
	Asian-American	275 (73%)	87 (23%)	13 (4%)	375 (100%)
	Latino	83 (82%)	16 (16%)	2 (2%)	101 (100%)
	African-American	84 (88%)	11 (12%)	1 (1%)	96 (100%)
	Total	1283 (80%)	277 (17%)	42 (3%)	1602 (100%)
Gender	Male	841 (82%)	163 (16%)	26 (3%)	1030 (100%)
	Female	275 (73%)	87 (23%)	13 (4%)	375 (100%)
	Total	1283 (80%)	277 (17%)	42 (3%)	1602 (100%)

Note: $\chi^2(2, N = 1714) = 4.71, p = .10$, Numbers in parentheses indicate row percentages

The relationships between suicidal risk and previous treatment, $\chi^2(2, N = 1661) = 6.91, p = .03$, and referral source, $\chi^2(4, N = 1524) = 11.25, p = .02$, were significant. The results are displayed in Table 6. Those entering with moderate and high levels of suicidal risk were more likely to have had previous psychological services. With regard to referral source, those entering therapy with moderate levels of suicidal risk were more likely to

be self-referred or referred by a friend/relative, while those with high suicidal ideation were more likely to be referred by a friend/relative or school staff/personnel.

Table 6. Level of Suicidal Risk Across Clinical Characteristics

		Previous Treatment			Referral Source			
		No	Yes	Total	Self	Family/ Friend	School Staff	Total
Level of Suicidal Risk	None	841 (64%)	484 (37%)	1325 (100%)	555 (46%)	275 (21%)	408 (34%)	1215 (100%)
	Moderate	166 (57%)	127 (43%)	293 (100%)	132 (49%)	87 (26%)	69 (26%)	271 (100%)
	High	22 (51%)	21 (49%)	43 (100%)	12 (32%)	13 (32%)	14 (37%)	38 (100%)
	Total	1029 (62%)	632 (38%)	1661 (100%)	699 (46%)	375 (22%)	491 (32%)	1524 (100%)

Note: Numbers in parentheses indicate row percentages; Previous Treatment and Level of Suicidal Risk $\chi^2(2, N = 1661) = 6.91, p = .03$; Referral Source and Level of Suicidal Risk $\chi^2(4, N = 1524) = 11.25, p = .02$

Emotional disturbance. A MANOVA was conducted to examine whether students' endorsement of Depression, Anxiety, and Substance Abuse differed between the three suicide risk groups. The scores for these three groups on the three scales are displayed in Table 7. With regard to emotional disturbance scales, MANOVA results indicated a significant main effect for suicidal risk, Wilks' $\lambda = .92, F(6, 2740) = 17.36, p < .001, \eta_p^2 = .04$. Subsequent analyses indicated that Depression, $F(2, 1371) = 41.05, p < .001, \eta_p^2 = .06$, Anxiety, $F(2, 1371) = 10.71, p < .001, \eta_p^2 = .02$, and Substance Abuse, $F(2, 1371) = 13.33, p < .001, \eta_p^2 = .02$, were found to be predictive of suicidal risk. Higher scores predicted higher levels of suicidal risk.

Collegiate difficulty. A MANOVA was conducted to examine whether patients' endorsement of collegiate difficulty (i.e., thwarted belongingness items, academic stress, and identity confusion) differed across the three suicide risk groups while controlling for ethnicity, previous treatment, and referral source. The scores for these three groups on the six items are displayed in Table 7.

With regard to thwarted belongingness and academic stress, MANOVA results

indicated a significant main effect for suicidal risk, Wilks' $\lambda = .97$, $F(14, 2538) = 3.00$, $p < .001$, $\eta_p^2 = .02$. Subsequent pairwise analyses showed that level of suicidal risk was significantly predicted by one of the items indicating thwarted belongingness, “loneliness, homesickness,” $F(2, 1278) = 12.31$, $p < .001$, $\eta_p^2 = .02$. Two other items indicating thwarted belongingness—“shy or ill at ease around others,” and “relationship with friends and/or making friends,”—were trending towards significance, $F(2, 1274) = 4.22$, $p = .02$, $\eta_p^2 = .01$, and $F(2, 1274) = 4.22$, $p = .02$, $\eta_p^2 = .01$, respectively. For all of these items, endorsement was associated with increased suicide risk. Level of suicidal risk was not significantly predicted by “concern regarding breakup, separation, or divorce,” $F(2, 1274) = 1.77$, $p = .17$, $\eta_p^2 < .01$.

Table 7. Collegiate Difficulty and Emotional Disturbance by Level of Suicidal Risk

	Level of Suicidal Risk			Total [<i>M (SD)</i>]
	None <i>M (SD)</i>	Moderate <i>M (SD)</i>	High <i>M (SD)</i>	
<i>Thwarted Belongingness Items (PCL)</i>				
Loneliness, homesickness	1.01 (1.18)	1.78 (1.34)	2.12 (1.27)	[1.17 (1.25)]
Relationship with friends and/or making friends	0.71 (1.05)	1.24 (1.30)	1.33 (1.22)	[0.82 (1.12)]
Concern regarding breakup, separation, divorce	0.63 (1.19)	0.88 (1.41)	0.79 (1.39)	[0.68 (1.24)]
Shy or ill at ease around others	0.62 (1.00)	1.16 (1.29)	1.21 (1.29)	[0.72 (1.09)]
<i>Academic Stress Items (PCL)</i>				
Academic concerns; school work and grades	1.72 (1.27)	2.17 (1.32)	2.27 (1.21)	[1.81 (1.29)]
Overly high academic standards for self	1.18 (1.22)	1.44 (1.34)	2.03 (1.38)	[1.24 (1.25)]
Have been considering dropping out or leaving school	0.46 (0.95)	1.03 (1.27)	1.12 (1.45)	[0.57 (1.05)]
<i>Emotional Disturbance Scales (BHQ-20)</i>				
Depression	1.08 (1.01)	2.38 (0.95)	3.12 (0.80)	[1.35 (1.14)]
Anxiety	0.98 (0.94)	1.61 (1.06)	2.05 (1.13)	[1.12 (1.01)]
Substance Abuse	0.16 (0.47)	0.28 (0.64)	0.79 (1.21)	[0.20 (0.54)]

Suicidal risk was predicted by one item indicating academic concerns being “have been considering dropping out or leaving school,” $F(2, 1274) = 5.46$, $p = .004$, $\eta_p^2 = .01$. Endorsement of this item was associated with increased risk of suicide. Endorsement of “Academic concerns; school work and grades” and “Overly high academic standards for

self” did not significantly predict level of suicidal risk, $F(2, 1274) = 0.10, p = .90, \eta_p^2 < .001$ and $F(2, 1274) = 1.51, p = .22, \eta_p^2 = .002$, respectively.

Chi-square tests of independence were performed to examine the relationships between suicidal risk and the three items indicating identity confusion. The results are displayed in Table 8. Analysis of the contingency table indicated that the relationship between suicidal risk and “confusion over personal or religious beliefs and values” was significant, $\chi^2(2, N = 1605) = 22.90, p < .001$, such that those without religious confusion were more likely to enter therapy with no suicidal risk, while those who experienced religious confusion were more likely to enter with moderate and high levels of risk. Level of suicidal risk was also found to be related to “issues related to gay/lesbian identity,” $\chi^2(2, N = 1600) = 6.57, p = .04$. Those with such problems were more likely to enter with moderate and high levels of risk. “Concerns related to being a member of a minority” was not significantly associated with level of suicidal risk, $\chi^2(2, N = 1599) = 4.77, p = .09$.

Table 8. Identity Confusion Items Across Level of Suicidal Risk

		Level of Suicidal Risk			Total
		None	Moderate	High	
Confusion over personal or religious beliefs and values	“Not a problem”	1032 (82%)	199 (16%)	26 (2%)	1257 (100%)
	“Slight,” “Moderate,”				
	“Serious,” or	248 (71%)	82 (24%)	18 (5%)	348 (100%)
	“Severe” problem				
	Total	1280 (80%)	281 (18%)	44 (3%)	1605 (100%)
Concerns related to being a member of a minority group	“Not a problem”	1183 (80%)	249 (17%)	41 (3%)	1473 (100%)
	“Slight,” “Moderate,”				
	“Serious,” or	92 (73%)	31 (25%)	3 (2%)	126 (100%)
	“Severe” problem				
	Total	1275 (80%)	280 (18%)	44 (3%)	1599 (100%)
Issues related to gay/lesbian identity	“Not a problem”	1214 (80%)	257 (17%)	39 (3%)	1510 (100%)
	“Slight,” “Moderate,”				
	“Serious,” or	63 (70%)	22 (24%)	5 (6%)	90 (100%)
	“Severe” problem				
	Total	1277 (80%)	279 (17%)	44 (3%)	1600 (100%)

Note: Numbers in parentheses indicate row percentages; confusion over personal or religious beliefs and values and level of suicidal risk $\chi^2(2, N = 1605) = 22.90, p < .01$; concerns related to being a member of a minority group and level of suicidal risk $\chi^2(2, N = 1599) = 4.77, p = .09$; issues related to gay/lesbian identity $\chi^2(2, N = 1600) = 6.57, p = .04$

Outcomes Based on Suicidal Risk at Intake

Analyses were conducted to explore differences in total number of sessions and treatment outcomes (i.e., Distress, Symptoms, Impairment, and GMH) across the three suicidal risk groups.

Treatment duration. An analysis of variance (ANOVA) was conducted to examine whether total number of sessions differed between groups entering therapy with different levels of suicidal risk. Results indicated a significant main effect for suicidal risk, $F(2, 1711) = 9.65, p < .001, \eta_p^2 = .01$. Subsequent pairwise analyses revealed that those entering therapy with no suicidal risk ($M = 4.16, SD = 0.13$) terminated therapy before those entering with moderate risk ($M = 5.49, SD = 0.28$), $p < .001$. However, those entering therapy with high suicidal risk ($M = 4.60, SD = 0.71$) remained in therapy as long as those with no and moderate risk, $p = .54$ and $p = .24$, respectively.

Other descriptive statistics, including median, mode, and highest total number of sessions, also varied between groups entering therapy with different levels of suicidal risk. These statistics are displayed in Table 9.

Table 9. Treatment Duration by Level of Suicidal Risk

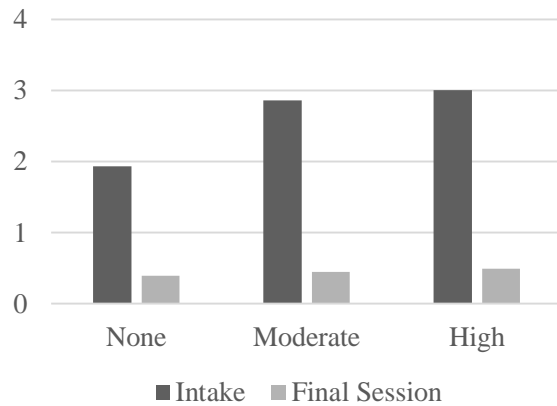
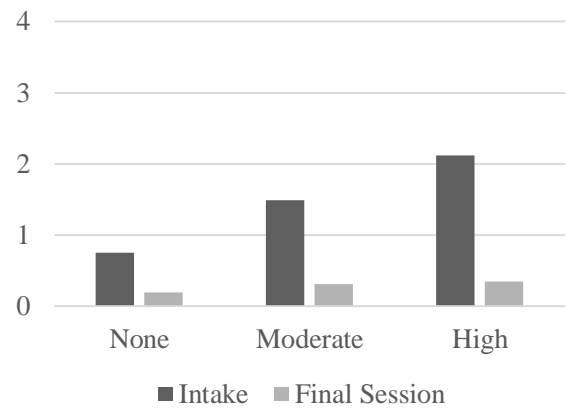
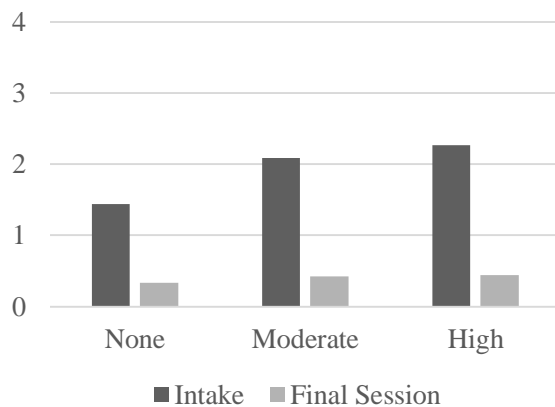
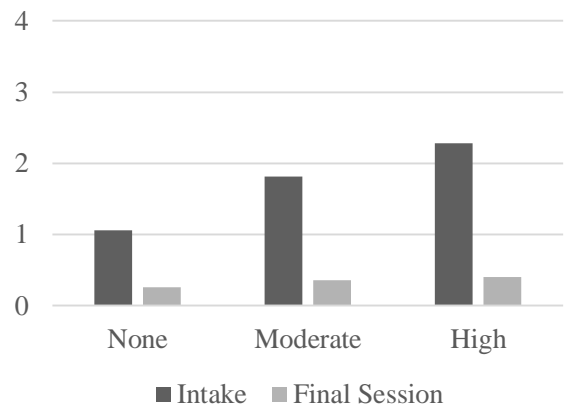
	Suicidal Risk		
	None	Moderate	High
<i>N</i>	1369	300	45
<i>M (SD)</i>	4.15 (4.68)	5.49 (5.44)	4.60 (3.40)
Median	2.00	3.00	4.00
Mode	1	1	3
Min/Max	1/31	1/35	1/17

Changes in mental health. A multivariate analysis of covariance (MANCOVA), controlling for total number of sessions, was conducted to examine whether change in

Distress, Symptoms, Impairment, and/or GMH from intake to final session differed between groups entering therapy with various levels of suicide risk. The scores for these three groups on the four scales are displayed in Table 10. MANCOVA results indicated a significant main effect of suicidal risk, Wilks' $\lambda = .93$, $F(8, 3408) = 15.79$, $p = .001$, $\eta_p^2 = .04$. Subsequent pairwise analyses showed that level of suicidal risk significantly predicted change in Distress, $F(2, 1707) = 22.22$, $p < .001$, $\eta_p^2 = .03$, Symptoms, $F(2, 1707) = 52.61$, $p < .001$, $\eta_p^2 = .06$, Impairment, $F(2, 1707) = 5.31$, $p = .005$, $\eta_p^2 = .01$, and GMH, $F(2, 1707) = 41.14$, $p < .001$, $\eta_p^2 = .05$. Generally, students' mental health scores improved upon termination, and those who entered with higher levels of suicidal risk experienced the greatest change in mental health. Intake and final session mental health scores for each of the four scales are graphically represented in Figures 1 – 4.

Table 10. Change in Mental Health by Level of Suicidal Risk

		Suicidal Risk			Total <i>M (SD)</i>
		None <i>M (SD)</i>	Moderate <i>M (SD)</i>	High <i>M (SD)</i>	
Change From Intake to Final Session	Distress	-0.33 (0.72)	-0.67 (0.87)	-0.81 (0.82)	-0.41 (0.77)
	Symptoms	-0.13 (0.41)	-0.38 (0.60)	-0.74 (0.86)	-0.19 (0.48)
	Impairment	-0.19 (0.61)	-0.33 (0.73)	-0.41 (0.69)	-0.22 (0.64)
	GMH	-0.17 (0.44)	-0.41 (0.61)	-0.68 (0.68)	-0.23 (0.49)

Figure 1. Distress by Level of Suicidal Risk**Figure 2. Symptoms by Level of Suicidal Risk****Figure 3. Impairment by Level of Suicidal Risk****Figure 4. GMH by Level of Suicidal Risk**

Final mental health functioning. A MANCOVA, controlling for total number of sessions, was conducted to examine whether final Distress, Symptoms, Impairment, and/or GMH differed between groups entering therapy with different levels of suicidal risk. The scores for these three groups on the four scales are displayed in Table 11. Results indicated a significant main effect of suicidal risk, Wilks' $\lambda = .86$, $F(8, 3410) = 33.38$, $p < .001$, $\eta_p^2 = .07$. Subsequent pairwise analyses showed that level of suicidal risk significantly predicted final Distress, $F(2, 1708) = 62.56$, $p < .001$, $\eta_p^2 = .07$, Symptoms, $F(2, 1708) = 133.35$, $p < .001$, $\eta_p^2 = .14$, Impairment, $F(2, 1708) = 56.89$, $p < .001$, $\eta_p^2 = .06$, and GMH, $F(2, 1708) = 116.38$, $p < .001$,

$\eta_p^2 = .12$. Final Symptoms differed across the three groups. However, final Distress, Impairment, and GMH were comparable among moderate and high risk students.

Table 11. Mental Health Functioning at Final Session by Level of Suicidal Risk

		Suicidal Risk			Total M (SD)
		None M (SD)	Moderate M (SD)	High M (SD)	
Mental Health at Final Session	Distress	0.39 (0.15)	0.49 (0.13)	0.49 (0.13)	0.41 (0.15)
	Symptoms	0.19 (0.13)	0.31 (0.13)	0.36 (0.13)	0.21 (0.14)
	Impairment	0.33 (0.15)	0.42 (0.13)	0.44 (0.14)	0.35 (0.15)
	GMH	0.26 (0.12)	0.36 (0.12)	0.40 (0.12)	0.28 (0.13)

Discussion

Correlates of Suicidal Risk

Demographic and clinical characteristics. Among the demographic variables tested race/ethnicity, previous treatment, and referral source were predictive of suicidal risk. As predicted, age was not associated with level of suicide risk in this study. As expected, African-American students presented with the lowest risk for suicide. However, in contrast to what was expected, Asian-Americans were more likely to enter therapy with high suicidal risk. Kim and Zane (2015) found that Asian-American college students are less likely to seek professional treatment due to stigma, financial concerns, and perceived severity of symptoms. The current findings seem to support Kim and Zane's findings on barriers to treatment seeking for Asian-Americans students. Within the current sample, Asian-American college students entered therapy at high risk for suicide. Such risk can be interpreted as severe and is likely perceived as such by students. Across Asian-American students, there may be a high threshold for symptom

severity/suicidality that prevents Asian-American students from seeking treatment before suicide risk is high. This may, in part, be due to stigma towards mental illness and mental health treatment. Thus, students are only able to work against such stigma once they perceive their symptoms too severe and they become at high risk for suicide. It is also possible that Asian-American students are not aware of the free mental health services provided by universities, which may prevent them from entering therapy when their symptomology and suicidality are not so severe.

Contrary to prediction and previous research, gender was not found to be a significant predictor of suicidal risk within this sample. The literature describes a ‘gender paradox of suicidal behavior’ in which there is an overrepresentation of suicidal attempts among females, yet males are more likely to complete suicide (Schrijvers et al., 2012). This paradox may be a result of the effects of life stressors, suicide method, and/or suicidal intention, which highlight gender differences in the suicidal process (Schrijvers et al., 2012). In other words, males and females may experience suicidality differently resulting in different behavioral outcomes. The current study did not find gender differences, yet it appears to have captured a separate element of suicide—suicidal ideation. Coupled with the current findings, it may be that gender differences appear within suicidal behaviors and the suicidal process, yet both males and females are equally susceptible to suicidal ideation. The item used to measure suicidal risk assessed the frequency of “thoughts of ending your life,” which is an indication of suicidal ideation. These suicidal thoughts precede suicidal behaviors (e.g., suicidal attempts and completion) and begin the suicidal process. Therefore, the results might suggest that both males and females are equally susceptible to suicidal ideation, and the differences observed within the gender paradox appear in the subsequent suicidal process and behaviors.

The lack of a significant relationship between suicidal risk and gender might suggest that the measure of suicidal risk was not sensitive enough to capture the complexity of suicidal risk including thoughts of death, intention to kill oneself, composition of a plan, and previous attempts. With the current study assessing suicidal risk according to a single item, it is possible that such a measure may be too broad to capture gender differences within the context of suicidal risk. Future research should utilize comprehensive, yet brief, suicide assessments to validate the current predictive findings and identify whether gender differences appear with regard to frequency of suicidal ideation.

Suicidal risk was associated with previous treatment and referral source. Those who received previous psychological treatment were more likely to enter therapy with higher levels of suicidal risk. Though findings have been inconclusive, some research suggests that early termination of previous counseling may lead to subsequent treatment trials (Swift & Greenberg, 2012). Those who previously terminated treatment prematurely, may have deep-rooted issues tied to negative self-views, which are associated with suicidal risk (Swift & Greenberg, 2012), leaving those who return to treatment at continued high risk for suicide. Similarly, suicidal symptoms are likely to worsen over time if left untreated (Eisenberg et al., 2011). Finally, students returning to treatment at higher risk for suicide than those entering therapy for the first time indicates that mental illness can be a long standing issue for which one treatment may not be helpful enough. Severe mental illness, including suicidal crises, may require multiple treatment attempts in order to move towards recovery.

Those with high risk of suicide were more likely to be referred by others. This highlights the reluctance to seek treatment for those experiencing high suicidal risk. High risk of suicide can be considered crisis and marks a definite need for treatment, yet students at high risk are

unlikely to seek treatment based on their own evaluation of the need for therapy. With a high percentage of other-referred students represented in the high risk group, it is possible that students with high risk of suicide are being coerced into treatment. The fact that students with such a need for treatment do not self-refer for therapy highlights a stigma towards mental illness and the use of mental health services. Future research should identify specific factors that drive such reluctance in self-motivated help-seeking behaviors during such critical times. It is also possible that crises impair judgment and prevent students from seeking help for themselves. Again, future research should explore the barriers to treatment among this high-risk population.

Emotional disturbance. As expected, emotional disturbances were found to be predictive of level of suicidal risk. Higher Depression, Anxiety, and Substance Abuse were related to higher risk of suicide. These findings are congruent with previous research that relates emotional problems to suicidal risk. The findings support theories stating that severe depression and/or anxiety leads to suicidal ideation (Konick & Gutierrez, 2005) and increases suicidal risk. Similarly, high levels of substance abuse may escalate suicidal thoughts thereby increasing suicidal risk (Gould et al., 1998). The results highlight the comorbidity between such diagnoses indicating emotional disturbance and level of suicidal ideation (Haas et al., 2003).

Collegiate difficulty. In line with predictions, suicidal risk was related to aspects of collegiate difficulty including thwarted belongingness, academic stress, and identity confusion. Two of three items indicating thwarted belongingness significantly predicted level of suicide risk and the third item was trending towards significance. This offers support for Joiner's (2009) interpersonal-psychological theory of suicide, which claims that suicide is a function of thwarted belongingness and perceived burdensomeness. With regard to academic stress, students who considered dropping out experienced higher risk of suicide. Therefore, academic challenges do

not appear to affect suicidal risk, except when extreme. It may be that academic difficulty is anticipated while in college. Thus, only extreme impairment within the academic realm warrants increased suicidal risk.

Responses to two items assessing identity confusion were predictive of level of suicidal risk. Religious confusion and sexual minority status led to higher suicidal risk. The college environment often allows for deep exploration of religion and sexual orientation as students are more able to question standards held throughout upbringing and encounter others facing similar exploration. This may lead to greater internal conflict in which old beliefs and values, often instilled through family, are questioned and, at times, rejected. Thus higher risk for suicide may stem from modifying deep-rooted beliefs and the self-concept.

Outcomes Based on Suicidal Risk

Treatment duration. On average, those with moderate levels of suicidal risk remained in therapy the longest. This suggests that a moderate amount of risk is associated with longer treatment duration. It is possible that those who enter therapy without risk of suicide may be able to resolve their issues and complete therapy quickly. Those who enter at high risk for suicide may begin therapy for a crisis and terminate therapy upon resolution of the presenting crisis without addressing any deep-rooted problems. Students with moderate suicidal risk may enter therapy and immediately begin targeting negative self-views, which often require many therapy sessions to reconstruct. Future research can identify factors that contribute to longer treatment duration for those with moderate levels of suicidal risk.

While the average treatment duration is longest for those entering therapy with moderate suicidal risk, students entering with high suicidal risk displayed a higher median and mode with regard to total number of sessions. Given the positively skewed distributions, the median may be

a more accurate representation of total number of sessions for the three group (no risk, moderate risk, and high risk). The results, then, show that higher suicidal risk leads to longer psychotherapy. This is especially interesting as the current findings indicate that those who enter therapy with higher levels of suicidal risk are more likely to be referred by others. These findings suggests that despite barriers keeping those with high levels of suicidal risk from seeking treatment, they are likely to find great value in psychotherapy that allow for longer treatment.

Change in mental health. Overall, mental health scores improved upon termination. As expected, those who entered with higher levels of suicidal risk experienced the greatest changes in Distress, Symptoms, Impairment, and GMH. Greater changes may have been motivated by both students and the therapists. Students entering therapy during a mental health crisis presumably hope to relieve their distress, symptoms, and impairment and bring these to manageable levels. This motivation keeps them in therapy for a longer period of time than their peers with lower levels of suicidal risk and allows them to increase their positive change within therapy. Therapists are also likely to monitor the student's suicidal risk and target therapy towards reducing some of the factors that increase suicidal risk, such as distress, symptoms, and impairment.

Final mental health functioning. In contrast to predictions, mental health functioning at time of final session differed across groups presenting with various levels of suicidal ideation. Generally, those who entered at higher risk for suicide completed therapy with scores indicating more Distress, Symptoms, Impairment, and worse GMH. This implies that students who enter with different levels of suicidal risk differ in their tolerance of mental health problems. Those who enter therapy with higher suicidal risk are presumably content terminating therapy with higher impairment in mental health functioning, as compared to their lower-risk peers. This

might suggest that those who enter therapy at high risk for suicide are likely to terminate therapy prematurely and, as other findings within this study indicate, more likely to return to therapy at a later date.

Interestingly, the results indicated that the moderate risk and high risk groups reported comparable Symptoms scores at the time of the final session. This suggests that therapy with those at high risk for suicide might focus more on decreasing symptoms as opposed to distress and/or impairment. This might be interpreted as following therapeutic procedures that suggest addressing the client's safety before addressing more deep-rooted issues related to negative self-views (Swift & Greenberg, 2012).

Summary

The present study found many demographic and clinical characteristics (i.e., race/ethnicity, previous treatment, and referral source), emotional disturbances (i.e., depression, anxiety, and substance abuse), and collegiate difficulties (i.e., thwarted belongingness, academic stress, and identity confusion) that are related to level of suicidal risk at intake. It also revealed positive treatment outcomes as they relate to mental health functioning (i.e., distress, symptoms, impairment, and global mental health) suggesting that those who enter therapy at high risk for suicide are receiving the help they need.

Limitations

The present study sought to analyze questionnaires already in use across college counseling centers in order to supplement clinical practice without adding measures. This was to preserve the brevity of questionnaires. However, the use of archival clinical data presents many limitations with regard to the measures used in analyses. First, the independent variable—suicidal risk—was captured using a single item. This compromises the reliability and validity of

the findings. Therefore, replication is required in order to confirm the results. Second, there is subjectivity embedded within the responses as to the amount that qualifies as “often” or “a little bit,” for example. Students who have a history of frequent thoughts of death may grow accustomed to having such thoughts and may view what others may consider a high frequency as less extreme over time. Finally, this measure did not capture the multiple aspects of suicidal risk. The item quantified the frequency of current suicidal thoughts, which omits important aspects of suicidal risk. For example, the measure did not capture the extent of the suicidal ideation (including the intent to end one’s life, the composition of a plan to end one’s life, and/or the action towards ending one’s life). Nor did it capture past ideation or attempts, which strongly predict later suicidal attempts (Fry, 2009) increasing one’s risk of suicide. All such factors are important to consider when measuring suicidal risk.

Another limitation is that the present study measured therapeutic outcomes and, certainly, the counselor’s therapeutic approach is likely to affect outcomes such as treatment duration and mental health functioning. However, such information was not made available. Therefore, it is impossible to determine how such factors may have impacted students’ levels of distress, symptoms, impairment, and global mental health. Future research may compare therapeutic approaches and techniques in treating college students at risk for suicide.

Finally, it is difficult to determine the generalizability of the results. Data was generated from one university and there is reason to believe that results may have captured institutional effects. Stephenson and colleagues (2005) note the variability in suicide rates across schools due to institutional factors such as competitiveness, culture, school type, and geographic location. Therefore, it is unknown whether the findings would generalize past large, competitive, research-driven four-year campuses located on the East coast.

Future Directions

The current study provided valuable findings to contribute to the research available regarding suicidal risk among college students, specifically those who sought treatment from university counseling centers. Since all of the measures analyzed are currently in use at the JHUCC as well as other university counseling centers, this provides ease of application of the findings into counseling centers. The results of the current study can help therapists in university counseling clinics identify students at various levels of risk for suicide using basic information captured at most counseling centers (i.e., race/ethnicity, current mental health, and presenting problems), which can inform their treatment approach.

The current findings can not only inform clinical practice, but also future research. For example, the findings suggest that those at highest risk of suicide are unlikely to self-refer for treatment. This warrants investigation into barriers preventing this population from recognizing and/or reacting to their need for professional mental health services. Once barriers are identified, programs can be implemented in order to encourage students at high risk of suicide to seek treatment.

Collectively, the findings can be used to create specific profiles that identify students who enter therapy with similar presentations and responses to treatment. For example, those who have had never received psychological treatment and endorse frequent thoughts of death may be classified as students in mental health crisis and may need to reduce their symptoms by a certain amount in order to persist in treatment and address their impairment.

Finally, exploration into the process of therapy with regard to mental health functioning may be an interesting avenue for future research. Specifically, identifying trend in mental health functioning at various points in therapy associated with particular clinical profiles presented at

intake is likely to provide useful clinical findings. Similarly, examining the therapeutic approach most successful for each group of students is an important route for future research.

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