Investigation of a Clinical Suicide Risk Assessment

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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2014

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Abstract

This study looks to evaluate the effectiveness of a suicide risk assessment tool, the Suicide Risk Assessment Matrix-Adult (S-RAM). The S-RAM is designed to incorporate risk and protective factors and the assumption is that the protective factors will help to influence the risk level of the clients. To answer the question of which variables have an effect on the Overall Suicide Risk Level (OSRL), four key subscales of the S-RAM were evaluated, these are Static, Risk, Protective, and Risk Formulation subscales. An Extreme Groups Design was used to sort the variables and cross tabulations were completed for each subscale to determine if there were any significant correlations and their strength. From this study, it was found that individually, the subscales had a “low” to “moderate” correlation with the “high” OSRL rating. Collectively, within the Risk Formulation subscale, the subscales appeared to correlate more significantly with the OSRL and key variables were highlighted. Further use of the S-RAM would require adjustments to the rating levels to provide consistency in ratings and add capability to score the items rather than using subjective information. The S-RAM does have potential to detect those at high risk for suicide however, the recommended changes would be very crucial to its continued use.
Acknowledgments

I would like to thank my advisor, Dr. Paul Granello, my dissertation committee, and the staff at Netcare, Inc. for assisting me through this process. I would like to thank my family and friends for their continued support and understanding.
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Chapter 1: Introduction

1.1 Statement of the Problem

The American Association of Suicidology 2010 Official Data reports that suicide is the 10th leading cause of death in the United States and 3rd for young people. The report shows that suicides occur at a rate of about 12.4 people per 100,000, which is about 105.1 people per day or one person every 13.7 minutes (www.suicidology.org). Suicide is a public health concern because of the number of lives lost. Each year over 38,000 people complete suicide, often leaving loved ones, friends, and possibly healthcare professionals behind to pick up the pieces (www.cdc.gov). Economically, suicide costs $34 billion annually in the United States (www.afsp.org). Being able to improve triage of those at the highest risk from those that utilize services frequently but are not in imminent danger is critical. Knowledge of particular factors and how these factors may contribute to suicide attempts and completions is important to ease depleting resources.

Known factors that are related to suicide risk include gender, age, race, marital status, mental and emotional health, substance abuse, and being a part of a particular population. Help is available for those who are in need in the form of emergency departments and the psychiatric emergency response system. However, this help is limited due to changes in social climate such as the push to treat people with mental illness in a community based setting versus an inpatient facility. The closing of these inpatient facilities, mostly due to deinstitutionalization, created a decrease in beds and a
decrease in funding for treating mental illness (Yoon & Bruckner, 2009). Detecting those who are at the highest risk for suicide will encourage a better triage system and make the most of decreasing resources.

1.2 Psychiatric Emergency Response System

Psychiatric Emergency Response System is one method of helping those at risk for suicide is the psychiatric emergency response system. A psychiatric emergency is defined as the escalation of a “crisis” or a series of “crises” for an individual that may cause psychotic symptoms (Zealberg, Santos, and Puckett, 1996).

The structure of the psychiatric emergency response system is multifaceted. It includes services from crisis hotlines, mobile units, hospital emergency departments, and community based outpatient services. Not all of these services are available at every geographic area for use around the country, and the majority of psychiatric emergencies end up in hospital emergency rooms and/or psychiatric emergency departments. Fewer options for services coupled with acute and chronic symptoms forces many individuals into emergency rooms and emergency departments all across the country. A review of the literature shows an increase in the number of emergency department visits for psychiatric crises over time. Between 1992 and 2001, the number of emergency department visits increased by 17.7 million for a total of 107.5 million visits during that 9 year period (Bamezai et al., 2005). Between 1992 and 2000, emergency department visits due to mental health problems increased 15%. Deinstitutionalization and gaps in community mental health resources have resulted in an increase in annual emergency department visits from 89.8 million to 108 million. At the same time, there has been a decrease in the number of hospitals with emergency departments from 6,000 to 4,000 (Perhats and
Valdez, 2008). A 2006 report by The Centers for Disease Control and Prevention reported that 395,000 people went to an emergency department due to a non-fatal, intentional self-injury (http://www.cdc.gov). A 2003 report by Gairin et al., found that 40% of people who complete suicide had visited an emergency department within 12 months of their deaths (Ilgen et al, 2009).

Because of changes in the state and federal funding for adults and children with mental health issues emergency rooms, homeless shelters, and jails are faced with an influx of people with psychiatric emergencies (www.nami.org). Between 1970 and 2000, psychiatric beds dropped from 207 per 100,000 people to 21 beds per 100,000 people (Yoon & Bruckner, 2009). Psychiatric emergency departments and psychiatric inpatient facilities have become pressured to focus on discharging patients faster to make room for more severely ill patients (Lamb & Weinburger, 2005). An increase in patients coupled with limited space has led to an increased length of stay in emergency rooms.

“Guesting” is one solution proposed which allows those assessed to be at a higher risk for suicide and/or self harm to be moved to an area that is less busy than the emergency department, and includes direct observation, orientation, and assignment to an emergency physician (Winokur & Senteno, 2009). These patients will wait in the guesting area until an inpatient bed is found. The authors write that symptoms are less likely to be exacerbated due to the patients not being in a busy and often overwhelming emergency department environment. Moving the most severe cases to a guesting area can free up space in the emergency department for other types of emergencies.
1.3 Cost of Services

The Community Mental Health Act of 1963 mandated that psychiatric emergency services be provided for all federally funded community mental health systems (Allen, 1996; Arfken et al., 2006; et al., 2006). Government money was promised to assist the individual states in caring for those in psychiatric related crises, including hospitalizations. The goal was to increase the number and availability of community-based facilities (Botha et al., 2010). Since the onset of the Community Mental Health Act of 1963, federal funds allocated for people with mental and emotional problems have been shifted, decreased, or taken away, leaving the individual states to pull from their own resources to cover the costs of services. Many of the proposed community-based facilities were never opened putting more of a strain on existing resources. These demands led to policy changes on admission so that on the most severe patients were admitted (Botha et al., 2010). The decrease in allocated federal funds due to policy and economic changes is a process called deinstitutionalization (Allen, 1996; Rubin, 2007). As the states worked to deinstitutionalize, people in need of more intensive mental health services were released back out into the community without a means of care (Rubin, 2007).

Financial support to fund the cost of psychiatric emergency services has declined even though the number of visits to emergency rooms and emergency department has risen along with the cost to care for individuals in need of services. Overall, it is estimated that $70 billion is spent annually for psychiatric care including hospitalization and medication while $80 billion is estimated to be the total of lost wages, family care giving, and productivity (http://www.naminh.org/action-facts-myths.php). In 2005, the
cost per visit to trauma emergency departments was $192 to $215 and for non-trauma emergency departments the cost is $116 to $130 (Bamezai et al., 2005). In a 2011 NAMI report, $1.6 billion in general funds were cut since FY2009 including those funds for crisis services (www.nami.org).

Psychiatric patients who are found to be frequent users of emergency departments are also found to have little to no financial and social support and have the most severe diagnoses (Perhats & Valdez, 2008). Because of the push to treat only the most severe patients, several patients have been discharged prematurely resulting in a ‘revolving door’ effect (Botha et al., 2010). The process of deinstitutionalization has been said to have a direct effect on increase in suicide rates because of having less beds, and those with mental illnesses turning to unsafe behaviors such as substance abuse which can increase risk for suicide (Yoon & Bruckner, 2009).

A review of the literature reveals frequent users of psychiatric services as male, unmarried, unemployed, having a diagnosis of a psychotic disorder, a history of psychiatric hospitalizations, and having firearms in the home or access to firearms, specifically handguns, being homeless, living alone, and having lower education (Botha, et al., 2010; Brent & Bridge, 2003; Pasic, et al., 2005; Segal et al., 1998; Young et al. 2005).

Medicaid and private insurance are the primary funding sources in addition to the money from the federal government for psychiatric care. In 2001 Medicaid accounted for 45% of all health care spending and $85 billion was spent on mental health that year (SAMHSA, 2008). Currently, Medicaid is responsible for 50% of public sector spending (www.nami.org). In Ohio, it is reported that 37-40% of admissions to state hospitals have
been Medicaid patients (www.nami.org). The 1996 Surgeon General’s Report, states that Medicaid and Medicare reduced their funding for long-term care and even those with private insurance have limits, offering allowances for acute care only (SAMHSA, 2008). The reduction in funding and reimbursements have led to millions in lost compensations for psychiatric hospitals (www.nami.org).

Guidelines were put in place to regulate who gained access to different levels of care as financial responsibility shifted from federal to state level. Insurance companies’ guidelines have made it more difficult to admit people into hospitals (Jobes, 2006). Misdiagnosis and ‘labeling’ occurs as facilities try to get paid for a service, which in turn leads to more admission and policy changes (Dobransky, 2009). Capitation is one of the consequences born to the changes in funding. Capitation is described as a condition where government and private insurers pay providers a fixed amount per year for each insured person no matter what services were provided (Catalano et al., 2005). The belief is that unnecessary services will not be performed if providers know that they will only receive a set amount of money. The authors write about several studies from around the country that point to repeat psychiatric emergency department admissions with agencies under capitation.

Those against capitation believe that client’s needs may be neglected in an effort to save money. In his book, Managing Suicidal Risk: A Collaborative Approach, David Jobes writes that in order to stay in the hospital, a person “must remain highly suicidal” (Jobes, 2006, pg. 3). Managed care often puts pressure on emergency clinicians to triage patients quickly to the least intensive level of care in an effort to save money (Spiggle & Hughes, 1998).
1.4 Risk Factors

1.4.1 Definition of Risk Factors

Risk factors are defined as, “cognitive, affective, and behavioral components that have been found to relate to incidents of attempted and completed suicide” (Gutierrez et al., 2000). Suicidal ideation, previous attempts, hopelessness, depression, anxiety, substance abuse, impulsivity, and a confounding Axis II disorder are all risk factors that are consistently mentioned in the literature (Busch & Fawcett, 2004; Goldston et al., 2006; Gutierrez, 2000; Zealberg et al. 1996). The National Institute of Mental Health (NIMH) lists these same risks factors and includes a history of family violence and having firearms in the home (NIMH, 2008). The single most predictive factor for suicide is a previous attempt. Between 30-40% of people who ultimately die by suicide has had a previous attempt (McKeon, 2009).

Risk factors that are more situational and may provide the catalyst leading up to a suicide attempt are called acute factors. At the time of admission into an emergency room or emergency department, the patient will be evaluated for acute symptoms, which are symptoms or factors with a more recent onset that may be the cause of his or her self-injurious behavior. Acute risk factors for suicide include “panic attacks, psychic anxiety, loss of pleasure and interest, moderate alcohol abuse, depressive turmoil, diminished concentration, and global insomnia” (Simon, 2006).

Chronic risk-factors should also be evaluated if possible at the time of admission. Clinicians are to take care during evaluations because acute symptoms may mask more chronic symptoms that can also lead to suicidal ideation and attempts. Chronic factors may be evaluated through gathering information regarding a history of mental health
disorders and chronic substance use. Chronic risk-factors may also be described as “traits” of an individual. Traits are defined as, “reflective of genetic predisposition, temperament, personality, or individual habitual, or ingrained ways of responding to the world” (Goldston et al., 2006). Traits that are predictive of suicide are listed as depression, hopelessness, and anxiety (Goldston et al., 2006). These symptoms may be present throughout the life time but at significant points in a person’s life may be more pronounced thus increasing the risk for suicide.

People at risk for suicide often seek health related services or treatment for other reasons such as acute symptoms of a mental or emotional disorder, substance abuse or intoxication, and deliberate self-harm, all of which can shroud suicidal intent. As many as 80% of people who have completed suicide spoke with someone before their death and that often, there is some sort of warning given (Granello & Granello, 2007). Up to 45% of those who die by suicide had made contact with their primary care physician within one month of their death (Bryan et al., 2009).

With increases in emergency department and emergency room visits and decreases in funding, the question becomes how to handle these changes while providing the best care for patients, especially those at risk for suicide. It is dangerous and irresponsible to not acknowledge that this subset of the population has special needs that require skilled methods for quick assessment. Suicide risk assessments need to achieve accuracy in two key areas: identifying those at risk for suicide and identifying the level of risk.
1.5 Purpose of the Study

With the enormous amount of risk factors, demographics, and special populations to consider, it is easy to see how detection of suicide risk assessment has become complicated. Currently suicide risk assessments consist of interviews with the client and/or family members if possible and can include self-report questionnaires focusing on a narrow band of risk factors (i.e. Beck Depression Inventory, Beck Hopelessness Scale, Beck Scale for Suicidal Ideation, SAD PERSONS, IS PATH WARM). At this time, focusing on risk factors helps to identify those acute risk factors that need immediate attention.

Relying on risk factors alone may lead to false positives or false negatives as these assessments are trying to predict behaviors (Granello & Granello, 2007, Patterson et al., 1983). Plus relying on standardized tests misses compounding factors. Nelson et al. (2010) write in their article about assessing protective factors in addition to risk factors. The authors write that only focusing on one factor such as depression ignores other factors. They argue that assessments that completely ignore protective factors are less accurate in their predictions. Russ et al. (1999) writes that using only risk factors can lead to false predictions because risk factors that are associated with suicidal behaviors have a high sensitivity, however, they have a low specificity, which compromises their predictive power.

The future of suicide risk assessments should include risk and protective factors. As they are developed and studied, the following questions must be answered: Would an assessment tool, incorporating both risk and protective factors positively identify those at risk for completing suicide? What levels of care (placements) would result from a more
accurate assessment tool? Do patient demographics effect clinicians’ assessments? Are false positives occurring, and if so, why?

Accurate detection of those at risk for suicide benefits society by creating a way to save lives, assist those in psychological pain, and ease the burden on an already overworked emergency medical system. Given the over 38,000 people that complete suicide each year with over 300,000 visits by suicidal individuals to emergency departments each year. In order to accommodate the increase of patients and deal with the rising costs of services, a new direction may need to be taken in how suicide risk assessments are structured and used. It would seem that what is needed is an assessment tool that incorporates levels of risk factors and protective factors, as well as considers individual demographic information. This assessment tool will not take the place of one to one interviews with the client nor replace the professional expertise of the assessing clinician. This type of tool will provide an opportunity to streamline the assessment process by bringing together all, if not most, of the key factors that may predict or protect against suicidal behavior, and potentially help the clinician make better use of assessment time spent in an emergency department or emergency room.

Netcare Access is an emergency department in Columbus, Ohio that chose to develop the Suicide Risk Assessment Matrix (S-RAM) to help address the problem of specificity and accuracy in suicide risk assessments. The S-RAM includes subscales on demographics, risk factors, and protective factors. These factors are rated on a scale of ‘Low’, ‘Moderate’, or ‘High’. The assessing clinician is to rate the individual in these areas, and using the data from these subscales coupled with their interviews, determine the client’s suicide and appropriate level of care.
The purpose of this study is to see if a multi-dimensional suicide screening instrument used in a real world setting can specifically and accurately detect those at a higher risk of suicide by utilizing demographics, risk factors, and protective factors. This will be determined by assessing how well this instrument can help clinicians improve the detection of those at higher risk for suicide. The S-RAM includes five subscales: Static Risk Factors, Dynamic Risk Factors, Protective Factors, Clinician Assessment of Reliability, and Risk Formulation. Answers are gathered in all five areas. With the exception of the Static Risk Factors, and the Clinician Assessment of Reliability, all of the subscales are rated with ‘Low’, ‘Moderate’, or ‘High’ for each factor that is recorded. The Static Risk Factors are rated either ‘Present’, ‘Absent’, or ‘Did Not Evaluate’. And finally, the Clinician Assessment of Reliability subscale that asks about the reliability of the information given.

1.5.1 Definition of Terms

Static Risk Factors on the S-RAM has 14 items such as demographics, presence of mental or emotional disorders, and problems with one’s environment. As stated earlier, this area is rated either ‘Present’, ‘Absent’, or ‘Did Not Evaluate’. The assessing clinician can check if these items are present.

Dynamic Risk Factors on the S-RAM includes 26 ‘risk factors’. These risk factors can either be acute or chronic. Within the ‘Low’, ‘Moderate’, or ‘High’ ratings, there are small descriptors within each rating to assist the clinician in his or her choice of rating. Protective Factors on the S-RAM includes 11 items that are found to reduce the likelihood of suicide. These include items such as will to live, religiousness, and family
support. Again, these have a ‘Low to High’ rating with descriptors to help the assessing clinician’s choice.

Clinician Assessment of Reliability subscale has two subscales that include client report and third party information. The clinician is to mark how accurate he or she feels the information is depending on the source.

The Risk Formulation subscale of the S-RAM asks the clinician to rate the total risk of the client in each of the previous four areas plus Suicidality, which is defined as intent, strength of impulse, ideation, history, resolved plans, and preparation; and the Overall Suicide Risk Level. In this subscale, the clinician gives a “Low”, “Moderate”, or “High” rating to the Static, Dynamic, and Protective Factors subscales as a whole, establishes level of suicidality, and then the overall level of risk.

1.5.2 Hypothesis

The hypothesis will be that all three subscales will be strongly considered by the assessing clinicians when determining the Overall Suicide Risk Level. The null hypothesis will be that all three subscales will not be strongly considered by the assessing clinicians when determining the Overall Suicide Risk Level. In order to accept the hypothesis, there should be strong correlations of all three subscales with the Overall Suicide Risk Level. There should also be specific factors within each subscale that through the strength of their correlation with the OSRL, it can be determined that the clinicians are more likely to have considered during the assessment process.

1.6 Set Up

This will be a quasi-experimental design due to utilizing pre-existing data and because data was collected in a setting that makes it difficult to have an ‘experimental’
and a ‘control’ group to manipulate. Demographics, risk factors, protective factors, and referral information (level of care) will be gathered from Netcare between October 2008 and April 2010. Using Extreme Groups design and cross tabulations, it is expected that certain variables will show to be significantly correlated to a “high” rating of the OSRL. It is also expected that smaller number of cases will be in the OSRL group due to the S-RAM being more sensitive to those variables involved in making up a high risk profile.

By assessing the specificity, sensitivity, and accuracy of the S-RAM, it is expected that a specific combination of risk and protective factors leads to the determined suicide risk level by the clinician.

1.6.1 Limitations

There are several limitations of this study. The first being that this is a real world setting in which the information was gathered. Because of the real world setting and the fact that it is unethical to deny services, there is not an “experimental” group and a “control” group as there would be if this were a true experiment. A real world setting also creates issues in referrals such as availability, costs, and type of service.

The instrument used also creates limitations. The first is that the majority of the items on the S-RAM have subjective descriptions that the assessing clinician uses to determine risk levels. Subjective information could change from person to person creating less of an inter-rater reliability. The next is that there needs to be consistency in rating scales. The Static Risk Factor subscale is the only subscale that used “present”, “absent”, or “did not evaluate” to rate the variables. The other subscales on the S-RAM such as the Dynamic, Protective, and Risk Formulation subscales use a “low”, “moderate”, or “high” rating.
Another limitation is the use of the extreme group design model. This model separates the variables into extreme groups using the top third and bottom third of the cases. This helps increase the strength when the correlations may be low to moderate. However, by eliminating the middle third of the cases, it is possible to decrease the generalizability of the study as it may no longer represent the sample population.

The benefits of finding another tool that increases the accuracy and specificity of detecting a person at a high risk of suicide far outweigh the limitations identified. The S-RAM looks to include the presence and level of protective factors that could very well be the difference in referring someone to the least restrictive level of care. The S-RAM may also help to lessen the confusion and strain on assessing clinicians in an emergency setting, while helping to triage clients and decrease a strain on resources.
Chapter 2: Review of the Literature

2.1 Introduction

Every year over 38,000 complete suicide (cdc.gov/violenceprevention). Previous numbers for the U.S. population was about 11 per 100,000 people (Jacobs et al., 1999; Halfors et al., 2004; Meltzer et al., 2000; Shelby et al., 2010). Now this number is showing at about 12.4 people per 100,000 (www.suicidology.org). The completion of suicide should be viewed as an endpoint of a continuum of behaviors that also includes ideations, planning, and attempts (Johnson et al., 2010). A major challenge for mental health professionals is predicting and triaging those at the highest risk. This is mostly done through assessments. A goal in creating better assessments to detect those at high risk for suicide is to improve the accuracy in prediction of those that are likely to complete. Standard methodologies among suicide risk assessments that can specifically predict who will and who will not commit suicide are non-existent (Bongiovi-Garcia et al., 2009; Simon, 2006, pg 1). Many tools used to assess potential for suicide focus on risk factors that can be used to predict future behaviors. Brief screens may have low predictive value and create several false positives and other screens may be too lengthy to use in an emergency setting (Fiedorowicz et al., 2010; Folse & Hahn, 2009).

The literature suggests that a more individualized approach is what will be most useful in assessing someone for potential suicide. This approach will include risk factors,
protective factors, health status, strengths, and unique vulnerabilities (Fiedorowicz et al., 2010). Also to consider is the setting in which the assessment is completed. For example, there is a potential that information could be missed in a busy emergency department versus a primary care physician’s office.

2.2 Assessing for Suicide

Because there are several variables involved in suicidal behaviors it is imperative that detection of suicide risk be as accurate as possible. Suicide assessments at best should be “multifaceted” including several sources of information and clinicians should be well aware of interventions to assist those considered at risk for suicide such as inpatient care, outpatient care, day treatment, medications, and coping techniques (Jobes et al., 2008). One of the difficulties of suicide risk assessments is that they occur “at the wrong time”, be it in a busy emergency room, or in the middle of a busy clinic (Shea, 2002). Given this information, emergency departments are seen as a crucial place to conduct assessments (Folse & Hauhn, 2009; Segal et al., 1998). Mistakes identified under these circumstances include omissions, assumptions, and distortions, which can all lead to the deaths of clients. The literature states that current screening tools are too long and time consuming, and need a trained professional (Folse & Hahn, 2009).

Shea (2011) introduces a framework to suicide risk assessment that may provide some guidance to clinicians in various settings. In his book, Shea discusses that suicide assessments have 3 tasks, gathering information related to risk factors for suicide, gathering information related to the patient’s suicidal ideation and planning, and the clinical decision making that is applied to the first two tasks (pg. 10-11). Shea writes that most people focus on the first and third tasks and ignore the second which is the actual
‘why’ or intent. The framework Shea introduces is the Chronological Assessment of Suicide Events (CASE). The CASE approach is an interview strategy that is designed to elicit suicidal ideation. The client’s answers and the clinician’s understanding of the client’s risk factors help with determining risk level. Since less than 1% complete suicide. Shea states in his book there is a “measure of hope” that suicide is preventable (Shea, 2011, pg 19).

The CASE is based on two frameworks, etiology and phenomenology. Etiology says that ideation comes from situational, psychological, and biological factors. Phenomenology says that there are unique emotions, cognitions, and nightmares. The assessment is affected by the interviewee and interviewer, the setting, and the techniques used. Shea states to be mindful of countertransference, that the client may not show signs of wanting to commit suicide, and to be direct when asking about lethality.

The CASE approach looks at current and past factors for consideration into suicide risk. The timeframe for asking about risk factors is 8 weeks and the clinician is encouraged to ask about transient thoughts, pressing mental health and/or substance abuse issues. Validity of the information is found in following the six validity techniques gathered during the interview. Behavioral incident is defined as the questions about concrete behavioral facts or train of thought. No opinions are given here. Shame attenuation is where the clinician must have a position of unconditional positive regard. The client must not feel ashamed to give their answers to the clinician and there must be a genuine attempt to understand their rationalizations. Gentle assumption is where the clinician assumes that the suspected behavior is occurring and frames the questions around that assumption. This will increase the likelihood that the client will reveal
sensitive information. Symptom amplification is where the questions are asked regarding behaviors where the frequency is higher, knowing the client will minimize. Denial of the specific, is where the clinician asks specific questions with pauses between them. Normalization is described as letting the client know that others have experienced the same symptoms or feelings. Shea writes that validity forewarns of imminent suicide (Shea, pg 125).

Shea gives examples for various settings and different levels of familiarity within his book. He uses vignettes to show different techniques in different settings. Shea specifically mentions two populations, the elderly and adolescents. With the elderly, Shea states to ask about losses. With teens, he mentions to ask and focus on humiliation, recent loss by suicide, subcultures that romanticize death.

Another framework introduced in the literature has to do with minority populations, to include ethnic and sexual minorities. The Cultural Assessment of Risk for Suicide (CARS) was introduced in a study by Chu et al (2013). This assessment tool is designed to specifically focus on ethnic and sexual minorities and identify those risk factors specific to them. The CARS assessment is to be used in addition to current risk assessment tools. The authors write that the CARS is a 52 item tool using a Likert scale that scores from 1 (strongly disagree) to 6 (strongly agree). The questions are derived from the four cultural risk categories of the Cultural Theory and Model of Suicide. The Cultural Theory and Model of suicide categorizes cultural differences in suicide into major risk or protective factors common across 4 major ethnic and sexual minority groups (Asian American, African American, Latino, and LGBTQ). The four cultural risk categories are, Cultural Sanctions, Idioms of Distress, Minority Stress, and Social
Discord. Cultural Sanctions include acceptance or shame of suicide. Idioms of Distress include difficulty in expressing suicidal ideations. Minority Stress includes social identity and position. Social Discord includes risk factors of alienation, conflict, and lack of support.

This study included 950 participants from the general population, 18 or older. Limitations identified include using persons from the general population and not being able to generalize to a clinical population, not having enough representatives from the African American population, and only using four minority groups, it is unknown if the assessment can be generalized to other groups. The authors performed an exploratory factor analysis to find underlying factors and structure of CARS. Chu et al. (2013) concluded that the meaning of the total CARS score will be determined by the specific individual profiles and elevated subscales. However, an elevated total CARS score will mostly likely determine elevated suicide risk. The authors write that the CARS can be used in the screening, prevention, and management of suicide. Further limitations of this study could be that it is adding another 52 item assessment tool to an already assessment heavy process. The CARS does provide other factors to consider when working with minority groups which could be essential in determining risk level.

2.3 Commonly Used Screening Tools

Standard assessments help gauge the level of identified risk factors. Multiple screening tools can be used in conjunction with a thorough assessment. A few commonly used assessments include the Beck Scale for Suicide Ideation (BSSI), Beck Depression Inventory – II (BDI-II), Beck Anxiety Inventory (BAI), and the Reason for Living
Inventory (RFLI). They act as a guide to various levels of care to help determine the best level of care possible.

The original Beck Depression Inventory was developed in 1961. The BDI II was developed in 1996. This tool was more consistent with the DSM IV criteria for depression (Grothe et al., 2005). BDI- II has 2 factors, somatic and cognitive. In the 2005 Grothe article, there was a concern raised because the BDI and BDI-II were developed using information from Caucasians and middle class. The authors wrote that it is hard to determine validity and reliability with low income African-Americans. The study compared internal validity numbers to that of studies with primarily Caucasian respondents. Results showed comparable numbers indicating that BDI-II works well for low income African-Americans. However, due to type of study, the limitation is the generalizability.

The BDI-II is used to assess presence and severity of depression (Grothe et al., 2005). The BDI II is used in conjunction with other scales to determine risk level due to depression being a key risk factor. Assessing level of depression can help distinguish those at high risk. Dervic et al.(2006), assessed risk and protective factors for people who had childhood abuse against lifetime attempt and non-attempt. The authors indicated that those at higher risk to attempt and had a history of childhood abuse were younger when attempting suicide and reported fewer reasons for living.

The Beck Hopelessness Scale (BHS) is a 20 item self-report measure that assesses the presence and severity of hopelessness. Hopelessness is a factor of depression which is a known risk factor for suicidal ideations and suicide. The BHS is used in addition to other assessment tools, has been found to have high internal and external consistency,
and good generalizability with various populations, such as different ethnicities and clinical vs. non-clinical populations. BHS has come under criticism because it was created from majority college age, Caucasian base. Low scores only show the absence of hopelessness rather than a hopeful person. Not a dichotomous tool. Several studies show high scoring participants were at an increased risk for suicide.

Reasons for Living Inventory (RFLI) was created by Marsha Linehan to identify protective factors and reasons people found for not completing suicide. The RFLI has 18 questions and uses a 6 point Likert scale with 1 being ‘not important’ and 6 being ‘extremely important’ (Cotton et al., 1995). The RFLI is sometimes used to assess reliability and validity in newer assessment tools that look to improve upon the idea of assessing protective factors against suicide. Rutter et al. (2008) evaluated the psychometric properties of a newer scale that included protective factors called the Suicide Resilience Inventory-25 (SRI-25). The overall idea is that in order to advance suicide assessment, protective factors must be included. The SRI-25 was evaluated using the RFLI as one of the assessments tools to measure against. The authors write that the RFLI provided the framework on which to create assessment tools that incorporated protective factors. The SRI-25 was found to be valid and reliable when correlated with existing scales. The authors also write that in addition to incorporating protective factors, it is also important to look at the ability to access these protective factors such as social support. The authors also write that by asking about protective factors, the client may tap into hope and strengths that he or she may not have accessed prior. Another study that utilizes the RFLI to assess validity and reliability is by Cotton et al. (1995). The authors assess the psychometric properties of the Suicidal Behaviors Questionnaire (SBQ). The
SBQ was also developed by Linehan. The SBQ was found to have strong internal consistency and test-retest reliability over a two week period. The SBQ showed a significant correlation with the RFL.

Acute risk factors can be quickly assessed using short scales that focus on known risk factors. Two such scales are the ‘SAD PERSONS’ scale or the ‘IS PATH WARM’ scale. The SAD PERSONS scale was created as a teaching tool to keep the 10 major factors for suicide at the forefront in assessing for suicide (Patterson et al., 1983). The 10 factors include Sex, Age, Depression, Previous attempt, Ethanol Abuse, Rational thinking loss, Social supports lacking, Organized plan, No spouse, and Sickness. Each present risk factor gets 1 point and the scale is scored from 0 to 10. ‘IS PATH WARM is an acronym that assists in identifying warning signs of suicide. The risk factors identified are Ideation, Substance abuse, Purposelessness, Anxiety, Trapped, Hopelessness, Withdrawal, Anger, Recklessness, and Mood changes (www.suicidology.org).

Depending on the severity of symptoms, the patient may be hospitalized to help treat the acute symptoms, isolated for a time in a secured area, or referred to a community organization (Allen, 1996; Cournos & Goldfinger, 2006).

Utilizing as much information as possible can help eliminate mistakes and save lives, however, deciding on which information to use to get to the best answer is a significant challenge. Standardized tests can be helpful by what they do not report.

Clinicians should monitor standardized suicide risk assessments for what clients omit or leave blank (Nugent & Williams-Hayes, 2003). The authors write that knowledge of the predictors for suicidal ideation and risk is important and they list the risk factors commonly stated in other sources of literature such as demographic information,
relationship status, employment information, situational information, etc. When completing a suicide risk assessment, the clinician is encouraged to gather this information and also see what is not there. For example, the authors write that a client leaving blank information such as income, education, and number of family members in the home is a good indication that the person may be at increased risk for suicide. Their reasoning is that the absences of these three items indicate that depression may be present and the severity of the depression could be high. Risks include low income, low education, poor social support, a client who leaves these items blank may indicate that these are problems that the client is trying to avoid. The clinician must use this knowledge coupled with factors such as the clients’ demographic information and interview information to determine those at the highest risk for suicide.

A 2009 study compared standard rating scales with clinical assessment (Bongiovi-Garcia et al., 2009). The authors make a case to use standardized assessments because clinicians fail to document suicidal ideation as consistently as a standardized test. In their study, the standardized scales used to measure psychopathology included the International Personality Disorders Examination, Beck Depression Inventory, SCID-II, Hamilton Depression Rating Scale (HDRS-17), and the Brief Psychiatric Rating Scale. The Columbia Suicide History Form (CSHF), and the Beck Scale for Suicide Ideation (BSSI) were used to assess suicidal ideation. The authors found that the agreement between clinical assessment and standardized tests for suicide attempts was 79.2% and for suicidal ideation, it was 66.5% agreement. The authors concluded that clients were more likely to report more information on standardized assessments than to a clinician during an interview.
Many of those who go on to complete suicide have had a consultation within six months of their death (Oravecz, 2008). The number of people that are said to have communicated intent prior to completing suicide is between 40 and 69% (Folse and Hahn, 2009; Nock and Banaji, 2007). There are also those that may come in and be cooperative, but still deny having thoughts of suicide (McGirr et al., 2007). The health care professional, be it a medical doctor or a mental health professional, may not ask pertinent questions to a particular type of client. A 2003 study by Fischer et al., found that physicians did not ask about or spend much time talking with their elderly patients about depression and symptoms of depression. The authors found that physicians were three times more likely to refer younger patients to mental health services than their older patients. Using only subjectivity to assess for suicide risk leaves gaps in information that can have fatal consequences.

2.4 Risk Factors

There are multiple items that can be considered risk factors for suicide. These can include relationships, social, cultural, and environmental factors (Leenaars, 2008, pg 14). Risk factors for suicide include, age, ethnicity, gender, socio-cultural factors, socio-economic factors, history of attempts, psychological distress, presence of substance abuse, presence of mental disorders, hopelessness, maladaptive coping skills, racial inequality impulsiveness, accessibility to firearms, previous attempts, hostility, aggressiveness, and the absence of protective factors (De Leo, 2000; Itsey et al., 2008, pg 60; Joe & Kaplan, 2002, Keilp et al. 2006; Sorenson & Vittes, 2008 ). (De Leo, 2002). Research is currently focused on identification and validation of suicide predictors (Bisconer & Gross, 2007). Risk factors vary across races, ethnic groups, and regions.
(Mullamy et al., 2008). The literature suggests that suicide risk be thought of as present or absent and that these factors are on a continuum (Rave et al. 2006). Known risk factors for suicide can be categorized into clusters, socio-demographic and clinical factors (Antypa et al., 2010; Bisconer & Gross, 2007; Jacobs et al., 1999, pg 4). Examples of socio-demographic factors include being male, over 60 years old, living alone and being unmarried, white or Native American, not having young children, financial problems.

Examples of clinical factors include major depression, manic depression, schizophrenia, substance abuse, and history of attempts (Jacobs et al., 1999, pg 4). Forster and Woo (2002) identified “fixed factors” for suicide intent as previous attempts, suicide intent at time of recent attempt, sex, ethnicity, age, marital status, economic situation, and sexual orientation (p. 81).

Risk factors need to be organized in a way that distinguishes between proximal risk factors and distal risk factors (Moscicki, pg 44, 1999). Proximal risk factors can be described as triggers to suicidal behaviors and may act as precipitants (Roy, 2003). Proximal factors can influence the timing of suicidal behavior (Hufford, 2001). In a 2011 article by Foster, examples of proximal risk factors include recent loss, work problems, economic problems, housing problems, somatic illness, and living alone. The author did not directly define ‘proximal’ in the article but did state that proximal factors can be acute or chronic. In a 2011 article by Im et al., specific proximal risk factors related to suicide were explored for suicide completers in Korea, where the rate of suicide was 24.8 per 100,000 and was the 5th leading cause of death in 2006. The authors found that medical illnesses and psychiatric problems were proximal factors for both genders but what constituted a proximal factor changed based on age. Factors related to suicide were
based on gender and age. For the younger population, lack of significant interpersonal relationships was more of a proximal factor. For those between 20 and 50 years of age, the presence of a psychological or psychiatric problem was a significant proximal risk factor. For those between 40 and 60 years old, finances were a significant proximal risk factor, and for those older than 60, the presence of medical issues was a significant proximal factor (Im et al., 2011).

Distal factors can be looked at as the potential for suicidal behaviors (Hufford, 2001). Distal risk factors are more chronic such as past childhood abuse, history of family problems, and personality factors. Distal factors create the threshold for which proximal factors are tolerated and can exacerbate risk when a proximal factor is present (Roy, 2003). Risk factors interact with several other external influences within a person’s life and can be repetitive, progressive, and unique to that individual and/or his or her culture (De Leo, 2002). Proximal factors may provide the momentum for suicide attempts, however, distal factors set the stage for the risk factor to be present (Klimes-Dougan, et al., 2008).

In addition to proximal and distal risk factors, several demographic categories have been identified to increase risk for suicide. There is a significant difference in gender and suicide completion. Caucasian men have the highest suicide rates of all ethnic groups. Caucasians show an increase after age 65 (Conwell & Heisel, 2006, pg 60). Men are four times more likely to die by suicide than women (Granello & Granello, 2007; McKeon, 2009; NIMH, 2008; Perhats & Valdez, 2008). Women, however, have more suicide attempts at a rate of about 3:1 with men (Perhats & Valdez, 2008). Age is another distinctive risk factor. Suicide is the 3rd leading cause of death for youth ages 10 to 24
years (Folse & Hahn, 2009; Mullany et al., 2008). Suicide rates are increasing in the elderly as this population continues to increase (Shah & Bhat, 2008). The annual suicide rate for the age group of 65 to 74 years is 11.3 per 100,000 making this the highest age group for suicide (Tadros & Salib, 2007).

Marital status and family dynamics affect suicide risk. Being single, divorced, widowed, separated, or living alone also increases risk for suicide (Kposowa, 2000; Sullivan & Bongar, 2008;). Those who have poor relationships with their families or are divorced have a higher risk of suicide when compared to married people and people well integrated into their family units (Denny et al., 2007).

2.5 Mental and Emotional Disorders and Suicide Risk

About 44 million adults have a diagnosable disorder in any given year (Granello and Granello, 2007). Clinical groups are at an increased risk of suicide (Johnson et al., 2010). The rate of suicide for the psychiatric population is about 55 to 66 per 100,000 compared to the 11 per 100,000 in the general population (Kleespies & Richmond, 2008). Risk of completed suicide was highest within 6 months of a patient’s release from psychiatric hospitalization (Skeem et al., 2006).

The primary diagnoses found in emergency departments with elevated suicidal risk and repeat admittances are schizophrenia, depression, major depression, anxiety, and substance abuse, bipolar, borderline (Allen & Currier, 2004; Chaput & Lebel, 2007; Klimes-Dougan, et al., 2008; Pasic et al., 2005; Trepal & Wester, 2007; Young, et al., 2005). As a result, these disorders are often assessed when determining suicide risk.
**Schizophrenia**

Schizophrenia is a disorder found to be highly associated with suicide attempts and completion (Barak et al., 2008). Schizophrenia has a prevalence rate of 2.8 million or 1.3% of the U.S. population (Granello & Granello, 2007, pg 113). A review of the literature shows that between 5 and 15% of people with schizophrenia complete suicide (Baldessarini et al., 2006; Simon, 2006). Risk factors for suicide with people diagnosed with schizophrenia include depression, hopelessness, past history of attempts, substance use, male gender, early stage of illness (Granello & Granello, 2007; Noveru & Luther, 2006; Simon, 2006; Tsuana et al., 1999). Risk factors are further exacerbated by social stigma, lack of support, low quality of care, nature of the symptoms, and impulsivity (Granello & Granello, 2007). The literature shows varying levels of risk for those diagnosed with schizophrenia with numbers between 20 to 80 times the risk of those in the general population (Granello & Granello, 2007; Scominen et al., 2002). In a 2006 article by Noveru & Luther, the authors looked to see if cognitive functioning and alcohol use was also a risk factor for suicide. The hypothesis is that a higher level of functioning increased risk due to patient knowing how serious the disorder is. The authors found that cognitive functioning does not discriminate between individuals with and without suicidal behavior. Higher education was also evaluated as a risk factor in Tsuang et al., 1999. The authors found that the clients were at the highest risk is post discharge from a hospital.

**Depression**

Major depressive disorder is one of three commonly identified Axis I disorders associated with a high risk of suicide (Cheung et al., 2009; Diaconu & Turecki, 2007;
Suicidal ideation and behavior are common symptoms of major depression (Antypa et al., 2010). Depression as a risk factor usually becomes more serious if there is another disorder such as anxiety and substance abuse that is present (Conrad et al., 2010; Diaconu & Turecki, 2007). Those with a greater severity of depression, greater hopelessness, and fewer reasons for living are at the highest risk for suicide completion (Lizardi et al., 2007). Depression coupled with, age, gender, external loss of control, and hopelessness, increases risk (Spann et al., 2006). 60% of the 30,000 people that commit suicide had major depressive disorder (Fawcett, 2006).

Because depression is one of the factors in high suicide risk, it is often one of the items measured in relation to the presence and level of suicide risk. Just having depression does not place someone at risk for suicide however questions regarding the impact of different subtypes of depression on suicide risk have risen. Exploration into a subtype of depression called anxious depression that supposedly placed people at greater risk for suicide was completed. In the 2011 article by Seo et al., ‘anxious depression’ is characterized by a greater severity of symptoms and functional impairment and poorer outcomes for treatment. Significant differences between anxious and non-anxious depression in terms of clinical diagnosis were found. People in the anxious group had more recurrent depression and more depressive episodes. This group was found to have younger age of onset and a longer duration of illness placing them at a higher risk for suicide. Limitations of this study were that patients with obvious anxiety disorder were excluded, participants were determined by clinicians, and it was in a university setting which may affect generalizability (Seo et al., 2011).
Bipolar Disorder

Bipolar disorder is identified as being the disorder with the highest risk for completing suicide out of all the psychiatric disorders, especially when depressive episodes are present (Hales et al., 2011; Klimes-Dougan, et al., 2008). A review of the literature shows that depressive episodes tend to be more prevalent in those with bipolar disorder and cause more impairments, especially if there is an early onset (Baldessarini et al., 2006, pg 282; Garno et al., 2005; Moreno et al., 2012). Dalton et al. (2003) write that between 25-60% of patients with Bipolar Disorder make at least one attempt. The literature shows that the range of those with Bipolar Disorder that complete suicide vary between 4% to 19% (Bisconer & Gross, 2007; Dalton et al., 2003).

Hales et al. (2011) compared the severity of depression in patients with Major Depression Disorder and Bipolar Disorder. They found that individuals with Bipolar Disorder have earlier onset of illness and a higher number of depressive episodes. The individuals with Bipolar I were more likely to report mental health treatment, psychiatric hospitalization, ER visits and/or prescription medications for use with depression. A few reasons for the exacerbated symptoms with those with Bipolar Disorder are given as impulsivity and suicidal imagery and verbal thoughts related to suicide. The authors compared those with unipolar depression with those with Bipolar Disorder on the basis of suicidal ideation. Those with Bipolar Disorder were found to have higher suicidality ratings based on scores on the Beck Suicide Scaler-Worst Ever version (BSSw). The bipolar group reported that flashforwards, described as repetitive suicide-related images, made them want to take action to complete suicide. The flashforwards were described as providing some sort of comfort to the patients.
Garno et al. (2005) looked at the relationship between Bipolar Disorder and Cluster B personality disorders in relation to suicide. The authors write that Bipolar disorder symptoms are difficult to tease apart from Cluster B personality disorders, especially Borderline Personality Disorder and that they can have similar onset such as traumatic experiences. The authors write that there are very few studies that discuss the co-morbidity of Bipolar Disorder and Borderline Personality Disorder, however between 1/3 to 1/2 of patients with Bipolar disorder manifest symptoms of both. Early onset of these disorders can lead to psychiatric comorbidity, faster cycling, and higher rates of suicide attempts, especially if there is a history of childhood sexual abuse. The authors hypothesized that patients with bipolar disorder and cluster B diagnoses have a more extensive history of childhood abuse and more complications of symptoms. Their study included 100 outpatient participants with a bipolar diagnosis. They found that 1/3 of these patients had Cluster B symptoms present and had a greater prevalence of lifetime substance use, suicide attempts, and emotional or physical abuse. Limitations to this study as stated by the authors included using retro data and the participants came from an academic setting.

*Borderline Personality Disorder*

Personality disorders in general are associated with lifetime rates of suicide ranging from 3-9% (Oquendo et al., 2006, pg 329). Borderline personality disorder (BPD) has between 2% and 3% prevalence rate in the general population and 50% prevalence rate in the clinical population respectively (Arntz, 2005; Gold, 2006). BPD is highly correlated with suicide risk. It is the only disorder where ‘suicidality’ is a criteria (Davis et al., 1999). Risk factors include gender, age, educational level, multiple
hospitalization, current severe depression, despair, hopelessness, hospitalizations, and recent discharges are risk factors (Davis et al., 1999). In the 2005 article by Arntz, the author references Marsha Linehan, the creator of Dialectical Behavioral Therapy (DBT), in which Linehan stated that BPD is caused by ‘affective dysregulation’. This means those with BPD are quickly triggered, their arousal is higher than normal, and they are slower to return to baseline (Arntz, 2005).

Comorbidity with other disorders can cause complications with positive outcomes in treatment (Markowitz et al, 2007). The authors wrote in their findings that the subjects diagnosed with Borderline Personality disorder BPD reported greater suicidal ideation, hopelessness, impulsiveness, hostility, and lifetime aggression (Keilp et al., 2006). Clinicians should pay attention to comorbidity especially mood disorders and substance use (Simon, 2006). Patients with personality disorders are 7x greater risk than the general population. Patients with BPD are often characterized by a number of factors associated with poor prognosis such as multiple psychiatric diagnoses, poor psychosocial adjustment, and difficulties in forming a strong therapeutic alliance. The better the therapeutic alliance, the better the treatment outcome (Wenzel et al., 2008).

Anxiety

Anxiety is considered an ‘acute’ risk factor for suicide (Fawcett, pg 258, 2006; Leenaars, 2008, pg 25; Simon, 2006). Panic disorder is the anxiety disorder most often found in relation to suicide (Cougle et al., 2009). Sometimes, anxiety and anxiety disorders are found to indicate a clear link with suicide (Leenaars, 2008, pg 26). Men with anxiety symptoms appear to be at the highest risk, possibly due to exhibiting greater depression and suicide becomes a viable option (Jacobs, pg 8). Seo et al. (2011)
completed a study to see the effects of anxiety on depression. The authors hypothesized that anxiety creates a separate subtype of depression which increases the severity of impairment and therefore increases risk. The authors found that people with this subtype, were found to have greater depressive episodes, younger age of onset, longer duration of illness, and higher scores on the Beck Depression Inventory and Hamilton-D (Seo et al., 2011).

Diaconu & Turecki (2007) completed a study where they explored suicide risk and the elderly. The authors found that depression and comorbid anxiety were more resistant to treatment with this population. Anxiety itself was not as significant being found in less than 30% of those studied. The authors did not find an association between panic disorder, which has a symptom of anxiety, and suicide attempts. They conclude that panic disorders are less likely to be associated with suicidal behaviors if there is not a comorbid depression diagnosis.

The variation in reports regarding if anxiety is a factor for suicide completion may come from differences in the collection of data due to varying methodologies (Diaconu & Turecki, 2007; Kahn et al., 2002). Anxiety may be a factor due to patients with anxiety disorder having higher suicide risk than the general population. The type of anxiety disorder was never distinguished. Suicide risk was high despite the type of anxiety (Kahn et al., 2002)

Comorbidity

Mental and emotional disorders are often co-morbid with other disorders that can increase the effects of suicide risks. For example, 90% of people who commit suicide have depression or other diagnosable disorders and/or substance abuse disorders (Perhats
and Valdez, 2008). Early onset of substance use can lead to other problem behaviors and psychiatric disorders in teens which can greatly increase their risk for suicide (Cho et al., 2007).

Hufford (2001) explored the relationship between alcohol dependence and suicidal behavior. In looking at how alcohol affects suicidal behaviors the point is argued that both proximal and distal factors are affected. Distal factors, which the author identifies as creating the potential for suicidal behaviors, are affected by creating or exacerbating negative life events such as personal loss, and/or negative environments. Proximal risk factors can affect the timing of suicidal behaviors with acute intoxication creating conditions in which suicidal behaviors can occur. The author writes that alcohol dependence can increase psychological distress, increases expectations of completing suicide, is dangerous because alcohol is related to increased violence and suicide is violence against the self and that intoxication can predict the use of more lethal means, and creates cognitive constriction leading the person to feel as if he or she has no other options.

2.6 At Risk Populations

Clinicians should be aware that certain populations of people are at risk for suicide strictly because of their group affiliation. This group affiliation is also affected by the static and acute risk factors for suicide. Care should be given to find out if a person belongs to or identifies with a certain group. Clinicians should acknowledge the unique attributes of the group, the environment in which the group resides, and how much the general risk factors for suicide affect the particular population. Special populations to
consider include those with severe mental and emotional disorders, jail and prison inmates, ethnic minorities, the elderly, and the youth.

2.6.1 Minority Populations

Members of minority populations may present with risk factors that are confounded by their minority status. One such way would be in the level of acculturation. Acculturation is the extent to which a member of a minority group keeps their own values, practices, and beliefs over that of the dominant culture (Walker, 2007). The author discusses that acculturation levels effect how much of an impact the common risk factors for suicide have on minority populations. As one culture assimilates in into another, certain parts of the original culture may not be used any longer. As these cultures assimilate, their members may come away from protective factors such as relationship ties and coping skills which can leave members of this culture exposed to external pressures.

The connection of racism and mental health was furthered explored in a 2002 study by Chakaraburty and McKenzie. The authors explored the reasoning behind high rates of depression between South Asian and Afro-Caribbean populations compared to the White British population in the UK. The rates of depression for these two groups were not seen in their country of origin and racism was one social factor that was frequently identified by service users according to the authors. The authors defined racism as “a form of discrimination that stems from the belief groups should be treated differently according to phenotypic differences”. Racism varies from direct attacks to perceived discrimination though the authors note that measurement is difficult due to discrimination, paranoia, and external locus of control. Microaggressions are defined in
the article as everyday minor incidents. However, if the perception is that society is discriminatory, the microaggressions weigh heavy on the person.

The authors reported factors related to racism and mental illness as being socioeconomic status, role of psychiatry in social control, validity of European illness models in ethnic minority groups, and the use of universalist approaches rather than relativist approaches to psychopathology. A universalist vs a relativist approach is important to focus on when it comes to mental health and how items are classified. Most of what is known about suicide is derived from the dominant culture (Leong & Leach, 2008). Reasons for this according to the authors include, the majority of completers are European American, labeling up until 40 years ago was “White” or “non-White” with no ethnic differences recorded, the majority of suicidologists are European-American and other cultures may not be considered, and there is little literature that assess cultural issues relevant to ethnic suicide.

The authors referenced a 1999 study by Gilvarry et al. that found that African and Afro-Caribbean patients with psychosis more likely to attribute several negative life events to racism even if their Caucasian counterparts experienced the same life event (Chakaraburty & McKenzie, 2002). To show that this was not just unique to the UK, the authors also write that in the U.S., interpersonal discrimination has been associated with increased rates of hypertension, depression and stress, poorer self-rated health, and more sick days. In conclusion, the authors write that institutional racism may be one reason for lack of research on effective responses to societal influence.

Clinicians assessing an individual of a minority culture would need to inquire about protective factors specific to that population as well as if any of the protective
factors are not in place. Also, the assessing clinician should look for compounding problems of a psycho-social nature, such as low socio-economic status and poor family cohesion, or substance abuse and a violent living environment. These compounded factors along with the general risk factors will give a more accurate assessment for suicidal risk.

2.6.2 African-Americans

African-American suicide risk is often looked at in the context of suicide risk as a whole although there are unique risk and protective factors identified for this population. Historically, the rates of suicide in the African-American community have been lower than that of the Caucasian population. Recently however, suicide in the African-American community is on the rise among African-American males, ages 15 to 19 years old (Granello & Granello, 2007). The rates of suicide doubled for African American adolescents between 1980 and 1995 (Joe et al., 2007). Joe & Niedermeier (2008) write that African American males ages 15 to 24 have high rates of self-destructive behaviors in regards to suicide and that the completion rate among this group is comparable to that of White Americans.

Risk factors for this population include the presence of a substance abuse or mental health problem, community and/or family violence, and socioeconomic status (Granello & Granello, 2007). Parental psychopathology is also a risk factor. If a parent has a mental/emotional disorder, then they may not be there emotionally for the adolescent which can cause further problems (Joe et al., 2007). Among African Americans, lower perceived family support was associated with significantly higher levels of depressive symptoms and suicidal ideation and there was a higher trend towards
substance abuse. Less family and non-family support led to more severe suicidal ideation and depressive symptoms for African Americans (Joe et al., 2007).

2.6.3 Native-Americans

For the Native American population, risk factors can include high unemployment rates, alcohol and substance use, family disruption, a disconnect from culture and family, and abuse (Granello & Granello, 2007). EchoHawk (1997) writes that suicides among Native American youth ages 15 to 24 is 3x higher than other ethnic groups. The writer explains that the clans that make up a tribe are interdependent and this is where socialization and moral development are taught. With the introduction of outside education, religion, and other influences, the tribes began to divide and the interdependence and connection of the Native American people began to dissolve creating the disruptions that can lead to distress and risky behaviors such as suicide.

Interventions for this population should be specific to the particular tribe and/or area of focus as the term “Native American” encompasses many. One example of a suicide risk assessment/intervention is the Zuni Life Skills Development /American Indian Life Skills Development screen. The Zuni Life Skills Development /American Indian Life Skills Development screen came about after the community and community leaders became concerned about a 7 year period between 1980 and 1987 where 13 Zuni adolescents completed suicide (Lafromboise & Lewis, 2008). The authors worked with the Zuni community and schools to find causes that have led to the development of risk factors and prevention of these risk factors for the Zuni adolescents. Cultural beliefs against suicide are a main reason that intervention must be specific (Lafromboise & Lewis, 2008). Suicidal ideation differs between tribes and is influenced by that tribe’s
social structure and ideas of individual and gender expectations. The authors found in their research that risk factors for Zuni adolescents include psychological disorders, previous suicidal ideation, substance use, hopelessness, stress, limited social support, not liking school, and having poor interpersonal communication skills.

Addressing suicide in a way that is specific to this population is important because of the cultural taboos surrounding suicide. If a person commits suicide, his or her soul will “remain in a state of distress” and will not go to heaven until the actual time of what would be a natural death. The Zuni believe that the person’s soul may cause harm to other family and friends. Also, a stigma is placed on the family of the person completing suicide and that person’s soul may not be called upon spiritually to help the family during religious practices (Lafromboise & Lewis, 2008).

The development and implementation of the Zuni Life Skills Development was enacted but not without problems in long term maintenance. The intervention was done in school at least 3 days a week. The students learned about their heritage and their tribe’s specific use of stress management and resiliency in times of social turmoil throughout history, and culturally specific responses to psychological disorders. Next, the adolescents were taught help-seeking behaviors and how to problem-solve more effectively. The program was to last 3 years according. However, after the first year, suicidal behaviors and rates dramatically fell and school system believed the problem was solved, and the program was discontinued.

With the deterioration of the Zuni Life Skills Development initiative, the authors decided to implement a screen that would be useful to all Native American tribes for suicide prevention. The American Indian Life Skills Development (AILS) was created.
This intervention’s curriculum allows for the incorporation of tribal and contemporary worldviews. The AILS contains universal Native American values and behaviors and was implemented in 1995. The focus is on Native American adolescents between the ages of 14 and 19 years old (SAMSHA). The focus is on preventing or eliminating risk factors similar to those found within the Zuni culture such as hopelessness, stress, poor communication, and poor social and family ties.

2.6.4 Elderly Population

The elderly are another unique group in which to evaluate suicide risk. The elderly population is increasing and so are their rates of suicide (Shah & Bhat, 2008). Those over 65 years old account for 18% of all suicide deaths in the U.S. (Fols & Hahn, 2009). The lethality of the suicide attempts is at its highest with older adults (Conwel & Heisel, 2006; Dombrovski et al., 2008; Granello & Granello, 2007). Rates are reported to be 11.3 per 100,000 for ages 65-74 (Tadrus & Salib, 2007). Intent to end one’s life is greater, and therefore more lethal means are chosen (Davis et al., 1999; Dombrovski et al., 2008; Erlangsen, et al., 2006; Folse & Hahn, 2008; Granello & Granello, 2007).

Older adults also give fewer warnings (Folse & Hahn, 2008). Reasons for this include living alone, and more lethal means chosen (Conwell & Heisel, 2006). This leaves less time for interventions and creates more of a distinction between the sexes and ages in suicide completions the older the person is. Risk factors such as age, race, and gender are most consistent with this population. Caucasian males over the age of 85 present with the highest risk (Conwell & Thompson, 2008; Folse & Hahn, 2009; Garand et al., 2006; Granello & Granello, 2007; Walsh, et al., 2008). Caucasian males age 85 and older have a suicide rate of 48 per 100,000 (NIMH, 2008).
Other risk factors for this population include physical ailments, being unmarried, experiencing bereavement, having a psychiatric disorder, and having a life threatening illness (Garand et al., 2006, Walsh et al., 2007, Wiktorsson et al., 2010). Suicide risk may increase due to physical problems because of fear of pain, fear of disfigurement, fear of loss of independence. This may occur more with men than women because feeling helplessness and passiveness is less acceptable with them (Tadros & Salib, 2007). The elderly population may be more difficult to assess for suicide because of confounding factors, such as physical health, mental health problems, and grief and loss issues may mask an obvious risk for suicide. Members of the elderly population are more likely to seek help from a primary care physician, may not report suicidal ideations, and are more likely to use lethal means. The primary complaint is depression and pain (Conwell & Thompson, 2008; Tadros & Salib, 2007). Bryan (2009) writes that 45% of individuals who die by suicide have made contact with a primary care physician within the month prior to death by suicide and the elderly are a part of this number. If the physician is not looking directly for suicidal risk factors with this population they might be missed.

Suicide risk assessment with the elderly population first and foremost should include special attention to demographic factors such as age, race, and sex. Attention should be given to recently accrued external risk factors such as a physical or mental diagnosis, recent loss, and comorbid disorders such as substance abuse. Psychological illness is a risk at any age. In the elderly psychological autopsies found 97% completions met criteria for psychiatric diagnoses (Erlangsen et al., 2006).

To address suicide risk with this population, SAMSHA lists Prospect as an evidence-based intervention. Prospect is designed to prevent suicide among older primary
care patients. The goal is to reduce suicidal thoughts and depression. The primary care physicians are taught to recognize symptoms of depression in older adults and be able to refer them to a mental health specialist is necessary. The patients will be monitored for 24 months at all phases. This practice has been implemented in 20 primary care practices. Compared with patients that received treatment as usual, those in the Prospect category achieved remission of symptoms sooner and were in remission for about 8 months longer.

2.6.5 Youth Population

With the youth population, the rate of suicide as a leading cause of death increases dramatically. For youth ages 10 to 14 years old, suicide is the third leading cause of death (Ash, 2007; Muehlenkamp et al., 2008; Mullany, 2008; Vajani, 2007). For youth 15 to 19 years old, suicide is the second leading cause of death (Granello & Granello, 2007). Vajani et al. (2007) the authors looked at fatal and non-fatal self-harm in children between 2001 and 2003. The authors write that suicidal behavior has been observed in children as young as six and that nonfatal self-harm injuries increase at age 15. Risk factors for youth include substance use, psychiatric disorders, physical illness, easy access to lethal means, previous attempts, contagion, family dynamics, perceived psychological pain, depression, hopelessness, and little family support (Ash, 2007; Joe et al., 2007; Muehlenkamp, 2008; Mullany, 2008).

Hallfors et al. (2001) writes that depression is a significant concern with the youth population. 28% of U.S. high school students reported severe depressive symptoms and that at least 9% had attempted suicide at least once. The authors found that younger students, those in 9th through 11th grade were more at risk for attempting suicide than those in the 12th grade. Although they did not offer a hypothesis for this finding.
Depression is also linked to early substance use in this population. Earlier onset of substance use increases the presence of other risk factors which in turn increases the likelihood of suicide risk (Cho et al., 2007). Risk factors also vary according to the population that the person belongs to or the setting that he or she is in. For example, if the aforementioned risk factors are present, they are also influenced by a person being a certain race, or gender, or being a member of a particular population can elevate risk.

2.6.6 Inmate Population

Inmate suicide ranges from 20-30 per 100,000 each year (Granello & Granello, 2007). The inmate population’s risk factors range from pre-existing mental disorders, alcohol and/or substance abuse, depression, and previous attempts. Granello and Granello (2007) list morality shock, chronic despair, and manipulation as unique risk factors for this population. Yeager and Roberts (2007) write that in 2000 The Death in Custody Reporting Act (2000) came into effect to structure documentation and analyze reasons behind the deaths of inmates.

The setting of the incarceration becomes a confounding risk factor for the inmate population. Jails are where inmates go when they are first incarcerated, so almost all inmates have been to jail. Jails hold inmates who are to be incarcerated for one year or less. Prison is where inmates go when they are to be incarcerated for longer than one year. Jail serves as a stop where inmates are either on their way to trial, sentencing, or prison. Almost half of jail suicides occur within the first week of incarceration, with the first 24 hours being the most crucial (Mumola, 2005). Usually the inmates give no indication of intent.
Mumola (2005) writes that the general demographic risk factors for suicide still apply to the inmate population. Both males and whites were at a higher risk than any other demographic for suicide completion. Age is still a substantial risk factor, with the oldest inmates, age 55 or older, and the youngest inmates, under age 18, having the highest suicide rates of incarcerated individuals. Violent offenders were found to be more likely to complete suicide than nonviolent inmates (Mumola, 2005; Granello & Granello, 2007). Importantly, the noise and chaos of a booking area in a jail is a difficult place to conduct a suicide assessment and be able to catch all of the risk factors (Hayes, 2001).

Correia (2000) addresses suicide risk with the inmate population and provides some guidelines for assessments. Risk factors specifically identified for the inmate population include, recent loss, severity of suicidal impulses, delusion of reference or persecution, an attempt self-harm immediately prior to the assessment, prior history of hospitalizations and/or suicide attempts, family history of suicides, substance use or intoxication, the length of the sentence, the inmate’s feelings about incarceration, level of impulse control, the inmate’s general medical/psychological condition, does an active suicide plan, existence of any social supports within or outside the institution, race/age, and finally the inmate’s current situation within the jail/prison. The author writes that a higher rate of suicide happens within the first 24 hours of an inmate going into isolation. Behavioral risks includes giving away possessions, talking as if they are not going to be there even if though they are not to be released soon, withdrawing, becoming intoxicated, being physically or sexually assaulted, being threatened by inmates, having previous suicide attempts, or talking about death.
Correia (2000) writes that the first line of defense in the correctional institution setting is to train the staff in recognizing signs of depression and suicidal risk and having them be comfortable making referrals to the mental health professional on staff for further assessment. In turn, the mental health staff needs to be able to rely on the corrections staff that has the day to day contact with the inmates, to make the determination of who needs a professional assessment. Limitations to suicide assessments in correctional facilities include feelings of intimidation for the mental health professional in having to complete the assessment, which can lead to reliance on objective rating scales. However, using what the author calls a “face-valid” scale such as the Beck Depression Inventory may not provide relevant information and may miss the needed subjective part of a suicide risk assessment. Clinicians must make a judgment call to determine if a person is malingering, will be labeled as suicidal, or is suicidal but does not want to be stopped. Instruments such as the Prison Suicide Risk Assessment Checklist: PSRAC provides a list of risk factors but no score. Clinicians can see what risk factors are endorsed and be able to ask further questions and incorporate their clinical judgment in their decision making.

2.7 Protective Factors

Overall, the issue with risk assessments is that many only look at risks. This is likely counterproductive when it comes to assessing suicide because it is known that both risk and protective factors need to be considered in order for the assessment to be more accurate and leave room for the subjectivity of the professional. Protective factors are not just the absence of risk factors, but how the presence of these factors can help to decrease the effects of a risk factor (Cha & Nock, 2009). In their 2009 article, Cha and Nock
identify reduced accessibility to firearms, religious affiliation, and the presence of social support as protective factors. More specifically, the authors write that the level of one’s emotional intelligence is a significant protective factor against depression and potentially suicide. Their rationale is that a person who has high emotional intelligence can change their perceptions of situations so they are not viewed negatively, can manage their emotions better, and are able to utilize effective coping skills. These things are significant in reducing depression and anxiety which are known risk factors for suicide.

Rutter et al. (2008) defines protective factors as those that defend against suicidal behavior and that very few instruments assess strengths, resources, and other protective factors. The authors reviewed 41 suicide risk assessments and of those reviewed, 95% were negative, deficit-related, or pathology related factors such as depression, substance abuse, and hopelessness. The authors write that assessing for protective factors can help to take into account strengths and resiliencies that can keep people alive. Protective factors include positive and constructive thinking and the ability to see crises as manageable (Paladino & Minton, 2008). Protective factors also include having positive social supports (Bertera, 2007).

An example of having positive social supports is found in the literature. A 2007 study of 200 adolescents looked at the rate of adolescent ideation and attempts to determine if pre-adolescent physical abuse increases risk. The authors found that although physical abuse increased risk, a stronger indicator was the level of attachment the child had to the parent or parents. Poor parental attachment led to internalizing behaviors and depression which in turn increased suicide risk. The stronger the
attachment to the parents, the less likely the adolescent was to internalize behaviors and report depressive feelings (Salzinger, 2007).

2.8 Conclusion

Moving forward, the likelihood of assessing the presence and strength of protective factors in addition to risk factors will increase. What we know is that protective factors go across all cultures and situations just as risk factors do. As new screens/assessments are developed, or as the mental health community moves towards utilizing a standard suicide risk assessment process, protective factors are indeed a priority and should be as well-known as suicide risk factors are. The importance of identifying the presence or absence of protective factors in the suicide risk assessment process will allow for more accurate detection of those at the greatest risk for suicide which will in turn increase the likelihood that interventions get better and save lives. As these assessment tools are studied we should look for how it affects the types of referrals patients receive, if the risk and protective factors impact clinicians’ decisions, and if false positives decreases.
Chapter 3: Methodology

3.1 Introduction

Assessment tools used to detect those at high risk for suicide vary in content, methods of scoring, and when they are implemented during treatment. Because of these variations, a problem is created concerning consistency in detecting, triaging, and caring for those in danger of completing suicide. In addition to varying assessment techniques, there are no consistent profiles of patients who have multiple visits to emergency departments. Predicting suicide is further complicated by its low base rate, denial of wanting to die, and lack of being able to specify key items from clinical scales that have predictive capabilities (Desseilles et al., 2012). Also, a small portion of patients have disproportionate number of visits (Chaput & Lebel, 2007). Because there is not an established standard of assessment most clinicians just assess for symptoms related to risk, suicidal ideation, plan, and means to carry out the plan (Simon, 2006). Clinicians based on their own impressions, may make random, incorrect, or at least variable recommendations for services.

Assessment tools include patient self-assessments, clinician guided assessments, and screens or scales that focus on presence and severity of symptoms associated with high suicide risk. Examples of these would be Beck Depression Inventory (BDI-II), Beck Hopelessness Scale (BHS), Beck Scale for Suicide Ideation (BSS), anxiety scales, SAD
PERSONS, IS PATH WARM, etc. These screens are completed in the context of an overall evaluation of the patient which includes demographics, social stressors, physical issues, and biological factors. Cotton et al. (1995) writes that the scales used to measure risk factors are reliable and valid but they seldom overlap and may not be comprehensive meaning they may not include past, present, and future suicidal ideas, plans, and attempts. The idea is that the more consistent the evaluations and screenings, the more likely it is that a more consistent profile can be created of those at the highest risk of suicide attempts and completions.

3.2 Purpose of the Study

The purpose of this study is to evaluate the effectiveness of the Suicide Risk Assessment Matrix- Adult (S-RAM) in detecting those at high risk for suicide. The S-RAM is different from other risk assessment tools because it incorporates Static Risk factors, Dynamic Risk Factors and Protective Factors. The literature shows that the addition of protective factors can create a more complete assessment tool because the presence of protective factors may decrease the impact and/or severity of risk factors. An assessment tool that provides comprehensive information could help create a client profile of those at high risk for suicide completion. Appropriate triage of patients will help emergency department workers, clinicians, doctors, etc. to determine where on the continuum of treatment to place the patients to provide the best, cost effective level of care as quickly as possible. Referrals are geared toward severity of need and therefore precious resources like psychiatric beds can be reserved for those at most risk. One of the long term benefits of better detection and more accurate referrals includes keeping costs
down as money previously set aside for inpatient services is being diverted to more cost effective community based services (Moran, 2004; Young et al. 2005).

3.3 Development the Suicide Risk Assessment Matrix-Adult (S-RAM)

Netcare Access, a psychiatric emergency facility in Columbus, Ohio, works with patients in varying stages of distress to include being actively suicidal. The development of the Suicide Risk Assessment Matrix: Adult (S-RAM) was the idea of Dr. Terry Kukor and the staff at Netcare Access as a tool to rate factors of suicide risk, incorporate protective factors, and to create a more accurate client profile for those at high risk for suicide and triage appropriately. The S-RAM is a 5 subscale, clinician rated, questionnaire. The subscales are labeled as follows: Static Risk Factors, Dynamic Risk Factors, Protective Factors, Clinician Assessment of Reliability, and Risk Formulation. The clinician applies a rating based on the information received during their assessment of the client. Each subscale has its own rating scale and the clinicians are trained to consider the presence of key factors when completing the S-RAM and evaluating suicide risk level.

Of interest in this study, are the Static Risk Factor subscale, Dynamic Risk Factor subscale, Protective Factor, subscale, and Risk Formulation subscale. The Static Risk Factor subscale, rates the variables based on “present”, “absent”, or “did not evaluate”. The other subscales, Dynamic, Protective, and Risk Formulation use a “low”, “moderate”, or “high” rating for each of the variables. The Dynamic, Protective, and Risk Formulation includes descriptors to determine which factors are low, moderate, or high. The Risk Formulation subscale includes ratings based on the overall ratings from the Static, Dynamic, and Protective Factors as well as Key Mental Status Factors and
Suicidality. The clinician then rates the Overall Suicide Risk Level (OSRL) subscale. It is this rating that helps determine risk level and triage of patient.

3.4 Structured Assessment of Violence Risk (SAVRY)

The S-RAM was modeled after the Structured Assessment of Violence Risk in Youth (SAVRY). The SAVRY was designed to predict violent recidivism in youth (Penney et al, 2010). The SAVRY is different from other risk assessment tools because it incorporates preventative factors in addition to risk factors (Penney et al, 2010). In the SAVRY, greater emphasis is on resiliency (Welsh et al., 2008). The SAVRY has 30 questions and includes Historical data, dynamic factors, and demographics. Studies show that SAVRY’s total score is predictive of self-reported violent and non-violent reoffending (Welsh et al. 2008). Of the domains, the Historical domain predicted self-report and official recidivism.

Penney et al (2010) describes the SAVRY and its uses. The SAVRY contains 24 static and dynamic risk factors and 6 protective factors. The risk and dynamic factors are rated on a “Low”, “Moderate”, and “High” level. Protective factors are rated as “present” or “absent”. In the study discussed in the article 144 adolescents between the ages of 12 and 18 were administered the SAVRY to look at gender differences in risk factors for violence. The authors used logistic regression analysis and the Odds Ratio (OR) that showed the SAVRY was a good predictor tool for self-report of violent and non-violent offenses, especially in males. The diagnostic accuracy of the total SAVRY score was found to be at a “low to moderate” level of predictive accuracy. The authors conclude their study by suggesting that more specific risk factors be used rather than general, and more studies regarding predictive accuracy be completed.
The predictive power of the SAVRY is also explored in a 2011 article by Vincent et. al regarding risk assessments in juvenile justice system, the authors write that an assessment tool is needed that not only identifies risk but, guides interventions. Static Risk factors are defined in the article as “events and characteristics” usually associated with negative outcomes and usually does not change. Dynamic risk factors are defined as individual and/or circumstantial. Dynamic factors can change and usually when there is a change in these factors risk for violence can decrease. The authors suggest using Dynamic factors as a way to measure progress. The study showed that the SAVRY had good predictive accuracy for recidivism for the total score in a 3 year follow up. In looking at the protective factors, the authors concluded that the protective factors were found to reduce the likelihood of re-offending.

3.5 Research Questions

Question 1: Do persons identified as either at low or high risk on the Overall Suicide Risk Level differ in their mean scores on the (a) Static Risk Factors, (b) Dynamic Risk Factors, and the (c) Protective Factors?

Question 2: What is the relationship between the variables in the ‘Static Risk Factors’ subscale of the S-RAM and Overall Suicide Risk Level?

Question 3: What is the relationship between the variables in the ‘Dynamic Risk Factors’ subscale of the S-RAM and Overall Suicide Risk Level?

Question 4: What is the relationship between the variables in the ‘Protective Factors’ subscale of the S-RAM and Overall Suicide Risk Level?

Question 5: What is the relationship between the (a) Static Risk Factors, (b) Dynamic Risk Factors, and the (c) Protective Factors and the Overall Suicide Risk Level?
3.6 Research Methodology

This study will be an ex-post facto, quasi-experimental design because the information was collected between October 2008 and April 2010, and it is in a real world setting. Ex-post facto would concern the fact that the information has already been gathered and needs to be analyzed. This is also considered to be a quasi-experimental design because it is a design that takes into consideration that due to the experiment being in a natural setting, a true control group and random assignment may not be obtainable as outlined in Campbell and Stanley (1963). In other words, whomever comes in for psychiatric emergency services, their presenting problem and demographics such as race, gender, and age cannot be controlled. The setting is a psychiatric emergency department and all patients are to receive a suicide risk assessment. It would be unethical to refuse a type of treatment to patients in order to obtain a control group as with a true experimental study in which random assignment and a control group can be obtained. Campbell and Stanley (1963) write that it is important for the experimenter to be aware of the variables that cannot be controlled when working with a study of this design.

The sample size of N=22,300 is big enough that it can be assumed that the sensitivity of measure will be enough to avoid any type II errors. Increasing the sensitivity of the measure, usually by having a large sample size, can help maximize the power (Murphy et al., 2008, p. 146).

3.7 Validity

The clinicians at Netcare were trained in how to use the S-RAM and incorporate it into the assessment process. The clinicians will not be told that the outcomes and referrals are an area of focus. This will reduce the likelihood of threats to external validity.
through the “interaction effects of selection biases and the experimental variable” (Campbell & Stanley, 1963). In other words, if the clinicians know that the type of referrals are being analyzed then there is a chance that they may alter their answers or become biased in how they perform the assessment. This bias in the study would harm the external validity or the chance to say that the dependent variable of ‘High’ OSRL and subsequent referrals was a direct result of the measurements on the S-RAM.

3.7.1 Internal Validity

Since random sampling is impossible in this study, a threat to internal validity is created (Campbell & Stanley, 1963). In a true experiment, there would be a randomly sampled experimental group and a randomly sampled control group. Internal validity is important because it will help determine if the intervention had an effect on what is to be studied. In this ex post facto design, the threat to internal validity is not being able to have a control group because of the ‘real world’ setting in which the group was pulled.

For this study, further threats to internal validity could include instrumentation and statistical regression. Campbell and Stanley 1963 describe instrumentation as changes in the calibration of the measuring of the instrument or changes in the observers or scorers which could change the measurements. Since Netcare is a 24 hour facility that staffs multiple clinicians, instrumentation would be a concern because the scoring is based in part on subjective responses.

The authors also describe statistical regression where groups have been selected because of extreme scores. In the case of this study, it could be where clients are placed in a category of “low”, “moderate”, or “high” because of the subjectivity of the clinician on a specific question that the clinician felt was important.
3.7.2 External Validity

External validity is important because it refers to the likelihood of the causality found during the study being able to apply to the population that the group represents (Somekh and Lewin, 2005). In the case of this study, there would be high external validity because this population was not manipulated in any way. Further, the study is done in a real world setting and would have use in other psychiatric crisis centers.

3.7.3 Sample Size

The sample size for this study is 22,300 cases. Schmitt (2011) writes that the guidelines for determining sample size vary and that determining sample size is dependent on the parameters set by the researcher. Beavers et al. (2013) writes that larger sample sizes help to decrease sampling error and suggest a sample size of at least 150 cases. Usually the desired power and reducing sampling error dictates sample size. With the number of cases for this study, it is assumed that sampling errors will be minimized and that the sample size is enough to gain adequate information about the population.

3.8 Instrumentation

The Suicide Risk Assessment Matrix (S-RAM) is a tool developed by Netcare, designed to incorporate demographic and risk factors related to suicide as well as protective factors that may lessen the severity of risk factors. The clinician rates the level of importance for each Static, Risk, Protective, and Risk Formulation factor. Information received from the client and information received from third party sources is measured as reliable or unreliable by the clinician. The clinician then takes this information and individually assesses the level of each of the categories within the Risk Formulation
Subscale. These ratings are then used to determine the Overall Suicide Risk Level (OSRL).

3.9 Variables

The variables within the S-RAM are divided into separate subscales. These subscales include Static Risk Factor, Dynamic Risk Factor, Protective Factor, and Risk Formulation. The Static Risk Factor subscale is the only subscale to rate using “present”, “absent” or “did not evaluate”. The other subscales include “low”, “moderate”, or “high” as options to rate the variables.

3.9.1 Static Risk Factors

The Static Risk Factor subscale contains 14 variables that are a combination of demographic and historical variables. These variables are evaluated in the S-RAM based on levels of “present”, “absent”, or “did not evaluate”. A table with an explanation of terms is shown below.

<table>
<thead>
<tr>
<th>Static Risk Factors</th>
<th>Explanation of Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>The S-RAM describes that males are more likely to complete and females are more likely to attempt.</td>
</tr>
<tr>
<td>Age</td>
<td>The S-RAM states that those at the highest risk are between the ages of 15 to 25 and 65 years and older.</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Caucasians, Native Americans, and Alaska Natives are described as being at highest risk for suicide.</td>
</tr>
<tr>
<td>Prior Suicide Attempt</td>
<td>Those at the highest risk have likely had at least one prior suicide attempt.</td>
</tr>
</tbody>
</table>

Continued
### Table 3.1 continued

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Near-Lethal Suicide Attempt</td>
<td>A history of a near lethal suicide attempt can indicate that a more lethal attempt will be used in the future.</td>
</tr>
<tr>
<td>Significant Mental Disorder</td>
<td>The S-RAM lists depression, bipolar, schizophrenia, anxiety d/o, and antisocial or borderline personality disorder. These are all highly related to increased risk for suicide.</td>
</tr>
<tr>
<td>History of Substance Abuse</td>
<td>The presence of substance use can increase the risk of suicide attempts, especially if there are other factors present such as a significant mental disorder and/or prior attempts.</td>
</tr>
<tr>
<td>Chronic and/or Severe Health Problem</td>
<td>The S-RAM lists having chronic pain and/or a life threatening illness as placing someone at risk for suicide.</td>
</tr>
<tr>
<td>Family History of Suicidal Behavior</td>
<td>Having a family history of suicidal behavior may place someone at risk for suicide.</td>
</tr>
<tr>
<td>History of Physical Abuse as a Victim</td>
<td>Being a victim of physical abuse may increase risk for suicide.</td>
</tr>
<tr>
<td>History of Sexual Abuse as a Victim</td>
<td>Being a victim of sexual abuse may increase risk for suicide.</td>
</tr>
<tr>
<td>History of Bullying or Being Bullied</td>
<td>Having a history of being bullied and/or bullying may increase risk for suicide.</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td>The S-RAM has the descriptor that GLBT have increase in risk.</td>
</tr>
</tbody>
</table>

1. **Male**

   This variable has a descriptor that males are more likely to complete and females are more likely to attempt. Marking “present” would mean the client is male. Marking “absent” would mean the client is female.

2. **Age**

   This variable has a descriptor that between 15 and 25 years of age and then age 65 or older are at the highest risk. Marking “present” here would indicate that the client falls
into one of the two age ranges indicated as high risk. Marking ‘absent’ would indicate that the client does not fall into either one of these age ranges.

3. Race/Ethnicity

This variable has the descriptor that Caucasian, Native American, and Alaska Native have the highest risk. Marking “present” here would indicate that the client falls into one of the three race/ethnicities specifically associated with being high risk. Marking “absent” in this subscale would indicate that the client does not fall into one of these three categories and thus risk level would be lower. Marking “did not evaluate” will indicate that the client either did not or was not able to identify his or her race/ethnicity or the race/ethnicity could not be determined.

4. Prior Suicide Attempt

This variable has the descriptor that multiple attempters and any other significant risk factor should be given at least a moderate risk. It does not define what “any other significant risk” means. Marking “present” in this subscale would indicate that the client has multiple attempts and/or has other significant risk factors. Marking “absent” would indicate that the client does not have multiple attempts nor have other significant risks. Marking “did not evaluate” would indicate that information regarding prior suicide attempts is not available for assessment.

5. History of Near-lethal Suicide Attempt

Marking “present” in this subscale would indicate that there is a history of near-lethal suicide attempt. Marking “absent” in this subscale would indicate that there is not a history of near-lethal suicide attempts. Marking “did not evaluate” would indicate that this information was unable to be evaluated or was not available.
6. History of Violence

Marking “present” for this variable would indicate that there is a history of violence. Marking “absent” will indicate that there is not a history of violence. Marking “did not evaluate” will indicate that this question was not answered.

7. Significant Mental Disorder

This variable specifically lists depression, bipolar, schizophrenia, anxiety disorder, antisocial, or borderline personality disorder. It does not say why these were chosen or how to rate the presence or absence of these disorders.

8. History of Substance Abuse

Marking “present” for this variable will indicate that there is a history of substance abuse. Marking “absent” will indicate that there is not a history of substance abuse. Marking “did not evaluate” will indicate that this question was not answered.

9. Chronic and/or Severe Health Problem

This variable specifically lists chronic pain and life threatening illness. It does not give descriptors to indicate how to rate the presence or absence of these items.

10. Family History of Suicidal Behavior

This variable specifically states attempts or completions. It does not give descriptors to indicate how to rate the presence or absence of these items.

11. History of Physical Abuse As a Victim:

This variable is only rated as “present”, “absent”, or “did not evaluate”.

12. History of Sexual Abuse As a Victim
This variable is only rated as “present”, “absent”, or “did not evaluate”

13. History of Bullying or Being Bullied
   This variable is only rated as “present”, “absent”, or “did not evaluate”

14. Sexual Orientation
   This variable specifically states that GLBT have increase in risk. It does not have descriptors to indicate how to rate “present”, “absent”, or “did not evaluate”.

3.8.2 Dynamic Risk Factors
   The Dynamic Risk Factor subscale has 26 variables. Some of the variables have the option of “N/A” but does not explain why this would be an option in this subscale. All variables in this subscale have the option of a “Low”, “Moderate”, or “High” rating. Each variable has descriptors that the assessing clinician will check to determine the level of risk.
### Table 3.2- Explanation of Terms- Dynamic Risk Factors

<table>
<thead>
<tr>
<th>Dynamic Risk Factors</th>
<th>Explanation of Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Suicide Ideation</td>
<td>This is rated on how easy ideations are to dismiss</td>
</tr>
<tr>
<td>Current Suicide Plan</td>
<td>Rated on a continuum from no immediate plan to imminent plan</td>
</tr>
<tr>
<td>Current Suicidal Intent</td>
<td>Rated from a goal other than death to having a goal of death</td>
</tr>
<tr>
<td>Means/Method</td>
<td>Rated on a continuum from non-lethal to lethal</td>
</tr>
<tr>
<td>Resolved Plan</td>
<td>Rated on a continuum of no plan to preparation for death</td>
</tr>
<tr>
<td>Mental Disorder</td>
<td>Defined by if client is medication compliant</td>
</tr>
<tr>
<td>AOD</td>
<td>Rated on a scale of use, abuse, and dependency</td>
</tr>
<tr>
<td>Recency of Prior Attempts</td>
<td>Attempt(s) within the last 30 days</td>
</tr>
<tr>
<td>Lethality of Prior Attempts</td>
<td>Rated from no attempts to at least one attempt that was nearly lethal</td>
</tr>
<tr>
<td>Psychosis</td>
<td>Rated from not present to present and acted on</td>
</tr>
<tr>
<td>Paranoia or Suspiciousness</td>
<td>Rated by how much of an impact the paranoia or suspiciousness has.</td>
</tr>
<tr>
<td>Poor Interpersonal Problem-Solving Ability</td>
<td>Rated based on if solutions can be constructed</td>
</tr>
<tr>
<td>Lack of or Missing Positive Social Support</td>
<td>Rated on a continuum from feeling loved, to having conflict</td>
</tr>
<tr>
<td>Depression</td>
<td>Current symptoms of depression reported</td>
</tr>
<tr>
<td>Agitation</td>
<td>Symptoms rated from not present to severe</td>
</tr>
<tr>
<td>Obsessions</td>
<td>Rated from low to high intensity</td>
</tr>
<tr>
<td>Negative Views of Self-Competence</td>
<td>Rated from competent to not competent</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Current Stressors Especially Interpersonal/Financial Losses or Loss that Threaten Humiliation</th>
<th>Rated from low to high intensity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contagion</td>
<td>Rated on awareness of or exposure to news of someone completing</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>Rates if consequences are considered</td>
</tr>
<tr>
<td>Anxiety/Panic; Feeling Overwhelmed</td>
<td>Rating from mild, moderate, to panic</td>
</tr>
<tr>
<td>Hopelessness</td>
<td>Rates if the client is future oriented.</td>
</tr>
<tr>
<td>Worthlessness</td>
<td>Rating from easy to dismiss to impossible to dismiss</td>
</tr>
<tr>
<td>Insomnia</td>
<td>Rating from occasional to chronic</td>
</tr>
<tr>
<td>Blames Self Unnecessarily for Negative Events</td>
<td>Rated from easy to impossible to dismiss</td>
</tr>
<tr>
<td>Factors Unique to the Person Based on Their History.</td>
<td>Open item for clinician to fill in</td>
</tr>
</tbody>
</table>

1. Current Suicide Ideation

   This variable has N/A as an option. Marking “low” for this variable indicates “easy to dismiss” per the descriptor. Marking “moderate” for this variable indicates “difficult to dismiss”. Marking “high” for this variable indicates “impossible to dismiss”.

2. Current Suicidal Plan

   This variable has N/A as an option. Marking “low” for this variable indicates no immediate plan is present. Marking “moderate” for this variable indicates non-specific plan. Marking “high” for this variable indicates imminent and specific plan.

3. Current Suicidal Intent
This variable has N/A as an option. Marking “low” for this variable indicates goal other than death. Marking “moderate” for this variable indicates ambivalent about death as goal. Marking “high” for this variable indicates goal of death.

4. Means/Method

This variable has N/A as an option. It has three levels to score in each rating subscale. “Low” has the options of not available, non-lethal, non-harmful, and high likelihood of rescue. “Moderate” has the options of restrictive or limited access, harmful, or moderate likelihood of rescue. “High” has the options of ready or unrestricted access, lethal, or low likelihood of rescue.

5. Resolved Plan

Specifically states that there is a specific plan with courage to try it or preparatory behavior such as giving away possessions. Marking “low” on this variable indicates that the client has no plan of steps to be taken to prepare for death. Marking “moderate” indicates that there is a plan of preparedness but has taken no actions. Marking “high” on this variable indicates the client has begun instituting plan in preparation for death.

6. Mental Disorder

This variable has N/A as an option. Marking “low” indicates medication compliant and/or symptoms controlled. “Moderate” indicates inconsistent with medication and/or moderate symptoms. “High” indicates medication non-compliant and/or symptoms interfere with functioning.

7. AOD

This variable has N/A as an option. Marking “low” indicates use, marking “moderate” indicates abuse, and marking “high” indicates dependency.
8. Recency of Prior Attempts

This variable has N/A as an option. It does not allow the option for “low” or “moderate”. Marking “high” indicates within the past 30 days.

9. Lethality of Prior Attempt(s)

Marking “low” indicates no prior attempt, “moderate” indicates there was one prior attempt that was not nearly lethal, “high” indicates client has had at least one prior attempt that was nearly lethal.

10. Psychosis

Has the descriptor of command hallucination, persecutory delusions. Marking “low” indicates not present, “moderate” indicates present but not acted upon, and “high” indicates has not previously acted upon hallucinations or delusions.

11. Paranoia or Suspiciousness

This variable has N/A as an option. Marking “low” indicates no impact on willingness to seek or accept help. “Moderate” indicates mild or occasional impact on willingness to accept help. “High” indicates paranoid and consistently refusing help.

12. Poor Interpersonal Problem-solving Ability

Marking “low” indicates has functional ability to construct solutions to interpersonal problems. “Moderate” indicates has some ability to define solutions to interpersonal problems/conflicts. “High” indicates has little/no ability to solve interpersonal problems.

13. Lack Of or Missing Positive Social Support

Marking “low” indicates feels cared for by family, significant others, peers, friends. Marking “moderate” indicates minimal or fragile support, moderate conflict with
family, significant others, peers, friends. Marking “high” indicates intense family conflict with family, significant others, peers, friends, complete social isolation.

14. Depression

This variable has N/A as an option. Marking “low” indicates mild, “moderate” indicates moderate, and “high” indicates severe.

15. Agitation

Marking “low” indicates not present, “moderate” indicates mild, and “high” indicates moderate to severe.

16. Obsessions

Marking “low” indicates not present, “moderate” indicates preoccupied but manageable, “high” indicates need to die to rid self of obsessions.

17. Negative Views of Self-competence

The descriptor indicates socially, occupationally, academically, etc. Marking “low” indicates sees self as a competent valued person. “Moderate” indicates doubts about some areas of functioning, “high” believes self to be incompetent.


Marking “low” indicates none or few with low intensity. Marking “moderate” indicates “some with moderate intensity”. Marking “high” indicates “many or any with high intensity”.

19. Contagion

Described as “ripple effect”. Marking “low” indicates ‘does not have awareness of anyone who has completed suicide recently”. Marking “moderate” indicates “past
exposure to news of someone who completed suicide”. Marking “high” indicates
“recently exposed to news of someone who completed suicide”.

20. Impulsivity

This variable has a description that this can be episodic/situational or
characterlogical. Marking “low” indicates usually considers consequences before acting.
Marking “moderate” indicates seldom considers consequences before acting. Marking
“high” indicates never considers consequences before acting.

21. Anxiety/Panic; Feeling Overwhelmed

This variable has N/A as an option. Marking “low” indicates mild, “moderate”
indicates moderate, and “high” indicates panic and overwhelmed.

22. Hopelessness

This variable has N/A as an option. Marking “low” indicates future oriented.
Marking “moderate” indicates occasional and moderate. Marking “high” indicates
frequent and intense.

23. Worthlessness

This variable has N/A as an option. Marking “low” indicates easy to dismiss.
Marking “moderate” indicates difficult to dismiss. Marking “high” indicates impossible
to dismiss.

24. Insomnia

This variable has N/A as an option. Marking “low” indicates occasional, marking
“moderate” indicates intermittent, and “high” indicates chronic.

25. Blames Self Unnecessarily For Negative Events
This variable has N/A as an option. “Low” indicates infrequent and easy to dismiss. “Moderate” indicates occasional and difficult to dismiss, and “high” indicates constant and impossible to dismiss.

26. Factors Unique To the Person Based On Their History

This variable has N/A as an option. Low, moderate, and high ratings do not have descriptors.

3.8.3 Protective Factors

The Protective Risk Factor subscale contains 11 protective factors. Two of the protective factors has “N/A” as an option. The assessing clinician will rate these as “Low”, “Moderate”, or “High. Each of the ratings has descriptors.

<table>
<thead>
<tr>
<th>Protective Factors</th>
<th>Explanation of Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Means</td>
<td>Rated from no access to unrestricted access to means to suicide</td>
</tr>
<tr>
<td>Will to Live</td>
<td>Rated from desire to feel better to feelings of hopelessness and meaningless</td>
</tr>
<tr>
<td>Social/Family Supports</td>
<td>Social and/or family supports are present and used</td>
</tr>
<tr>
<td>Therapeutic/Treatment Relationship</td>
<td>Rated from engaged in a therapeutic/treatment relationship to disengaged</td>
</tr>
<tr>
<td>Cultural or Reference Group Values/Beliefs</td>
<td>Rated regarding how strongly the cultural views are against suicide</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>Optimistic outlook is seen positively.</td>
</tr>
<tr>
<td>Religiousness</td>
<td>Rated on a continuum from improving functioning and low preoccupation to hindering functioning and causing distress</td>
</tr>
<tr>
<td>Coping Skills</td>
<td>Rated from healthy skills and sense of mastery to dysfunctional</td>
</tr>
<tr>
<td>Frustration Tolerance</td>
<td>Can mostly tolerate frustrations constructively</td>
</tr>
<tr>
<td>Felt responsibility to children and/or beloved pets</td>
<td>Rated from strong to weak sense of responsibility</td>
</tr>
<tr>
<td>Reality Testing Ability</td>
<td>Rated from no psychosis present, appropriately oriented to impaired</td>
</tr>
</tbody>
</table>
1. Access to Means

Marking “high” on this variable indicates no access to means. Marking “moderate” in this area indicates restrictive or limited access. Marking “low” in this area indicates read or unrestricted access.

2. Will to Live

Marking “high” on this variable indicates “desire to feel better and see situation get better”, has future plans; thinks positively about the future”. Marking “moderate” indicates “vague future plans”. Marking “low” on this variable indicates “feels hopeless; sees future as meaningless”.

3. Social/Family Supports

Marking “high” on this variable indicates support available and utilized. Marking “moderate” indicates support available but not utilized. Marking “low” indicates no support.

4. Therapeutic/Treatment Relationship

This variable has N/A as an option. Marking “high on this variable indicates “relationship strong/engaged”. Marking “moderate” indicates present but not well engaged. Marking “low” on this variable indicates no support.

5. Cultural or Reference Group Values/ Beliefs

6. Life Satisfaction

Marking “high” on this variable indicates “optimistic outlook; resiliency”. Marking “moderate” indicates “outlook varies between positive and negative”. Marking “low” indicates feeling hopeless about course of life.

7. Religiousness

Marking “high” on this variable indicates “religious beliefs associated with no distress, low preoccupation, no hallucinations, and appears to improve functioning, and feelings of well-being”. Marking “moderate” on this variable indicates neutral. Marking “low” on this variable indicates “religious beliefs associated with distress, preoccupation, hallucinations, or deterioration in functioning”.

8. Coping Skills

Marking “high” on this variable indicates has several healthy skills; has a sense of mastery. Marking “moderate” on this variable indicates few or poorly developed. Marking “low” on this variable indicates coping is unhealthy dysfunctional or destructive.

9. Frustration tolerance

Marking “high” in this area indicates consistently manages reaction to frustration in a constructive way. Marking “moderate” indicates inconsistently manages reaction to frustration in a constructive way. Marking “low” indicates seldom or never manages reaction to frustration in a constructive way.
10. Felt Responsibility To Children and/or Beloved Pets:

Marking “high” on this variable indicates a strong responsibility is felt. Marking “moderate” on this variable indicates there are mixed feelings. Marking “low” on this variable indicates weak or no responsibility is present.

11. Reality Testing Ability

Marking “high” on this variable indicates that reality testing is intact. Marking “moderate” on this variable indicates that the client responds to external prompting.

3.8.4 Risk Formulation

The Risk Formulation subscale is where the assessing clinician rates the level of each of the categories Static, Dynamic, Protective, Key Mental Status, and Suicidality. Key Mental Status factors have the descriptors of Depression, Agitation, Impulsivity, and Hopelessness. Suicidality has the descriptors of Intent, Strength of Impulse, Ideation, History, Resolved Plans and Preparation. The Overall Suicide Risk Level is rated as “low”, “moderate”, or “high”. There are not any descriptors to help distinguish between the levels in this subscale. The idea is that the clinicians will use the information and ratings from the previous subscales to determine if they score a “low”, “moderate”, or “high” rating overall to be factored into the OSRL.

3.9 Independent Variables

The Independent Variables (IV) for this study are the variables utilized in each of the subscales in the S-RAM (Static, Dynamic, Protective, and Clinician Assessment of Reliability). Because of the number of independent variables present, each subscale will be analyzed independently and then looked at collectively.
3.10 Dependent Variable

The dependent variable (DV) for this study will be the Overall Suicide Risk Level (OSRL) in the Risk Formulation subscale. For this study, the Overall Suicide Risk Level is measured based on the ratings of the previous subscales, Static Risk, Dynamic Risk, Protective Factors, Key Mental Status Factors, and Suicidality. The Key Mental Status Factors and Suicidality, and 3rd Party Information will be rated based on the subjectivity and expertise of the clinician to know that certain risk factors and information will place a client at high risk even if he or she scores low in other areas of the particular subscale.

3.11 Procedure

Netcare Inc. implemented the Suicide Risk Assessment Matrix from October 2008 until April 2010. They administered this assessment to all adult clients coming into Netcare for services for a total of N= 22,300. This number includes clients with multiple episodes. There are several races and age ranges represented. There are male and female clients represented. All identifying information will be removed by the staff at Netcare prior to being given to the researcher.

Demographic and referral information will be organized in the statistical package software, SPSS. Information from the S-RAM was recorded by client number and date. Demographic information is also recorded by client number. Referral information is recorded by client number. This information will be organized within SPSS by client ID number.

3.12 Data Analysis

Because this is a real world setting it should be noted that there are specific risk factors that if they are marked as “present” or “high” would automatically place the client
at eminent risk and he or she should be referred for emergency care. However, the current structure of the S-RAM does not make reference to this. The factors that should be considered to place someone at eminent risk would include Current Suicide Ideation, Current Suicidal Plan, Current Suicidal Ideation, and Access to Means. The S-RAM, as with similar assessment tools, will rely on clinical judgment and should be used in context of its setting. The literature states that suicide risk assessments should be completed within a framework and there are a minimum number of structured assessments that adhere to this philosophy. In other words, the S-RAM will most likely work best when the situation is a little more ambiguous and several factors are involved and there is not one that is more obvious than the others. For the purposes of this study extreme groups design and cross tabulations will be used. Statistical analysis will be completed utilizing the SPSS statistical package software. The data will be sorted into extreme groups of “high” or “low” on the OSRL. Then a cross tabulation will be run in each of the key subscales of the S-RAM. Cross tabulations will provide the correlations and the strength of the correlations for each variable within the “high” level of the OSRL which will be the focus of the study. Those factors that are found to be significantly correlated to the OSRL will be the ones most likely to influence the rating for that subscale and in the Overall Suicide Risk Level. For example, within the Static Risk Factor subscale, certain factors related to high suicide risk, such as hopelessness, depression, past attempts, etc., as identified in the literature. These factors would be expected to be highly correlated with the OSRL. The same would be repeated for the Dynamic Risk Factor, Protective Factor, and Risk Formulation categories.
3.12.1 Question 1

Do persons identified as either low or high risk on the Overall Suicide Risk Level differ in their mean scores on the (a) Static Risk Factors, (b) Dynamic Risk Factors, and (c) Protective Factors?

This question will help determine if there is a statistically significant difference between the means in each subscale. The assumption is that there is equal variance between groups. An independent sample t-test will be run for each subscale.

3.12.2 Question 2

What is the relationship between the variables in the “Static Risk Factors” subscale of the S-RAM and Overall Suicide Risk Level?

This question will look at significant correlations between variables in the Static Risk Factors subscale and the OSRL. We would expect to see which of these variables are significantly correlated with the “high” level of the OSRL, which will be the area of focus.

3.12.3 Question 3

What is the relationship between the variables in the “Dynamic Risk Factors” subscale of the S-RAM and Overall Suicide Risk Level?

This question will look at significant correlations between variables in the Dynamic Risk Factors subscale and the OSRL. We would expect to see which of these variables are significantly correlated with the “high” level of the OSRL, which will be the area of focus.
3.12.4 Question 4

What is the relationship between the variables in the “Protective Factors” subscale of the S-RAM and Overall Suicide Risk Level?

This question will explore significant correlations between the Protective Factors subscale and the OSRL. We would expect to see significant correlations with specific variables and the “high” level of the OSRL which is the area of focus.

3.12.5 Question 5

What is the relationship between the (a) Static Risk Factors (b) Dynamic Risk Factors and (c) Protective Factors and the Overall Suicide Risk Level?

To answer this question, the correlations of the Risk Factor subscale will be examined. Significantly correlated relationships between the variables in the Risk Factor subscale and the “high” level of the OSRL will be explored.

3.13 Limitations

There are several limitations to the study. First will be that this study is a quasi-experimental design. This is due to the setting being a real world setting. As discussed earlier, it would be unethical to have a true “control” and “experimental” group in this setting because it would leave some clients without an intervention. Therefore, every adult client that came into Netcare between the set timeframe received the S-RAM to help determine suicide risk level.

Next is the inconsistency of rating scales within the instrument. The Static Risk Factors subscale for example uses the ratings of “present”, “absent”, or “did not evaluate”, while the other subscales use the ratings of “low”, “moderate”, or “high”. The Static Risk Factor subscale does not provide as many descriptors as the other subscales to
help make the determination between the ratings. Also, the Static Risk Factor subscale does not provide an explanation for how the clinician should rate and/or take into consideration a rating of “did not evaluate”. This leaves this subscale wide open for interpretation which decreases consistency in ratings.

Within the Dynamic Risk Factors subscale, there are “low”, “moderate”, and “high” levels which can be rated, however, some variables also have “N/A” as an option which leads to more choices and more room for subjectivity. The Dynamic Risk Factor subscale also does not state or give an explanation about which variables, should they be chosen places a client at high risk for suicide regardless of how he or she scores on the rest of the assessment. From the literature, we know that current suicide plans, intent, ideations, and past attempts place a client at high risk for suicide, however, these variables are not highlighted or subscaleed out on the S-RAM as being of critical importance.

On the Clinician Assessment of Reliability, the S-RAM does not indicate if this subscale is crucial to the overall assessment, or what to do if client self-report and/or 3rd party information cannot be obtained.

The S-RAM includes “unique factors” under two of the subscales which have no descriptors and does not explain how to incorporate this information into the S-RAM. These items would be completely subjective which can contribute to low inter-rater reliability.

The Risk Formulation subscale includes new variables such as the Key Mental Status Factors and Suicidality that were not previously separated in the assessment. There
is no explanation of why these particular variables were chosen or the descriptors that are used with them.

The S-RAM also places the Overall Suicide Risk Level within the Risk Formulation subscale when it should be under its own heading and should come with instructions to determine the OSRL using the ratings from the previous subscales. This is left as an implied area.

Other limitations to consider are the threats to internal and external validity that are present. There is a threat to internal validity because we do not have a “control” group and “experimental” group based on the type of environment and nature of the study. External validity will be threatened if the assessing clinicians are aware of what is being measured, for example, a change in the number of hospital admissions based on the implementation of the suicide risk assessment. By becoming aware of what is being measured, an interaction effect can occur and thus a true picture of the effectiveness of the suicide risk assessment on the types of interventions performed will be clouded.

Limitations to using the Extreme Groups design would be that only the top third and bottom third of the data are being used which takes out the middle subscale of cases. There would usually be a concern regarding the sample no longer representing the population once this separation occurs (Newton & Rudestam, 2013). With the initial N=22,300, the likelihood of the new sample not representing the population is low but still remains a limitation.

The S-RAM does not have a way to “score” the information. Each subscale provides ratings with no numerical values to tell how many variables are rated on certain levels in each subscale. The clinician will have to pull this information over
Overall, the benefits of using the Suicide Risk Assessment Matrix outweigh the risks. Important information can be gathered regarding specific factors that if present, can indicate a person is high risk for suicide. Knowing which factors are related can cut down on a number of variables and lead to a more precise indication of those at high risk. Adding a numerical value to the S-RAM subscales can help with consistency, scoring, future studies, assessment criteria, and trainings in how to detect those at high risk for suicide versus those that need other types of service.
Chapter 4: Results

4.1 Introduction

The purpose of this study is to evaluate how clinicians are utilizing the Suicide Risk Assessment Matrix – Adult (S-RAM) in determining the severity of risk in patients presenting in an emergency department. The study focuses on identifying the variables that the clinicians appear to rely on the most when making a determination on the level of risk for suicide in a patient. What makes the S-RAM different from other commonly used risk assessment tools is the integration of protective factors. The S-RAM includes four specific subscales of interest to determining risk level. The Static Risk Factor subscale includes demographic and past history information, items that do not usually fluctuate. The Dynamic Risk Factor subscale includes variables that may currently be present and may fluctuate over time. The Protective Factor subscale includes items that if present, usually can deter negative thoughts and/or actions that can lead to increased suicide risk. The last subscale is the Risk Formulation subscale, where the assessing clinicians rate the previous three subscales based on their overall ratings as “low”, “moderate”, or “high”. From these evaluations, the Overall Suicide Risk Level (OSRL) is then rated based on these levels, also on a “low”, “moderate”, or “high” scale.
4.2 Descriptive Statistics Data

This study included 22,300 cases gathered from 2008 to 2010 by the clinicians at Netcare. Those patients that came into Netcare between this timeframe were administered the S-RAM in conjunction with their overall assessment process. As noted earlier, data was collected regarding the Static, Risk, Protective and Risk Formulation subscales. The Static Risk Factor subscale was the only subscale where the variables were rated using “present” or “absent”. The Dynamic Risk, Protective, and Risk Formulation subscales had level of severity ratings ranging from “low”, “moderate,” and “high” that the clinicians were able to choose between. Finally, this data was given an Overall Suicide Risk Level (OSRL) rating by the assessing clinicians. The OSRL rating was also on a “low”, “moderate”, or “high” level. The agencies where the patients were referred were gathered separately from the S-RAM data and actual levels of care (ie, inpatient or outpatient) were not recorded.

Extreme groups design was used to analyze the data. According to Newton and Rudestam (2013) extreme groups design is used to increase the power of a study, especially when there is a low to moderate treatment effect. Extreme groups design works by selecting those cases at the extreme ends of a distribution. By dichotomizing the data, the more ambiguous data in the middle are removed. For this design, the data was divided within the Overall Suicide Risk Level (OSRL) and used only the data in the “low” and “high” categories, and eliminated the “moderate” level. Newton and Rudestam (2013) write that a limitation to this type of study design is that by using the extremes the data may no longer be representative of the population from which it was pulled, therefore it may not be as generalizable. Once the data is divided into the extreme groups the new
population is \( N = 15,315 \) with 12,571 in the “low” OSRL category and 2,564 in the “high” OSRL category (See Table 4.1). With the number of cases used in this study, the likelihood of the sample not being representative of the population is reduced.

Table 4.1 - Frequencies of Cases in the Overall Suicide Risk Level (OSRL) using Extreme Groups Design

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>12751</td>
<td>39.1</td>
<td>83.3</td>
</tr>
<tr>
<td>High</td>
<td>2564</td>
<td>7.9</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>15315</td>
<td>47.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.3 Research Question 1: Differences between low and high OSRL with the risk factors subscales.

The first research question (Do persons identified as either low or high risk on the Overall Suicide Risk Level differ in their mean scores on the (a) Static Risk Factors, (b) Dynamic Risk Factors, and the (c) Protective Factors?) was examined using an independent sample t-test. Table 4.2 shows the number of cases for both the high and low ratings of the OSRL, means, standard deviations and \( p \) values for the first three subscales. The Levine test of equality of variance was conducted prior to running the t-tests for each of the subscales. The null hypotheses of equal variances was not rejected for Static Risk Factors \( (F = 1.89, \ p > .05) \), and Protective Factors \( (F = 2.21, \ p > .05) \). The null hypotheses of equal variance was rejected for the Dynamic Risk Factors \( (F = 143.20, \ p < .001) \). This could be due to the unequal number of cases assessed within each variable. This can also
be indicative of the clinicians being more subjective in rating the variables within the Dynamic Risk Factor section which could be due to the presenting problems and the setting in which the S-RAM was conducted.

Table 4.2 – Number of cases, means, standard deviations, t-tests, and p values for Static, Dynamic, and Protective Risk Factors.

<table>
<thead>
<tr>
<th>Overall Risk Level</th>
<th>N</th>
<th>Mean (sd)</th>
<th>t-test (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static</td>
<td>0 Low</td>
<td>12751</td>
<td>8.24 (2.49)</td>
<td>3.78 (15,313)</td>
</tr>
<tr>
<td></td>
<td>1 High</td>
<td>2564</td>
<td>8.04 (2.48)</td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>0 Low</td>
<td>12747</td>
<td>29.72 (12.83)</td>
<td>-19.65 (3,393)*</td>
</tr>
<tr>
<td></td>
<td>1 High</td>
<td>2564</td>
<td>35.84 (14.69)</td>
<td></td>
</tr>
<tr>
<td>Protective</td>
<td>0 Low</td>
<td>12733</td>
<td>22.72 (5.78)</td>
<td>3.13 (15,290)</td>
</tr>
<tr>
<td></td>
<td>1 High</td>
<td>2559</td>
<td>22.33 (5.85)</td>
<td></td>
</tr>
</tbody>
</table>

* Equal variances not assumed.

The results of the t test for the Static Risk Factor subscale shows that 2,564 people that rated “high” on this subscale were also given a “high” OSRL rating (M= 8.04, SD= 2.48) versus 12, 751 people that rated “high” on this subscale that were given a “low” OSRL rating (M=8.24, SD=2.49). The mean differences between the “low” and “high” OSRL ratings between groups are statistically significant (p = .000) which indicates that the variables within this subscale were considered by the assessing clinicians when determining the OSRL and that other factors may have influenced the decision to place clients in the “high” Overall Suicide Risk Level category.
The results of the \( t \) test for the Dynamic Risk Factor subscale shows that 2,564 people that rated “high” on this subscale were also given a “high” OSRL rating (\( M = 35.84, \ SD = 14.69 \)) versus 12,747 people that rated “high” on this subscale that were given a “low” OSRL rating (\( M = 29.72, \ SD = 12.83 \)). Equal variance is not assumed in this case and the mean differences between the “low” and “high” OSRL ratings between groups are statistically significant (\( p = .000 \)) which indicates that the variables within this subscale were strongly considered and may have had the most influence when determining the OSRL rating. The subjectivity of the clinicians may have caused such a difference in how this subscale was rated from the others.

The results of the \( t \) test for the Protective Factor subscale shows that 12,733 people rated as “low” on this subscale were given a “high” rating on the OSRL (\( M = 22.72, \ SD = 5.78 \)) versus 2,559 people that were rated “high” on this subscale and were given a “high” rating on the OSRL (\( M = 22.33, \ SD = 5.85 \)). The mean differences between the “low” and “high” OSRL ratings between groups are statistically significant (\( p = .002 \)) which indicates that the variables within this subscale were considered when determining the OSRL rating. Because the Protective subscale is expected to be inversely related to the OSRL rating, it makes sense that having a “low” rating within this subscale would show more of a higher rating on the OSRL. It may also be inferred that the lower number of clients given a “high” OSRL rating even though they show a “high” protective factor rating, may indicate the influence of other factors or that the protective factors were not strong enough to decrease level of risk.
4.4 Research Questions 2 through 4: Cross Tabulations and Measures of Association for the Variables within the Risk Factor Subscales with Overall Suicide Risk Level.

Once the cases are divided into the “high” and “low” categories of the S-RAM, a cross tabulation table was completed for the variables in each subscale with OSRL. The variables within each subscale are ranked by measure of association (phi in the case of Static Risk Factors (a 2x2 table) or Cramer’s $V$ for Dynamic, Protective, and Risk Formulation sections. Given the large sample size, almost all variables are statistically significant, but show very low correlations (<.10) which may be of limited practical significance.

4.5 Research Question 2: Static Risk Factors with Overall Suicide Risk Level

To assess the relationship between the variables in the Static Risk Factor subscale and the OSRL, a cross tabulation was completed. Table 4.3 contains 14 variables. The first column in this table includes the name of the variable, a descriptor if applicable, the total number of people assessed within this variable and the number of people whom were marked as “present” for the variables. The second column contains the phi, a measure of association for contingency tables that are 2x2. The final two columns show the number (n) and the percentage that were rated “high” or “low” within the OSRL.
<table>
<thead>
<tr>
<th>Static Risk Factor [Descriptor] (total number assessed on the variable; number of persons marked as “present” on the variable)</th>
<th>Phi</th>
<th>Overall Suicide Risk Level Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior Suicide Attempt [Multiple attempters at least a moderate risk] (15,002; 5,600)</td>
<td>-.04</td>
<td>1,040 (41.5%)</td>
</tr>
<tr>
<td>Near Lethal Suicide Attempt (14,954; 2,951)</td>
<td>-.03</td>
<td>561 (22.4%)</td>
</tr>
<tr>
<td>History of Violence (15,040; 8,148)</td>
<td>-.03</td>
<td>1,444 (57.4%)</td>
</tr>
<tr>
<td>Significant Mental Disorder [Depression, Bipolar, Schizophrenia, Anxiety D/O, Antisocial or Borderline PD] (15,186; 9,939)</td>
<td>-.02</td>
<td>1,731 (67.9%)</td>
</tr>
<tr>
<td>History of Substance Abuse (15,155; 9,695)</td>
<td>-.02</td>
<td>1,684 (66.4%)</td>
</tr>
<tr>
<td>Race/Ethnicity [Caucasian, Native American, Alaska Native] (15,314; 8,771)</td>
<td>.02</td>
<td>1,421 (55.4%)</td>
</tr>
<tr>
<td>History of Physical Abuse as a Victim (14,657; 5,461)</td>
<td>-.02</td>
<td>956 (38.9%)</td>
</tr>
<tr>
<td>Age [15-25, 65+] (15,315; 4,300)</td>
<td>.01</td>
<td>699 (27.3%)</td>
</tr>
<tr>
<td>History of Sexual Abuse (14,586; 3,943)</td>
<td>-.01</td>
<td>681 (27.9%)</td>
</tr>
<tr>
<td>History of Bullying (14,504; 5,910)</td>
<td>-.01</td>
<td>1,008 (41.6%)</td>
</tr>
<tr>
<td>Gender [male=more likely to complete; female=more likely to attempt] (15,315; 2,564)</td>
<td>-.01</td>
<td>1,570 (61.2%)</td>
</tr>
<tr>
<td>Sexual Orientation [GLBT] (14,642; 937)</td>
<td>&lt;=-.01</td>
<td>163 (6.7%)</td>
</tr>
<tr>
<td>Chronic Health Problem (15,087; 5,504)</td>
<td>&lt;=-.01</td>
<td>933 (36.9%)</td>
</tr>
<tr>
<td>Family History of Suicidal Behavior (14,469; 3,070)</td>
<td>&lt;=-.01</td>
<td>524 (21.6%)</td>
</tr>
</tbody>
</table>
4.6 Research Question 3: Dynamic Risk Factors with Overall Suicide Risk Level

With the Dynamic factors overall, we see that the strengths of the association (measured by Cramer’s $V$) are at best on a low level, with the highest variable score being .15. The Recency of Prior Attempts variable has only one option and that is to choose ‘high’ if there was an attempt in the past 30 days. Because of this, there are no scores to indicate how it relates to the OSRL because if endorsed it will always be a 1. Items are distinguished in the literature as being highly correlated with suicide risk and completion not weighted as heavily in a real world setting. Low association could indicate that other factors were considered.

Table 4.4 shows the results of the cross tabulation for the 26 variables in the Dynamic Risk Factor subscale. For each variable listed the first column gives the total number of persons assessed on that variable. The next column contains the Cramer’s $V$, a measure of association for tables that are larger than two rows and two columns. The next column is the rated OSRL of “high” or “low”. The final three columns show the number and the percentage of persons within the levels of each of the variables. The Dynamic Risk Factors are ranked in descending order by Cramer’s $V$. The “low”, “moderate”, and “high” ranking within each variable includes the descriptors that the clinician uses to distinguish between levels of severity.
## Table 4.4 Cross Tabulations - Dynamic

<table>
<thead>
<tr>
<th>Dynamic Risk Factors (total number assessed on the variable)</th>
<th>Cramer's $V$</th>
<th>Rated OSRL Level</th>
<th>Assessed Level for Dynamic Risk Factor, Descriptor, $n$ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Suicidal Plan (7,298)</td>
<td>.15</td>
<td>High</td>
<td>[No Immediate Plan] 768 (50.4%) [Non-specific Plan] 350 (23%) [Imminent &amp; Specific Plan] 405 (26.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>3,891 (67.4%) 1,002 (17.4%) 882 (15.3%)</td>
</tr>
<tr>
<td>Current Suicide Ideation (6,531)</td>
<td>.15</td>
<td>High</td>
<td>[Easy to Dismiss] 595 (41.7%) [Difficult to Dismiss] 502 (35.2%) [Impossible to Dismiss] 331 (23.2%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>2,963 (58.1%) 1,471 (28.8%) 669 (13.1%)</td>
</tr>
<tr>
<td>Hopelessness (14,020)</td>
<td>.15</td>
<td>High</td>
<td>[Future Oriented] 1,110 (47.2%) [Occasional &amp; Moderate] 745 (31.6%) [Frequent &amp; Intense] 499 (21.2%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>7,405 (63.5%) 3,074 (26.4%) 1,187 (10.2%)</td>
</tr>
<tr>
<td>Current Suicidal Intention (6,145)</td>
<td>.15</td>
<td>High</td>
<td>[Goal other than death] 578 (42.8%) [Ambivalent about death as a goal] 440 (32.5%) [Goal of death] 334 (24.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>2,963 (58.1%) 1,471 (28.8%) 669 (13.1%)</td>
</tr>
</tbody>
</table>

Continued
Table 4.4 Continued

<table>
<thead>
<tr>
<th>Lethality of Prior Attempts (13,284)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>[No prior attempt]</td>
<td>1,058 (46%)</td>
<td>7,019 (63.9%)</td>
</tr>
<tr>
<td>[One prior attempt, not lethal]</td>
<td>733 (31.8%)</td>
<td>2,566 (23.4%)</td>
</tr>
<tr>
<td>[One prior attempt that was nearly lethal]</td>
<td>511 (22.2%)</td>
<td>1,397 (12.7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Means/Method B (4,926)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Non-lethal/non-harmful]</td>
<td>345 (30.4%)</td>
<td>1,727 (45.6%)</td>
</tr>
<tr>
<td>[Harmful]</td>
<td>415 (36.6%)</td>
<td>1,246 (32.9%)</td>
</tr>
<tr>
<td>[Lethal]</td>
<td>375 (33%)</td>
<td>818 (21.6%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Means/Method A (5,899)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Not available]</td>
<td>444 (34.6%)</td>
<td>2,324 (50.4%)</td>
</tr>
<tr>
<td>[Restrictive or limited access]</td>
<td>448 (34.9%)</td>
<td>1,371 (29.7%)</td>
</tr>
<tr>
<td>[Ready or unrestricted access]</td>
<td>392 (30.5%)</td>
<td>920 (19.9%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolved Plan (8,435)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Has no plans]</td>
<td>1,138 (68.6%)</td>
<td>5,571 (82.2%)</td>
</tr>
<tr>
<td>[Has a plan but no steps]</td>
<td>377 (22.7%)</td>
<td>900 (13.3%)</td>
</tr>
<tr>
<td>[Has plan &amp; preparation]</td>
<td>143 (8.6%)</td>
<td>306 (4.5%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Worthlessness (10,916)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Easy to dismiss]</td>
<td>806 (40.5%)</td>
<td>4,903 (54.9%)</td>
</tr>
<tr>
<td>[Difficult to dismiss]</td>
<td>810 (40.7%)</td>
<td>3,127 (35%)</td>
</tr>
<tr>
<td>[Impossible to dismiss]</td>
<td>373 (18.8%)</td>
<td>897 (10%)</td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th>Table 4.4 Continued</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unique Factors</strong></td>
</tr>
<tr>
<td>(1,641)  .13</td>
</tr>
<tr>
<td><strong>High</strong></td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>46 (13.9%)</td>
</tr>
<tr>
<td>102 (30.8%)</td>
</tr>
<tr>
<td>183 (55.3%)</td>
</tr>
<tr>
<td><strong>Low</strong></td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>299 (22.8%)</td>
</tr>
<tr>
<td>485 (37%)</td>
</tr>
<tr>
<td>526 (40.2%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Means/Methods</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
</tr>
<tr>
<td>(4,857)  .13</td>
</tr>
<tr>
<td><strong>High</strong></td>
</tr>
<tr>
<td>[High likelihood of rescue]</td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>436 (39.2%)</td>
</tr>
<tr>
<td>462 (41.6%)</td>
</tr>
<tr>
<td>213 (19.2%)</td>
</tr>
<tr>
<td><strong>Low</strong></td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>2,017 (53.8%)</td>
</tr>
<tr>
<td>1,251 (33.4%)</td>
</tr>
<tr>
<td>478 (12.8%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Negative View of Self-Competence</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(14,281)  .11</td>
</tr>
<tr>
<td><strong>High</strong></td>
</tr>
<tr>
<td>[Sees self as competent]</td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>855 (35.7%)</td>
</tr>
<tr>
<td>1,242 (51.8%)</td>
</tr>
<tr>
<td>300 (12.5%)</td>
</tr>
<tr>
<td><strong>Low</strong></td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>5,815 (48.9%)</td>
</tr>
<tr>
<td>5,267 (44.3%)</td>
</tr>
<tr>
<td>802 (6.7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Depression</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(11,272;2069)  .10</td>
</tr>
<tr>
<td><strong>High</strong></td>
</tr>
<tr>
<td>[Mild]</td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>596 (28.8%)</td>
</tr>
<tr>
<td>863 (41.7%)</td>
</tr>
<tr>
<td>610 (29.5%)</td>
</tr>
<tr>
<td><strong>Low</strong></td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>3,603 (39.2%)</td>
</tr>
<tr>
<td>3,749 (40.7%)</td>
</tr>
<tr>
<td>1,851 (20.1%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Lack or Missing Social Support</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(14,927)  .10</td>
</tr>
<tr>
<td><strong>High</strong></td>
</tr>
<tr>
<td>[Feels cared for]</td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>884 (35.4%)</td>
</tr>
<tr>
<td>1,142 (45.7%)</td>
</tr>
<tr>
<td>474 (19%)</td>
</tr>
<tr>
<td><strong>Low</strong></td>
</tr>
<tr>
<td>Count</td>
</tr>
<tr>
<td>5,767 (46.4%)</td>
</tr>
<tr>
<td>5,141 (41.4%)</td>
</tr>
<tr>
<td>1,519 (12.2%)</td>
</tr>
</tbody>
</table>

Continued
Table 4.4 continued

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Low</th>
<th>Current Stressors (14,626)</th>
<th>High</th>
<th>Low</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Interpersonal Problem Solving (14,703)</td>
<td>[Can construct solutions]   595 (24.1%)</td>
<td>4,095 (33.5%)</td>
<td>[None or few with low intensity] 373 (15.2%)</td>
<td>2,807 (23.1%)</td>
<td>[Usually considers consequences] 912 (35.6%)</td>
<td>5,782 (45.4%)</td>
</tr>
<tr>
<td></td>
<td>[Has some ability to find solutions] 1,187 (48%)</td>
<td>5,644 (46.2%)</td>
<td>[Some with moderate intensity] 1,273 (51.8%)</td>
<td>6,370 (52.3%)</td>
<td>[Seldom considers consequences] 1,310 (51.1%)</td>
<td>5,854 (45.9%)</td>
</tr>
<tr>
<td></td>
<td>[Little to no ability to solve problems] 692 (28%)</td>
<td>2,490 (20.4%)</td>
<td>[Many with high intensity] 811 (33%)</td>
<td>2,992 (24.6%)</td>
<td>Never considers consequences 342 (13.3%)</td>
<td>1,111 (8.7%)</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impulsivity (15,311)</td>
<td>High</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Infrequent]</td>
<td>[Occasional]</td>
<td>[Constant]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>856 (54.2%)</td>
<td>546 (34.6%)</td>
<td>177 (11.2%)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blames Self (8,667)</td>
<td>High</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Not present]</td>
<td>[Manageable]</td>
<td>[Unmanageable]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,617 (74.6%)</td>
<td>456 (21%)</td>
<td>95 (4.4%)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obsessions (13,016)</td>
<td>High</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Not present]</td>
<td>[Manageable]</td>
<td>[Unmanageable]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,617 (74.6%)</td>
<td>456 (21%)</td>
<td>95 (4.4%)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Continued
<table>
<thead>
<tr>
<th>Table 4.4 Continued</th>
<th></th>
<th>[Occasional]</th>
<th>[Intermittent]</th>
<th>[Chronic]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insomnia</strong></td>
<td>.07</td>
<td>677 (35.3%)</td>
<td>695 (36.33%)</td>
<td>544 (28.4%)</td>
</tr>
<tr>
<td>(10,732)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td></td>
<td>3,815 (43.3%)</td>
<td>3,036 (34.4%)</td>
<td>1,965 (22.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>677 (35.3%)</td>
<td>695 (36.33%)</td>
<td>544 (28.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anxiety/Panic</strong></td>
<td>.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(11,123)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td></td>
<td>[Mild] 727 (35.9%)</td>
<td>[Moderate] 876 (43.3%)</td>
<td>[Panic/overwhelmed] 421 (20.8%)</td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td></td>
<td>4,000 (44%)</td>
<td>3,574 (39.3%)</td>
<td>1,525 (16.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>677 (35.3%)</td>
<td>695 (36.33%)</td>
<td>544 (28.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agitation</strong></td>
<td>.06</td>
<td>[Not present] 1,211 (50%)</td>
<td>[Mild] 696 (28.8%)</td>
<td>[Moderate/Severe] 513 (21.2%)</td>
</tr>
<tr>
<td>(14,247)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td></td>
<td>6,804 (57.5%)</td>
<td>3,118 (26.4%)</td>
<td>1,905 (16.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>677 (35.3%)</td>
<td>695 (36.33%)</td>
<td>544 (28.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Psychosis</strong></td>
<td>.06</td>
<td>[Not present] 1,622 (72.5%)</td>
<td>[Present but not acted on] 309 (13.8%)</td>
<td>[Previously acted on hallucinations or delusions] 305 (13.6%)</td>
</tr>
<tr>
<td>(13,138)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td></td>
<td>8,585 (78.7%)</td>
<td>1,304 (12%)</td>
<td>1,013 (9.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>677 (35.3%)</td>
<td>695 (36.33%)</td>
<td>544 (28.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mental Disorder</strong></td>
<td>.06</td>
<td>[Controlled] 435 (20.4%)</td>
<td>[Moderate symptoms] 645 (30.2%)</td>
<td>[Symptoms interfere with functioning] 1,055 (49.4%)</td>
</tr>
<tr>
<td>(11,380)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td></td>
<td>2,154 (23.3%)</td>
<td>3,183 (34.4%)</td>
<td>3,908 (42.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>677 (35.3%)</td>
<td>695 (36.33%)</td>
<td>544 (28.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th>AOD (9,490)</th>
<th>.03</th>
<th>[Use]</th>
<th>[Abuse]</th>
<th>[Dependency]</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td>423 (25.8%)</td>
<td>390 (23.8%)</td>
<td>827 (50.4%)</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>2,234 (28.5%)</td>
<td>1,995 (25.4%)</td>
<td>3,621 (46.1%)</td>
</tr>
<tr>
<td>Contagion (12,842)</td>
<td>.03</td>
<td>[No exposure]</td>
<td>[Past exposure]</td>
<td>[Recent exposure]</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>1,621 (77.2%)</td>
<td>439 (20.9%)</td>
<td>41 (2%)</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>8,576 (79.8%)</td>
<td>1,981 (18.4%)</td>
<td>184 (1.7%)</td>
</tr>
<tr>
<td>Paranoia (9,359)</td>
<td>.02</td>
<td>[No influence on help seeking]</td>
<td>[Mild influence on help seeking]</td>
<td>[Consistently refusing help]</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>991 (59.7%)</td>
<td>504 (30.4%)</td>
<td>164 (9.9%)</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>4,829 (62.7%)</td>
<td>2,172 (28.2%)</td>
<td>699 (9.1%)</td>
</tr>
</tbody>
</table>

*Only assessed if present at a ‘high’ level*

*All Cramer’s V were statistically significant owing to a large sample size. Relative value to Cramer’s indicates practical significance.*
4.7: Research Question 4: Protective Factors with Overall Suicide Risk Level

The Cramer’s $V$ was used for this cross tabulation. From this the first three variables in descending order are Life Satisfaction (Cramer’s $V = .04$), Frustration Tolerance (Cramer’s $V = .04$), and Access to Means (Cramer’s $V = .04$). At best, these are still considered low ratings for strength of correlation.

Table 4.5 shows the results of the cross tabulation for the 11 Protective Factors. After running cross tabulations in this subscale, it is determined that the variables in this area showed a low strength of association according to Cramer’s $V$. Using the contingency table, it is seen that for each variable in the Protective Factor subscale, the first column gives the total number of persons assessed on that variable. Some variables may include a brief description which is also added. The next column contains the Cramer’s $V$. The final three columns show the number and the percentage of persons within the levels of each of the variables that are also rated at high on the OSRL. The Protective Factors are ranked in descending order by Cramer’s $V$. The “low”, “moderate”, and “high” ranking within each variable includes the descriptors that the clinician uses to distinguish between levels of severity. This table includes variable name (descriptor if applicable), Total $N$, $n$ for ‘high rating on OSRL, Cramer’s $V$, and Number and Percentage of Persons in the High Overall Suicide Risk Levels according to if rated ‘Low’, ‘Moderate’, or ‘High’.
<table>
<thead>
<tr>
<th>Protective Factors (total number assessed on the variable)</th>
<th>Cramer's V</th>
<th>Rated OSRL Level</th>
<th>Assessed Level on Protective Factor within OSRL Descriptor, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Satisfaction (14,290)</td>
<td>.04</td>
<td>High</td>
<td>[Optimistic outlook] 758 (31.8%) [Outlook varies] 1,279 (53.6%) [Feeling hopeless] 348 (14.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>4,371 (36.7%) 6,102 (51.3%) 1,432 (12%)</td>
</tr>
<tr>
<td>Frustration Tolerance (14,524)</td>
<td>.04</td>
<td>High</td>
<td>[Manages in constructive way] 478 (19.7%) [Inconsistent in management] 1,568 (64.6%) [Seldom or never manages] 381 (15.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>2,897 (23.9%) 7,482 (61.9%) 1,718 (14.2%)</td>
</tr>
<tr>
<td>Access to Means (9,927)</td>
<td>.04</td>
<td>High</td>
<td>[No access] 822 (48%) [Restrictive or limited access] 604 (35.2%) [Ready or unrestricted access] 288 (16.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>4,334 (52.8%) 2,653 (32.3%) 1,226 (14.9%)</td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th>Table 4.5 Continued</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value/Beliefs</strong> (13,867)</td>
</tr>
<tr>
<td>High</td>
</tr>
<tr>
<td>Low</td>
</tr>
</tbody>
</table>

| Coping Skills (14,766) | 0.04 |
| High | [Has several healthy skills] 659 (26.6%) | [Few or poorly developed skills] 1,299 (52.5%) | [Unhealthy or destructive] 517 (20.9%) |
| Low | 3,762 (30.6%) | 6,295 (51.2%) | 2,234 (18.2%) |

| Will to Live (13,813) | 0.04 |
| High | [Desire to feel better] 1,521 (65.2%) | [Vague future plans] 587 (25.1%) | [Feels hopeless] 226 (9.7%) |
| Low | 7,971 (69.4%) | 2,610 (22.7%) | 898 (7.8%) |

| Therapeutic/Treatment Relationship (10,590) | 0.03 |
| High | [Strong] 495 (26.4%) | [Not well engaged] 594 (31.7%) | [Disengaged] 783 (41.8%) |
| Low | 2,201 (25.2%) | 2,510 (28.8%) | 4,007 (46%) |

| Religiousness (13,847) | 0.03 |
| High | [Improves functioning] 965 (42.2%) | [Neutral] 1,256 (55%) | [Distress and preoccupation] 64 (2.8%) |
| Low | 5,246 (45.4%) | 6,095 (52.7%) | 221 (1.9%) |

Continued
### Table 4.5 continued

<table>
<thead>
<tr>
<th>Responsibility to children and/or beloved pets (11,851)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,156 (59.4%)</td>
<td>6,256 (63.2%)</td>
</tr>
<tr>
<td></td>
<td>454 (23.3%)</td>
<td>2,160 (21.8%)</td>
</tr>
<tr>
<td></td>
<td>335 (17.2%)</td>
<td>1,490 (15%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Supports (14,687)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Support utilized]</td>
<td>1,286 (52.4%)</td>
<td>6,810 (55.7%)</td>
</tr>
<tr>
<td>[Support not utilized]</td>
<td>756 (30.8%)</td>
<td>3,637 (29.7%)</td>
</tr>
<tr>
<td>[No support]</td>
<td>411 (16.8%)</td>
<td>1,787 (14.6%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reality Testing (15,292)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Intact]</td>
<td>1,900 (74.2%)</td>
<td>9,690 (76.1%)</td>
</tr>
<tr>
<td>[Responds to external prompts]</td>
<td>414 (16.2%)</td>
<td>1,861 (14.6%)</td>
</tr>
<tr>
<td>[Impaired]</td>
<td>245 (9.6%)</td>
<td>1,182 (9.3%)</td>
</tr>
</tbody>
</table>

*All Cramer’s V were statistically significant owing to a large sample size. Relative value to Cramer’s indicates practical significance.

#### 4.8 Research Question 5: Risk Formulation

For the Risk Formulation subscale, the clinicians give an overall rating for each of the previous subscales. These variables are listed in descending order by Cramer’s $V$. The highest rated variable in this subscale is Suicidality with a Cramer’s $V$ of .91. The descriptors under Suicidality include Intent, Strength of Impulse, Ideation, History, Resolved Plans and Preparation. These are all items to be found within the Dynamic Risk Factor subscale. Dynamic Risk Factors do not have a descriptor.

Factors variable includes the descriptors of Depression, Agitation, Impulsivity, and Hopelessness. Static Risk Factors, Third Party Info, and Protective Factors did not
include descriptors. The protective factors have a Cramer’s $V$ of .30 which indicates that there is a low strength in its association with the rating of the OSRL. This is also evident in the previous subscale where the associations in the protective factor subscale were also showing as having low association. The protective factor subscale still shows an inverse relationship with the OSRL rating which indicates that protective factors are considered but just not as heavily.

Table 4.6 shows the results of the cross tabulation for the Risk Factor subscale. For each variable in this subscale, the first column gives the total number of persons assessed on that variable. Some variables may include a brief description which is also added. The next column contains the Cramer’s $V$. The final three columns show the number and the percentage of persons within the levels of each of the variables that are also rated at high on the OSRL. The Risk Factors are ranked in descending order by Cramer’s $V$. The “low”, “moderate”, and “high” ranking within each variable includes the descriptors that the clinician uses to distinguish between levels of severity. This table includes variable name (descriptor if applicable), Total N, $n$ for ‘high rating on OSRL, Cramer’s $V$, and Number and Percentage of Persons in the High Overall Suicide Risk Levels according to if rated ‘Low’, ‘Moderate’, or ‘High’. 
### Table 4.6 Cross Tabulation - Risk Formulation

<table>
<thead>
<tr>
<th>Risk Formulation [Descriptor] (total number assessed on the variable; number of persons at High OSRL;)</th>
<th>Cramer's V</th>
<th>Rated OSRL Level</th>
<th>Assessed Level on Risk Formulation within OSRL (%);</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicidality [Intent, Strength of Impulse, Ideation, History, Resolved Plans &amp; Preparation) (15,315)</td>
<td>.91</td>
<td>High</td>
<td></td>
<td>238 (9.3%)</td>
<td>348 (13.6%)</td>
<td>1,978 (77.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>12,559 (98.5%)</td>
<td>176 (1.4%)</td>
<td>16 (0.1%)</td>
<td></td>
</tr>
<tr>
<td>Dynamic Risk Factors (15,315)</td>
<td>.84</td>
<td>High</td>
<td>83 (3.2%)</td>
<td>761 (29.7%)</td>
<td>1,720 (67.1%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>11,325 (88.8%)</td>
<td>1,366 (10.7%)</td>
<td>60 (0.5%)</td>
<td></td>
</tr>
<tr>
<td>Key Mental Status Factors [Depression, Agitation, Impulsivity, Hopelessness] (15,315)</td>
<td>.71</td>
<td>High</td>
<td>71 (2.8%)</td>
<td>363 (14.2%)</td>
<td>2,130 (83.1%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>7,602 (59.6%)</td>
<td>4,194 (32.9%)</td>
<td>955 (7.5%)</td>
<td></td>
</tr>
<tr>
<td>Static Risk Factors (15,315)</td>
<td>.55</td>
<td>High</td>
<td>480 (18.7%)</td>
<td>1,105 (43.1%)</td>
<td>979 (38.2%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>9,485 (74.4%)</td>
<td>2,991 (23.5%)</td>
<td>275 (2.2%)</td>
<td></td>
</tr>
<tr>
<td>Third Party Info (15,315)</td>
<td>.54</td>
<td>High</td>
<td>48 (1.9%)</td>
<td>289 (11.3%)</td>
<td>872 (34%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>4,113 (32.3%)</td>
<td>440 (3.5%)</td>
<td>171 (1.3%)</td>
<td></td>
</tr>
</tbody>
</table>

Continued
Table 4.6 Continued

<table>
<thead>
<tr>
<th>Protective Factors</th>
<th>High: 726 (28.3%)</th>
<th>1,525 (59.5%)</th>
<th>313 (12.2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(15,315)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low: 3,053 (23.9%)</td>
<td>3,795 (29.8%)</td>
<td>5,903 (46.3%)</td>
<td></td>
</tr>
</tbody>
</table>

*All Cramer’s $V$ were statistically significant owing to a large sample size. Relative value to Cramer’s indicates practical significance.

4.9 Summary of Data Analysis

Extreme groups design was selected for this study. Extreme groups design can help to increase the power of the study, especially if treatment effects are low to moderate. From this design, cross tabulations were completed to determine the correlations and strengths of the correlations between the IVs and the low and high levels of the OSRL which is the DV. Cramer’s $V$ was used as a way to see the strength of the associations. Tables were created for each of the subscales of the S-RAM. From the information given it can be concluded that the majority of the associations were moderate to low. The Protective Factor subscale showed to have the lowest level of strength in associations based on the Cramer’s $V$. The Risk Formulation subscale showed the highest level of strength in associations based on Cramer’s $V$. This can indicate that individually, these subscales may not be able to stand alone in deciding the level of the OSRL. However, they appeared to be considered collectively as indicated in in the high level of strength found in the Cramer’s $V$. Another way to look at this information is through a correlation of the variables in the Risk Factor subscale with the OSRL. Table 4.7 shows the correlations of these factors.
Table 4.7 - Correlations: Risk Formulation Subscale with OSRL

<table>
<thead>
<tr>
<th>Correlations – Risk Formulation Subscale</th>
<th>Static</th>
<th>dynamic</th>
<th>Protective</th>
<th>suicidalityT</th>
<th>Mental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic</td>
<td>Pearson Correlation</td>
<td>-.065</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>22332</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protective</td>
<td>Pearson Correlation</td>
<td>.057</td>
<td>-.031</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>22309</td>
<td>22309</td>
<td></td>
<td></td>
</tr>
<tr>
<td>suicidalityT</td>
<td>Pearson Correlation</td>
<td>.049</td>
<td>.824</td>
<td>-.011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.086</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>22402</td>
<td>22332</td>
<td>22309</td>
<td></td>
</tr>
<tr>
<td>Mental</td>
<td>Pearson Correlation</td>
<td>-.059</td>
<td>.832</td>
<td>-.036</td>
<td>.625</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>22332</td>
<td>22332</td>
<td>22309</td>
<td>22332</td>
</tr>
<tr>
<td>Overall R.</td>
<td>Pearson Correlation</td>
<td>-.031</td>
<td>.171</td>
<td>-.025</td>
<td>.160</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.002</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>15315</td>
<td>15311</td>
<td>15292</td>
<td>15315</td>
</tr>
</tbody>
</table>

Each of the variables except for one in this subscale shows a statistically significant correlation (less than .05) with each of the other variables and with the OSRL. The one exception was the correlation between Suicidality (suicidalityT) and Protective factors, which is showing .09 when rounded. The strong correlations between these variables indicated that overall, these subscales and the factors therein had an effect on the other subscales and the OSRL. This is significant because it shows that these factors
are definitely considered when determining the level of the OSRL. The information from
the contingency tables and the correlation table can help make inferences regarding the
type of clients that may be rated as ‘high’ on the OSRL. This information can also be
used to provide improvements to the current S-RAM instrument to streamline
information, create other groups, improve scoring, and maybe provide groundwork for
future studies.

For example, from the data, an inference can be made regarding a client profile or
which factors are the most likely to indicate a client is at a high risk for suicide. From the
cross tabulations and pulling from each of the subscales of the S-RAM, it appears that
clients with prior suicide attempts, non-lethal suicide attempts, history of violence,
current suicidal plan, current ideation, hopelessness, intention, lethal means, feelings of
worthlessness, a plan, little to no social supports, possible problems with reality testing,
and little to no responsibility to families or pets are most likely to be in the high OSRL
group. This is based on these factors having a slightly higher association with the
subscale of static and dynamic risk factors and lower strength of association in the
protective factors subscale. While all of these factors do not have to be present in one
client in order for him or her to be considered at high risk for suicide, it is noteworthy to
highlight these variables and possibly minimize the number of factors to have to consider
when administering the S-RAM.

The Risk Formulation subscale indicated that if there is intent, a plan, and
impulsivity all rating “high” and other Dynamic Risks are present, that the overall risk
level is likely to be “high”. The Static Factors are important as well and so a strong
correlation to the OSRL (Cramer’s $V = .55$), however, it is not as strong as the
subscales indicating an immediate risk. Also of interest is that the Protective Factors did not appear to be as influential to the decision of the level of the OSRL. This could be because of the subjectivity of the rating levels or the severity of the Dynamic Factors present. In conclusion, the S-RAM appears to work best when considering all the subscales together such as within the Risk Formulation subscale and the clinicians are better able to assess current suicide risk within the OSRL.
Chapter 5: Discussion and Recommendations

5.1. Summary

As stated in earlier chapters, over 38,000 people a year complete suicide (www.cdc.gov). This is equivalent to 12.4 people per 100,000 (www.suicidology.org). Over half seek medical attention within 30 days of completion. It is important for assessing clinicians to be able to identify those at high risk for completing suicide which can be tricky due to several factors including the setting in which the assessment takes place which may be a busy emergency department. Ambiguity of details and not taking into consideration factors that may actually prevent someone from attempting are other hindrances to suicide risk assessment. The most important reason to have more accurate assessment tools is to save lives. Next is to conserve resources. Because of changes in funding, hospitals, jails, and homeless shelters now house those with psychiatric emergencies. As stated earlier chapters, changes in the economic climate such as deinstitutionalization and capitation have adjusted and decreased allocated funds and resources such that people are forced to spend more time in emergency rooms and there are less psychiatric emergency beds in the community. With people having less access to care and sometimes triage is flawed, a revolving door is created which can have people frequenting emergency rooms and/or emergency departments. Clinicians and doctors may also come under pressure to diagnosis patients more severely in order to get services that
might not otherwise be accessible. These varying factors can create confusion, and make the skill of assessment cloudy, overly subjective, and lessen the helpfulness of tools used to make determinations.

Those found to utilize emergency resources the most are those with little to no financial support and often the most severe diagnoses (Perhats & Valdez, 2008). For example, male, unmarried, unemployed, with a history of psychiatric disorder and access to means are most likely to complete according to the literature. Other subgroups exist such as females, who are found to attempt more, the elderly, adolescents, and people with significant negative life events are also found to be at higher risk for suicide. Other specific factors such as substance abuse, recent loss, chronic health problems, specific mental health diagnoses such as depression, anxiety, personality disorders such as borderline personality disorder and schizophrenia are highly likely to contribute to a person attempting and/or completing suicide. Furthermore, factors such as, impulsivity, hopelessness, recent suicide attempt, current suicidal ideation can increase risk.

By identifying the specific areas of concern and focus in current suicide risk assessments, the idea is to improve upon assessment tools and identify those at higher risk in order to save lives, improve triage practices, and spare resources. A framework for assessing for suicide is suggested in order to have consistency and minimize missing any key information. Shea (2011) introduced the CASE approach where the framework most importantly, takes into consideration, the setting in which the assessment is taking place, transient thoughts, and the emotional state of the client. Knowing which resources are available, which tools can best capture the information regarding risk and protective factors, and having key information regarding unique risk factors specific to the client is
assumed to provide the most accurate assessment process for detecting those at high risk for suicide.

The S-RAM is modeled after the Structured Assessment for Violence Risk in Youth (SAVRY). The SAVRY is designed to predict violent recidivism in juvenile offenders (Penney et al., 2010). This assessment incorporates static, dynamic, demographic, and preventative factors for youth. The SAVRY is documented in several studies to be accurate in predicting certain types of recidivism such as theft and some violent crimes. The factor most correlated, meaning more likely to predict recidivism is the historical domain. The SAVRY uses a scoring system to indicate level of risk.

5.2 Discussion

The purpose of the study was to evaluate how clinicians are utilizing the Suicide Risk Assessment Matrix in determining the severity of risk in patients presenting in an emergency department. The assumption is that with the inclusion of Static Risk Factors, Dynamic Risk Factors and Protective Factors a more accurate assessment can be completed. Just because a risk factor is present does not automatically place a person at high risk. The presence of the protective factor may have an effect on the risk factor, thus minimizing its strength or significance. Using these subscales will allow the clinicians to find high OSRL easier and possibility identify common and consistent factors to potentially make a profile of those at higher risk.

Current assessment tools focus on known risk factors and may not include protective factors. These can include SAD PERSONS, IS PATH WARM, Beck Depression Inventory, Beck Hopelessness Scale, and Beck Scale for Suicidal Ideation just to name a few. While they can be helpful to assessing clinicians there are quite a few
limitations. One of the limitations is that these tools focus only on risks. They may have high sensitivity and low specificity. They must be used within the context of a fuller, more comprehensive diagnostic assessment. This can be time consuming in an already busy environment.

Having high sensitivity and low specificity may create an issue with false positives or false negatives is another potential issue. This means some assessments may be too broad and identify several people though only a few may be at risk, or they may identify a few and miss those at risk. And finally, time consumption. Some assessment tools may be too long to administer, especially in an emergency setting where time is crucial. Currently, there are no standard risk assessment tools.

To begin analyzing the data, an independent t test was completed for the first three subscales, Static, Risk, and Protective Factors. This data is shown in table 4.2. The Levine test for equality was completed first. The null hypothesis of equal variance was not rejected for the Static Factors ($F = 1.89, p > .05$) and Protective Factors ($F = 2.21, p > .05$). The results of the $t$ test for the Static Risk Factor subscale show differences in the means for the “high” and “low” ratings of the OSRL with the “high” rating showing ($M = 8.04, SD = 2.48$) and the “low” rating showing ($M = 8.24, SD = 2.49$). The difference between the two groups is statistically significant as indicated by ($p = .000$) and the $t$ (3.78) which falls outside the critical value of 1.96. What this means is that there are specific variables within the Static Risk Factor subscale that the clinicians used to rate the OSRL level which means that the Static Risk Factor subscale can influence the OSRL rating.
The results of the $t$ test for the Protective Factor subscale also shows significant differences in the means of the “high” and “low” ratings of the OSRL. On this subscale for the “high” rating (M=22.33, SD = 5.85) and for the “low” rating (M=22.72, SD = 5.78). The difference between the two groups is statistically significant as indicated by ($p = .000$) and the $t (3.13)$ which falls outside the critical value of 1.96. What this means is that there are specific variables within the Protective Factor subscale that the clinicians used to rate the OSRL.

The null hypothesis of equal variance was rejected for Dynamic Factors ($F= 143.20, p<.001$). Not having an equal distribution in the Dynamic Factor section could lead to an increase in Type I error where the null hypothesis may be incorrectly rejected. In other words, an effect may be seen where there really may not be one. Using the data from the Levene’s test, in SPSS to correct for equal variances not assumed, it can be seen that the clinicians rated a smaller portion of the clients in the Dynamic subscale as “high” Overall Suicide Risk. The differences in the means is statistically significant ($p<.05$) and $t(-19.65)$ which is well outside the critical value of 1.96. What this indicates is that there are variables in the Dynamic Risk Factor subscale that clinicians may have used more than others determine the OSRL.

Next, Extreme Group design was used to examine the correlations within each subscale. Extreme Group design is used to increase power when there is a low to moderate treatment effect (Newton & Rudestam, 2013). A limitation of this type of design is that by using only the extreme groups, the population of interest may no longer be represented (Newton & Rudestam, 2013). This study initially began with 22,300 cases
so the likelihood of the cases no longer being representative of the initial population is low. Once the Extreme Group design was completed the new N= 15,315.

The strength of the correlations was assessed using Phi for the Static Risk factor and Cramer’s $V$ for the Dynamic, Protective, and Risk Formulation subscales. All of the Cramer’s $V$ are statistically significant, but because of the small correlations, practical significance can be questioned. The Static Risk factor subscale used Phi to assess the strength of the associations of the variables with the OSRL because this was a 2x2 contingency table, whereas the other subscale contained contingency tables bigger than a 2x2 design.

For discussion purposes, the “present” or “high” ratings of the variable and the “high” OSRL will primarily be used when determining the significance of the variables to the OSRL. If necessary, the other ratings will be discussed to show the relation of the cases to the OSRL ratings.

### 5.2.1 Static Risk Factors Results

The Static Risk factor subscale was found to have low correlations with the “high” OSRL group. Table 4.3 includes the variables, descriptors, phi (measure of association) and the number of cases marked as “present” for the variable and if they were in the “high” or “low” level of the OSRL. For Prior Suicide Attempt, we see this had the strongest correlation with phi = -.04. Of the 5,600 total cases marked present, 1,040 were rated at a “high” OSRL leaving the majority (4,560) of these cases in the “low” OSRL. This indicates that the Prior Suicide Attempt variable by itself is not used by clinicians to determine the OSRL. This could be due to other factors like timing for example. The client may have had a past suicide attempt so the variable could be marked
“present” however, the time frame for the attempt may not be recent. This could account for the 4,560 case where the variable is rated as “present” however the OSRL is rated “low”. The majority of the cases totaling 7,933 were rated as not present and “low” on the OSRL. This indicates that if the variable was not there, it was less likely that the client was given a “high” OSRL rating. Those cases marked as “present” and in the “high” OSRL rating make up less than half of those at risk (41.5%). This can also indicate that other factors are considered more strongly than the Prior Suicide Attempt which we can see by its moderate rating on the strength of correlation.

For the next variable, History of Near-Lethal Suicide Attempt, the next highest in the table, a total of 2,951 cases were marked as being “present”. The phi is -.03 showing the strength of the association as low. 561 where a history of near lethal suicide attempt was marked as “present” were rated at a “high” OSRL. The majority of the cases marked as “present” are rated at a “low” level of OSRL. This indicates that for the assessing clinicians, having a history of near lethal suicide attempt does not, by itself, determine how the clients will be rated on the OSRL. This finding is in line with the idea that other factors are influencing the clinician’s decision to rate someone at a “high” risk for suicide.

The next variable in Static Risk Factor table is History of Violence. This variable has a total of 8,148 cases where a history of violence is labeled as “present”. Phi = -.03 showing a low correlation with the OSRL. 1,444 cases labeled as “present” were given a “high” OSRL and the remaining 6,704 cases were given a “low” rating on the OSRL. With the majority of the cases being rated in the “low” OSRL category despite this variable being present, supports the low correlation of this variable to the OSRL rating.
This indicates that if this variable is considered when rating the OSRL, the clinicians are only slightly using this variable when making the overall decision of if to rate someone at a “high” suicide risk level. This variable by itself is not used to determine the OSRL.

Significant Mental Disorder is the next rated variable within the Static Risk Factor subscale. This variable has the descriptors of depression, bipolar, schizophrenia, anxiety disorder, and anti-social or borderline personality disorder. The table 4.3 shows that 9,939 cases were rated as “present” meaning these patients endorsed one of these disorders during the assessment process. 1,731 of these cases were rated with a “high” OSRL by the clinicians. The remaining 8,208 cases were given a “low” OSRL rating. The phi for this variable is -.02 which shows a low association with the OSRL. This can indicate that the assessing clinicians did not rely heavily on the presence of a mental disorder to determine the OSRL. This rating can indicate that though present, the symptoms of the disorder did not warrant the person to be placed a high risk for suicide. The assessing clinicians likely used their clinical judgment to determine how the presence of these disorders factor into their overall rating of suicidal risk for each individual client.

Of interest are the variables that showed extremely low strength of associations though the literature indicates that they are highly related to high suicide risk. One of those variables is Race/Ethnicity. The S-RAM descriptor for this variable lists Caucasian, Native American, and Alaska Native. The literature supports the idea that there are some races that are more likely to present with higher suicide risk than others. From table 4.3 it is seen that the phi for this variable is low at .02. Of the 8,771 cases where it is marked as “present” meaning the clients fall into one of these categories, only 1,421 people were rated at a “high” OSRL. This shows that the clinicians did not rely heavily on a person’s
race/ethnicity when rating the OSRL. This can be a positive finding as it can do a disservice to someone be rated at a “high” risk just because of his or her race/ethnicity or it can be a disservice and very dangerous to not assess someone to be at a high risk for suicide because they do not fall into one of these identified categories.

The next variable of interest is the age category. The S-RAM descriptor shows that persons that fall between the ages of 15-25, and 65 and above should be marked as “present” meaning they fall into a high risk category. Of the 4,300 cases that were marked as “present”, the cross tabulation shows that 699 of these cases were rated as “high” on the OSRL. The majority of these cases, though they were marked as “present” were given a “low” OSRL rating. This can indicate that the clinicians were not heavily relying on the age of the person when deciding their suicide risk level. Just as with race/ethnicity, it is important for the clinicians to be more subjective with this area because it can be dangerous to not rate someone as high risk for suicide because he or she does not fall into one of the high risk age groups even though they may present as suicidal. It can also be a disservice to rate someone as suicidal just because he or she does fall into the high risk age group category though they do not present that way in other areas.

Three variables under the Static Risk Factor subscale scored extremely low when the cross tabulation was completed. These factors are Sexual Orientation, Chronic Health Problems, and Family History of Suicidal Behavior. All three have a phi of <.01. The low ratings with these variables and their low numbers of those rated as “high” on the OSRL are indicative that the clinicians hardly if ever considered them when determining the OSRL.
In conclusion, it could be stated that the variables under the Static Risk Factor section have a low association with the OSRL rating. The low associations indicate that clinicians did not use any one variable to determine suicide risk level. It suggests that they were subjective in their ratings and just because one of the Static Risk Factors were present, it did not automatically place a person at high risk for suicide on the OSRL. The variables that were found to have the stronger correlations with the OSRL could be outliers or extreme cases which lends to why only so few were identified within the “high” level of the OSRL. The majority of the cases within this subscale actually fell to the “low” OSRL rating. Without being subjective in this area, a person could potentially be rated at a “high” OSRL and not be suicidal which can create a disservice to the client and the use of unnecessary resources. It is noted that the low level of the association of the factors in the subscale to the OSRL is of interest however, because several of these factors are found to be associated with high suicide risk level, however, in this real world setting, this does not seem to be the case.

5.2.2 Dynamic Risk Factors Results

To analyze the Dynamic Risk Factor subscale a cross tabulation was completed. The correlations under this subscale are rated by the strength of their association using Cramer’s $V$. The associations overall had a low correlation with the OSRL. Table 4.4 shows the output of the cross tabulations. It includes the variable names, the total number of clients assessed on that variable, Cramer’s $V$, the rated OSRL level, the assessed level for Dynamic Risk Factor, and how many cases are under each level of the variables using “low”, “moderate”, or “high”. For purposes of discussion, the cases that were rated as “high” within the variable and “high” on the OSRL are discussed, however, outliers or
cases where there may be a concern because of how they are rated within the variable and/or OSRL are discussed as well.

For Current Suicidal Plan, the table shows that 7,298 people were assessed. The Cramer’s $V$ is .15 which is a low association with the OSRL. This is supported by the low number of cases (405) that were rated as “high” for current plan and “high” OSRL and by the 882 cases that were rated as “high” for current plan but “low” on the OSRL. The low association with the OSRL despite the presence of this variable at a “high” rating is indicative of subjective ratings by the assessing clinicians. Any time this variable is rated at a “high” level the person or persons should be considered at a high risk for suicide. These instructions are not on the S-RAM and the outcome is left up to clinical judgment as seen with the number of cases where the OSRL is rated as low on the OSRL. There were possibly other influential factors present that affected this association. This could be an area of focus for further trainings so that if this variable is rated at a “high” level, the clients are rated and triaged appropriately.

Current Suicidal Ideation shows that 6,531 people were assessed on this variable. Again, the Cramer’s $V$ is low at .15. Within this variable 669 people were rated as “high” for current suicidal ideation, however were in the “low” OSRL group. 331 were rated “high” within the variable and “high” on the OSRL which supports the low level of association with the OSRL. Current suicidal ideation is another risk factor that if present is associated with high risk of suicide completion. With there being cases that are rated low for the OSRL, it is indicative that other factors may have influenced the rating. This may also be an area of further training for the clinicians to not dismiss the presence of
this variable, especially if it is at a “high” level which could lead to negative outcomes in the event that a client is not triaged appropriately.

Hopelessness is the next variable listed on the table. The Cramer’s $V$ shows a low association at .15. Of the 14,020 cases within this variable, 499 were rated as “high” within the variable and “high” on the OSRL which supports the low association. Hopelessness is another variable that is highly associated with suicide risk so the presence at a “high” level should alert the clinicians that more attention should be paid to this area. On table 4.4 it is seen that there are 1,187 cases that were rated as “high” within this variable however, were given a “low” OSRL rating. This could be due to the people in this category not rating “high” on other key risk factors which would influence the OSRL. It could also indicate that the subjectivity of the assessing clinicians was influenced by the presence or absence of other factors within the assessment as a whole. Training around how to evaluate this variable would be useful in making sure that the clients are assessed and triaged appropriately.

For the Current Suicidal Intention variable, 6,145 people were assessed. Of interest is that 578 of those people were rated as “high” on the OSRL, but were rated “low” on the variable. This is indicative of the influence of other factors within the assessment and the subjectivity of the clinicians. Current suicidal ideation is another variable where if present, is highly associated with high suicide risk. This table shows that 669 cases were assessed as “high” for this variable but “low” for OSRL. Ideally, if this variable is present at a “high” level, then all of the cases within this level should have been given a “high” OSRL rating. The fact that they did not indicates that more direction can be given to instruct the clinicians on rating the OSRL when this factor is present. It
also indicates that the rating of this factor was influenced by other factors either within
the S-RAM or the overall assessment process.

Lethality of Prior Attempts is the next variable in table 4.4. This variable shows a
low association with the OSRL level with a Cramer’s $V$ of .14. 13,284 cases were
assessed on this variable. Of those cases, 511 were rated “high” for the variable and
“high” for the OSRL. Influencing this variable could be the length of time from the prior
attempt. The rating of this variable is going to be influenced by the subjectivity of the
clinician who could ask for more details other than what the descriptors give.

Means/Method B is at a low association with the OSRL with a Cramer’s $V$ of .14.
4,296 cases were evaluated within this variable. From table 4.4 it is shown that 375 cases
were rated as “high” (lethal means) and “high” on the OSRL. 818 cases were rated as
“high” on this variable but the OSRL rating was “low”. This is indicative of other factors
being present that could influence possible access to these means. This information
would be gathered by the clinician and the determination would rely on their clinical
judgment. This supports the low association with the OSRL due to the subjectivity
involved in assessing this variable.

For the Means/Method A variable, the Cramer’s $V$ shows a low association at .14
with the OSRL. 5,899 cases were assessed and of those cases, 920 were rated as “high”
(ready or unrestricted access) for the variable but “low” on the OSRL. This is concerning
due to this many cases being rated at a low level on the OSRL even though the means are
available. It is indicative of the subjectivity of the clinicians again using information
gathered during the assessment.
On the Resolved Plan variable, 8,435 cases were assessed and the strength of association with the OSRL was low with a Cramer’s $V$ of .13. 143 cases were rated as “high” (Has plan and preparation) on this variable and also “high” for the OSRL. Of interest is that there are 306 cases that are rated “high”, however they are given a “low” OSRL rating. This variable is one that could be identified to say if it is present, the client is rated at a high risk regardless of other factors in place due to the dangerousness of this factor. The low association of this variable in regards to the OSRL rating points to the use of subjectivity and possibly the consideration of outside factors when providing a rating.

On the Worthlessness variable, 10,916 cases were assessed. This variable had a low association with the OSRL rating with a Cramer’s $V$ of .13. 373 cases were rated as “high” on this variable and “high” on the OSRL. 806 cases were rated as “low” on the variable and “high” on the OSRL. These two ratings support the low strength of association and indicates that clinicians did not consider worthlessness to be an overall indicator of the suicide risk level by itself.

On the Unique Factor variable, 1,641 cases were rated. This variable has a low association (Cramer’s $V = .13$) with the OSRL. This indicates that the unique factors given to the clinician were not heavily relied upon as a determinant of the OSRL. Only 183 cases were rated as “high” on this variable and “high” within the OSRL. There were only 526 cases rated as “high” on this variable but “low” on the OSRL which also indicates that other factors were considered by the clinicians.

Means/Methods C variable had a low strength of association with the OSRL with a Cramer’s $V$ of .13. 4,857 cases were assessed in this variable and 213 were rated as “high” on the variable (low likelihood of rescue) and “high on the OSRL. Also of
importance is that there are 478 cases where the variable is rated as “high” however, the OSRL is rated as “low”. This could be due to the clinician’s clinical judgment or other factors influence if there really is a low likelihood of rescue outside of the client’s report. However, assessing clinicians should be cautioned if this variable is present at a high level, the person may indeed be at a high risk for suicide.

For the Negative View of Self-Competence variable, 14,281 cases were assessed in this variable. This has a Cramer’s $V$ of .11 which is showing a low strength of association. Of the cases, assessed, 300 were rated “high” within the variable and “high” on the OSRL. The majority of the cases assessed were rated within the “low” to “moderate” levels of this variable and “low” on the OSRL. Low numbers in the “high” level of the variable and the OSRL may indicate that possibly in extreme cases having a negative view of self-confidence can influence on the OSRL rating.

The next variable on table 4.4 is Depression. This variable has a Cramer’s $V$ of .10 which is a low strength of association with the OSRL. 11,272 cases were assessed in this variable. Of these cases, 610 were rated “high” on this variable and “high” on the OSRL. The majority of the cases were given a “low” OSRL rating no matter how they were rated within the variable using the rating of “low”, “moderate”, or “high”. This is indicative of the clinicians considering other factors rather than just the presence of depressive symptoms when determining OSRL. This is important to note because not all people with depressive symptoms present with suicide risk. Clinicians should not just rate someone at a high risk for suicide just because depressive symptoms may be present. Discretion should be used when determining how or if depressive symptoms are impacting suicide risk for each individual client. With the low number of cases, in the
“high” level of the OSRL and on the variable and the low strength of association, the idea is supported that clinical judgment was used regarding this variable.

The next variable is Lack or Missing Social Support. The strength of association with the OSRL is low with a Cramer’s $V$ of .10. This variable has 14, 927 cases. Of these cases, 474 were rated as “high” on the variable (intense conflict) and “high” on the OSRL. This indicates that of the high rated cases for this variable where there is intense conflict it is not very likely that this will have an effect the OSRL. This is supported in looking at the “low” rated cases of the OSRL where the majority of the cases fall regardless of their rating within the variable itself.

Poor Interpersonal Problem Solving is the next variable in the table. 14,703 cases were assessed in this variable. The strength of association is low with a Cramer’s $V$ of .09. Of the 14,703 cases, 692 cases were rated as “high” in the variable (little to no ability to problem solve) and “high” on the OSRL. Having little to no problem solving ability can have an effect on suicide risk. From this study, it is indicated that the clinicians did not heavily consider this variable when determining the OSRL.

The next variable is Current Stressors. This variable has 14,626 cases. The strength of association is low with a Cramer’s $V$ of .09. Of the cases rated “high” within the variable (many with high intensity) 811 were also rated “high” on the OSRL. Looking at the “high” rated cases within the variable that were given a “low” rating on the OSRL (2,992), it could indicate that the clients were still able to manage even with this variable being rated “high” and therefore the clinicians did not strongly consider its presence as a big determinant of the OSRL rating.
The next variable is Impulsivity. This variable contains 15,311 cases. Of these cases, 342 were rated as “high” on the variable and “high” on the OSRL. The strength of association is low with a Cramer’s \( V \) of .08. The majority of these cases fall in the “low” and “moderate” levels within the variables and “low” on the OSRL. This supports the low strength of association because it indicates that the clinicians did not strongly consider the presence of impulsivity when determining the OSRL.

Blames Self for Unnecessary Negative Events is the next variable on table 4.4. This variable has 8,667 cases. It shows a low strength of association with the OSRL with a Cramer’s \( V \) of .08. Of these cases only 177 were rated as “high” on the variable and “high” on the OSRL. This supports the low strength of association because it indicates that clinicians were not strongly considering this variable when determining the OSRL. It could also indicate that clients were not endorsing the “high” level of this variable as indicated by the majority of the cases falling into the “low” level of this variable and the OSRL.

The next variable on table 4.4 is Obsessions. This variable contains 13,016 cases. This variable has a Cramer’s \( V \) of .07 which is a low strength of association. 95 cases were rated “high” on this variable and “high” on the OSRL. The majority of the cases were rated as “low” on this variable regardless of if they also rated “high” or “low” on the OSRL. This indicates that the clinicians did not strongly consider this variable when determining the OSRL rating. The cases that fall in the “high” levels of the OSRL or the variable itself could be outliers.

Insomnia is the next variable on the table. 10,732 cases are in this variable. Cramer’s \( V \) is .07 which is a low strength of association. 544 cases were rated as “high”
within the variable and “high” on the OSRL. Though insomnia can have an impact on suicide risk, it does not appear that the clinicians are using this variable to assess the OSRL rating.

Anxiety/Panic is the next variable on table 4.4. 11,123 cases were assessed on this variable. The Cramer’s $V$ is .07 indicating a low strength of association. 421 cases were rated as “high” on this variable and “high” on the OSRL. The majority of the cases fall on the “low” rating of the OSRL. The Anxiety/Panic variable does not appear to be strongly considered when determining the OSRL. This could indicate that other factors are involved and/or clinical judgment is a factor in determining the severity of this symptom.

The next variable is Agitation. There are 14,247 cases assessed on this variable. This variable has a Cramer’s $V$ of .06 which shows a low strength of association. 513 cases were rated “high” on this variable (moderate/severe) and “high” on the OSRL. Agitation does not appear to be strongly considered as indicated by the Cramer’s $V$ and the low number of cases in the “high” level of the variable and the OSRL.

Psychosis is the next variable on the table. This variable contains 13,138 cases. This variable has a Cramer’s $V$ of .06 which shows a low strength of association. Of interest is that the “high” rating of this variable (previously acted on hallucinations or delusions) only has 305 cases that are also rated “high” on the OSRL. 1,013 of the “high” cases on this variable are rated as “low” on the OSRL. This difference could indicate that the variable should be explored more by the clinicians to find out type and severity of symptoms and how they affect the client.

The next variable is Mental Disorder. This variable contains 11,380 cases. The Cramer’s $V$ is .06 which is a low strength of association. 1,055 cases were rated as “high”
on this variable and “high” on the OSRL. As with the other mental disorders, the presence of this variable does not necessarily mean someone is automatically at high risk for suicide. The low association with the OSRL on this variable could be indicative of the clinicians taking this information into consideration and not solely relying on this variable when determining the OSRL.

The next variable in the table is AOD. 9,490 cases were assessed on this variable. The Cramer’s $V$ is .03 which is a low strength of association. Of these variables, 827 were rated as “high” for AOD (dependency) and “high” on the OSRL. 3,621 cases were rated as “high” AOD and “low” OSRL. This is indicative of the clinicians weighing other factors in addition to this variable and not solely relying on the presence of high AOD use to suicide risk level.

The next variable on table 4.4 is Contagion. There are 12,842 cases assessed within this variable. Of these cases, 41 were rated as “high” (recent exposure) on this variable and “high” on the OSRL. Only 184 cases were rated “high” on this variable and “low” on the OSRL. This could indicate that not very many clients were recently exposed to someone else completing suicide which means timing can affect the severity of this variable. It can also be indicative of other factors that may affect how the clients are reacting to having been exposed.

Paranoia is the last variable on the table. 9,359 cases were assessed on this variable. Cramer’s $V$ is .02 which is a low association of strength of this variable with the OSRL. 164 cases were rated “high” on the variable and “high” on the OSRL. The majority of the cases are rated in the “low” level of the variable and the “low” OSRL level. This is supporting the fact that it has a low strength of association with the OSRL.
This is indicative of this variable not being strongly considered by the assessing clinicians when determining the suicide risk level. This could also be due to other factors being considered and weighing on the decision on how to rate this variable.

From table 4.4, it is seen that all of the variables have a low level of association with the OSRL. Low associations with the OSRL indicate that by themselves these variables were not used to determine suicide risk level. In a real world setting clinical judgment and the consideration of other factors are used in the determination of suicide risk. An on-going issue concerning the use of assessment tools that focus on risk factors only is that there are instances where other factors are missed or omitted and therefore could lead to a misclassification of the client as high or low risk based solely on the presence or absence of certain factors. What is significant with the Dynamic Risk subscale is that there are variables that were rated as “high” within the variable and are known to be highly related to suicide risk, however, the OSRL was rated as “low”. This raises a concern because these “low” ratings could mean that some people are actually higher risk than they were assessed. The S-RAM does not include instruction to automatically rate a client as “high” risk if these specific variables are endorsed at a “high” level such as Current Suicidal Plan, Current Suicide Ideation, and Current Suicidal Ideation. These three variables individually had a low strength of correlation with the OSRL even though there were cases where clients scored “high” on one or more of them. These three variables if present should be taken very seriously in the rating of suicide risk level.
5.3.3 Protective Factors Results

The Protective Factor subscale on table 4.5 shows that the individual factors have a low strength of correlation with the OSRL. The table includes the variable, a descriptor if applicable, Cramer’s $V$, the rated OSRL level, the assessed level of the variables, the number of cases on each level, and the overall percentage these cases make up within the OSRL. The variables were ranked by strength of association using Cramer’s $V$. The protective factors will be inversely related to the OSRL so it would be expected that a “high” rating within the protective factor variable would correspond with a “low” OSRL rating.

The first variable on table 4.5 is Life Satisfaction. This variable contains 14,290 cases. Cramer’s $V$ is .04 which is a low association with the OSRL. 4,371 cases were rated as “high” on the variable and “low” on the OSRL which supports the inverse relationship between the protective factor rating and the OSRL rating. There is the low strength of association however, implying that this factor by itself is not strongly considered when determining the OSRL rating. This is supported by also looking at the “low” variable rating and “high” OSRL rating where there are only 348 cases. This is a small number of cases even though the OSRL is “high”.

The next variable on table 4.5 is Frustration Tolerance. This variable has 14,524 cases assessed. The Cramer’s $V$ is .04 indicating a low strength of association with the OSRL. 2,897 cases were rated as “high” on this variable and “low” on the OSRL. The majority of the cases (7,482) were given a “moderate” rating on the variable and a “low” rating on the OSRL also indicating that this variable was not strongly considered when determining OSRL rating.
The next variable is Access to Means. There are 9,927 cases on this variable. Cramer’s $V$ is .04 which is a low strength of association. 4,334 cases were rated “high” on the variable and “low” on the OSRL. This supports the idea that having no access to means can decrease suicide risk but not by itself. 822 cases were rated “high” on this variable and “high” on the OSRL indicating that there are other factors besides no access to means influencing the OSRL rating.

Cultural or Reference Group Values/Beliefs is the next variable on table 4.5. This variable has 13,867 cases assessed. Cramer’s $V$ is .04 which shows a low strength of association. 6,677 cases rated as “high” on this variable were also rated as “low” on the OSRL. 1,222 cases that were rated “high” on this variable and “high” on the OSRL indicating that there may be other factors influencing the OSRL though this variable is present at a high level. Clinicians likely weighted those factors heavily and did not strongly consider the client’s values/cultural beliefs. The setting in which the assessment took place can also influence how much this variable is used in decision making. If the client presents with an immediate suicide risk, then it is less likely that risk was determined using the strength of the client’s belief system because the immediate risk would take precedence over anything else. It would be dangerous for a clinician to dismiss imminent danger because a client endorses high cultural or value beliefs against suicide.

The next variable is Coping Skills. There are 14,766 cases assessed for this variable. The Cramer’s $V$ is .04 which is a low strength of association. 3,762 cases had a “high” rating in the variable and a “low” rating on the OSRL which indicates that this variable was somewhat considered. This is supported in the opposite finding where 659
cases had a “high” rating on this variable and had a “high” rating on the OSRL. This indicates that even though the client may have presented with a high level of coping skills, there are other factors that strongly influenced the OSRL rating.

The next variable is Will to Live, which has 13,813 cases assessed. The Cramer’s $V$ is .04 which is a low strength of association with the OSRL. 1,521 cases were rated as “high” on this variable and “high” on the OSRL which supports the low strength of association. This variable does show that the majority of cases (7,971) were rated as “high” on the variable and “low” on the OSRL showing the inverse relationship between the two.

Therapeutic/Treatment Relationship is the next variable. There are 10,590 cases assessed for this variable. Cramer’s $V$ is .03 which is a low strength of association. 495 cases were rated as “high” on this variable and “high” on the OSRL indicating that even though there is a high treatment relationship, other factors can influence the strength of suicide risk. Of interest is that 4,007 cases were rated as “low” on the variable and “low” on the OSRL. This is where the majority of the cases are rated and it provides support to the low strength of association because it shows that the clinicians may have used clinical judgment and other factors to determine the OSRL rating. though this protective factor was low, the clinicians do not appear to have just placed clients at a high risk because of it.

Religiousness is the next variable within this section. There are 13,847 cases assessed on this variable. Cramer’s $V$ is .03 showing a low strength of association. Of the assessed cases, 5,246 showed a “high” rating on this variable and a “low” rating on the OSRL. Overall on this variable, the majority of the cases were rated “low” on the OSRL.
This could indicate that if religiousness is present, it can be a factor in lowering suicide risk. However, with this variable having a low strength of association, it is also likely that the clinicians used their clinical judgment and considered other factors when rating the OSRL. This is important because it would be dangerous to dismiss the presence of key risk factors just because a person presents with strong religious beliefs against suicide. The assessing clinicians would need to strongly consider other factors to avoid any dangerous mistakes.

The next factor listed on table 4.5 is Felt Responsibility to Children and/or Beloved Pets. This variable has 11,851 cases assessed. Cramer’s $V$ is .03 indicating a low strength of association. 6,256 cases were rated as “high” on this variable and “low” on the OSRL indicating that having this responsibility can be a protective factor, however, by itself, it is not strong enough to determine the OSRL as indicated by its low strength of association and only have 335 cases where the rating is “low” and the OSRL is rated as “high”.

The next variable is Social Supports. There are 14,687 cases assessed. Cramer’s $V$ is .02 showing a low strength of association. The majority of the cases are rated in the “low” level of the OSRL. 6,810 cases are rated as “high” on the variable and “low” on the OSRL. This indicates that the presence of positive social supports can affect the clinician’s assessment of the OSRL rating but not by itself and not very strongly.

The final variable on this table is Reality Testing. There are 15,292 cases assessed. The Cramer’s $V$ is .02 showing a low strength of association. 9,690 cases were rated as “high” on this variable and “low” on the OSRL indicating that this variable was
considered when present but not very strongly as indicated by the low strength of association.

The Protective Factor subscale overall has a low strength of association with the OSRL ratings. There is evidence that the variables within this subscale were considered when the OSRL rating was made but not very strongly. There were instances where the variable was rated as “high” and the cases were still rated as “high” on the OSRL indicating a high risk for suicide. What this means is that the presence of protective factors appear to not minimize the impact of OSRL. This could also be a factor of the setting in which the S-RAM is performed meaning that because of the severity of the risk factors present, the assessing clinicians were likely to respond to the immediate risk versus seeing how those risks are minimized because of the presence of the protective factors.

5.2.3 Risk Formulation Results

The Risk Formulation subscale is where the clinicians can rate the other subscales collectively. This subscales includes three variables in addition to the Static, Dynamic, and Protective subscales. These additional scales include Key Mental Status Factors, Suicidality, and Third Party Information. This subscale also includes the Overall Suicide Risk Level. The clinicians are to rate each of these variables “low”, “moderate”, and “high” and then rate the OSRL. Table 4.6 includes the variable, the descriptor if applicable, the number of persons rated on each variable, Cramer’s $V$, the rated OSRL level, and the assessed level of the variable within the OSRL.

The first variable on table 4.6 is Suicidality. This variable has descriptors (factors) that are related to extremely high risk of suicide. These include intent, strength of
impulse, ideation, history, resolved plan, and preparation. There are 15,315 cases assessed on this variable. Cramer’s $V$ is .91 which shows high association with the OSRL. This is evidenced by 1,978 cases that are rated “high” on this variable rated “high” on the OSRL; as well as the inverse where 12,559 cases rated “low” on this variable and “low” on the OSRL. The strength of the correlation and the number of cases within the high and low categories of this variable indicates that the clinicians used the overall rating on this subscale when deciding on the OSRL rating. A question is raised of what happened with cases where the variable was rated as “high” but the OSRL is rated as “low”. The table shows 16 of these cases. These cases could have been made in error, or there were other pressing factors that the clinicians used to determine the OSRL.

Dynamic Risk Factor is the next variable. There are 15,315 cases assessed on this variable. The Cramer’s $V$ is .84 which is a high strength of association. 1,720 cases are rated “high” on the variable and “high” on the OSRL. The opposite rating which is 11,325 cases were rated at a “low” level on the variable and “low” on the OSRL. This indicates that if the Dynamic Risk factors subscale was rated as low, the clients were less likely to be given a “high” rating on the OSRL. There were only 83 cases where the OSRL was rated “high” and the variable was rated as “low”.

Key Mental Status Factors is the next variable on the table. There are 15,315 cases assessed on this variable. Descriptors include depression, agitation, impulsivity, and hopelessness. Cramer’s $V$ is .71 showing a high strength of association. 2,130 cases show a “high” rating on the variable and a “high” rating on the OSRL. The table also shows that 7,602 cases are scored “low” on the variable and “low” on the OSRL. These ratings
support that the clinicians strongly considered these variables within the subscale when determining the OSRL level.

Static Risk Factors is the next variable on the table. 15,315 cases were assessed on this variable. Cramer’s $V$ is .55 showing a moderate strength of association. 979 cases were rated as “high” on the variable and “high” on the OSRL rating. The majority of the cases (9,485) were rated “low” on the variable and “low” on the OSRL. This supports the idea that the clinicians strongly considered the rating on this subscale when rating the OSRL.

Third Party Info was the next variable on the table. 15,315 cases were assessed on this variable. Cramer’s $V$ is .54 indicating a moderate strength of association. 4,113 cases were rated as “low” on this variable and “low” on the OSRL. 48 cases were rated as “low” on the variable and “high” on the OSRL. This supports the idea that the clinicians utilized other factors when rating the OSRL, however, third party information was strongly considered.

Protective Factors is the final variable on the table. 15,315 cases were assessed. Cramers’ $V$ is .28 showing a low strength of association. 3,053 cases were assessed as “low” on the variable and “low” on the OSRL. 5,903 cases were rated as “high” on the variable and “low” on the OSRL. This does indicate that the Protective Factor subscale was considered but only slightly when determining the OSRL. With the strength of correlation for the suicidality subscale, it is obvious that the clinicians were definitely paying more attention to the pressing risk factors and less attention to the protective factors. This again could be due to setting in which the S-RAM was completed and the clinical judgment of the clinicians.
5.2.4 Conclusion

The first three subscales of the S-RAM (static, dynamic, and protective) show low strengths of correlation with the OSRL rating. This indicates that the clinicians are not determining the OSRL level based solely on these individual variables. The Risk Formulation subscale shows high strength of correlation with the OSRL. It is made up of the clinicians’ collective ratings of the other subscales. The high to moderate correlations within this subscale indicate that the clinicians are actually using multiple factors from each subscale, but primarily Suicidality to determine the level of the OSRL. Of interest is that the Protective Factor subscale continued to show a low strength of correlation with the OSRL. This could be due to the setting in which the S-RAM is given. Because it is completed within an emergency department with clients that are in crisis, it is possible that protective factors are not often considered as seen in how this subscale is rated individually and collectively in the Risk Formulation section.

5.3 Recommendations for Future Research

This study was to attempt to continue to understand which factors have a stronger effect on suicide risk level. Future research should focus on creating a tool from the areas that continue to show evidence of high association with suicide completion. Demographic and historical data are important as well and from the analysis of the S-RAM and its variables, we can see that it is the more immediate risks, such as Suicidal Ideation, Suicidal, Plan, Hopelessness, Access to Means with very little social support, that clinicians tend to use when determining suicide risk. An assessment tool that can focus on these areas is obviously needed. Also, continued practice in understanding various groups of clients and how particular stressors/events can affect their well-being is needed.
Having a framework for suicide risk assessment is also needed for consistency in evaluation. A set structure to include questions, timeframes, and severity/strength of endorsed items is a valuable asset to have.

**5.4 Recommendations for Practitioners**

Practitioners should be familiar with both risk and protective factors. Especially those factors that are unique to specific populations. Clinical judgment is one of the strongest factors to completing risk assessments as assessment tools cannot always allow for too much individualization. Practitioners utilizing the S-RAM should be aware that a lot of the significance and weight given to the variables was in the Risk Factor subscale. It could indicate that not too much consideration was given to the Protective Factors or Static Risk Factors. However, this is consistent with the findings that immediate risks will take precedence over the other variables on the assessment tool. In using the S-RAM or similar tools, it also needs to be noted that should a client present with imminent harm to self, he or she should be triaged right away. The S-RAM does not currently make that distinction and it is left to the judgment of the assessing clinician.

**5.5 Recommendations for Improving the Study**

It is suggested that if crucial variables are marked as ‘high’ the patient is automatically transitioned to a high level of care. This includes suicidal ideation, hallucinations, etc. There needs to be instructions on the actual S-RAM form that directs the clinicians should specific variables be endorsed. As it is set up now, the S-RAM does not provide instructions on the form for this situation.

The variables and subscales of the S-RAM should be numbered. This will reduce the level of reliance on the subjectivity of the assessing clinician and provide consistency
that is lacking. By numbering these items, scores can be obtained. The S-RAM is modeled after the SAVRY but only in structure. The SAVRY does contain scores and therefore other statistical analyses can be run besides correlation and descriptive data.

Reducing the number of variables to have to choose from may help minimize confusion over what to pick and the severity rating. From the cross tabulations, key variables stick out. These variables can be used to create a shorter, more user-friendly version of the S-RAM that may help improve specificity and show strength in correlations. The majority of the correlations in the current S-RAM show low or moderate associations at best.

Consistency is how the variables are rated is also important. The Static Risk Factor subscale is the only subscale without a “low”, “moderate”, or “high” rating. Instead, it uses “present”, “absent”, or “did not evaluate”. This can become confusing when completing the S-RAM because for items like gender or age, you have “present” or “absent” as the only option and then it forces the use of the descriptor to decide what to do. This also leads to inconsistency in how the data is analyzed. Consistency is needed in rating and/or scoring the data in order to make a more solid determination of if this assessment tool is actually measuring what it says it will measure and if it is useful.

Consistency is needed in how the data is presented. The S-RAM includes variables such as “factors unique to the person”. This item does not contain a descriptor and is completely subjective, however, there is no way to formally associate it with the OSRL. Structurally, in the Risk Formulation subscale, there are no instructions on how to collectively gather the data from the first subscales to make an overall determination of risk level for each of the subscales and subsequently the Overall Suicide Risk Level.
The OSRL is also placed under the Risk Formulation Subscale and should actually be separated so that it is not to be confused with the other factors. The Risk Formulation Subscale also includes new variables such as Suicidality and Key Mental Status Factors that appear to pull from the earlier subscales anyway regardless of how these variables were scored earlier. Overall, the S-RAM needs to show more structural consistency and a way to be quantitatively measured to help improve accuracy of information.

5.6 Conclusions

The S-RAM is capable of distinguishing those at high risk for suicide, however, not as a stand-alone instrument. The subjectivity needed to complete the S-RAM is too great and leads to inconsistency in rating and may be too sensitive and capture people that are not necessarily at a high risk for suicide. The associations between the key factor variables and the OSRL were weak individually until they were considered within the Risk Formulation subscale, which also indicates that the subjectivity of the clinicians weighed heavily on these decisions.

The S-RAM does provide some insight into which variables have the most influence on the OSRL rating and it is these variables that can be used to help make a more well-informed decision when it comes to assessing for suicide. One of the important items to note is that the S-RAM incorporates the protective factors, which did show low strength of correlations, but did appear to be considered when making decisions regarding suicide risk level. Moving forward, with some important changes and improvements, this assessment tool has the potential to be very valuable in determining the suicide risk level of clients through the use of key variables for risk and protection.
against suicide as well as helping to create a profile of those that might be at a higher risk.
Appendix A: IRB APPROVAL LETTER
May 5, 1984

Applicant Number: 3749/84

Board: BEEF

Problem Title: \textit{The Impact of \textit{BEEF} on \textit{BEEF}}

Target Audience: General

Purpose: To study the impact of \textit{BEEF} on \textit{BEEF}

Date of Initial Approval: May 5, 1984

Expected Duration: 1 year

This proposal is for the purpose of investigating the impact of \textit{BEEF} on \textit{BEEF}. The study will be conducted using statistical methods and will involve a sample of 100 participants. The results will be used to inform future policy decisions regarding \textit{BEEF}.

In conclusion, the impact of \textit{BEEF} on \textit{BEEF} is a critical area that requires further investigation. This study will contribute valuable insights to the field.

Michael Smith

Researcher

Department of Social Sciences and Behavioral Science
Appendix B: Suicide Risk Assessment Matrix
### Static Risk Factors

- Male (more likely to complete, female more likely to attempt)
- Age (highest risk: 15-25, age 65+)
- Race/ethnicity (Hispanic, African American, Native American, Asian)
- Past suicide attempts, multiple suicide attempts, and any suicide attempt with a high level of risk
- History of serious mental illness

### Dynamic Risk Factors

- Low
- Moderate
- High

<table>
<thead>
<tr>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Family history of suicide</td>
<td>5. Family history of suicide</td>
<td>5. Family history of suicide</td>
</tr>
<tr>
<td>7. Medical illness</td>
<td>7. Medical illness</td>
<td>7. Medical illness</td>
</tr>
<tr>
<td>8. Historical trauma</td>
<td>8. Historical trauma</td>
<td>8. Historical trauma</td>
</tr>
</tbody>
</table>

### Note

- This is a Suicide Risk Assessment Matrix for Adults.
- The assessment includes both static and dynamic risk factors.
- Each level (Low, Moderate, High) has specific criteria for each risk factor.
- The purpose is to identify individuals at risk for suicide and determine the level of intervention needed.
<table>
<thead>
<tr>
<th>Protective Factors</th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will to Live</td>
<td>No access to means</td>
<td>Disturbs the formulation plans</td>
<td>Ready or uninterested in progress</td>
</tr>
<tr>
<td>Support available and utilized</td>
<td>Support available but not utilized</td>
<td>Non-support</td>
<td>Support available but not utilized</td>
</tr>
<tr>
<td>Therapeutic/Residential Relationship</td>
<td>Relationship strong/engaged</td>
<td>Presence but not well engaged</td>
<td>Not available/engaged</td>
</tr>
<tr>
<td>Cultural or Reference Group View/Belief</td>
<td>Artistic suicide stated negatively. Treatment interest negatively</td>
<td>Outlook varies between positive and negative</td>
<td>Positive suicide thought positively. Treatment interest negatively</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>Optimistic outlook.</td>
<td>Outlook varies between positive and negative</td>
<td>Positive suicide thought positively. Treatment interest negatively</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Religious beliefs associated with distress, low preoccupations, no</td>
<td>Religious beliefs associated with distress, preoccupations, no</td>
<td>Religious beliefs associated with distress, preoccupations, no</td>
</tr>
<tr>
<td></td>
<td>inductions, and appears to improve functioning and feelings of well-being</td>
<td>inductions, and appears to improve functioning and feelings of well-being</td>
<td>inductions, and appears to improve functioning and feelings of well-being</td>
</tr>
<tr>
<td>Coping Skills</td>
<td>Has several healthy skills and a sense of mastery</td>
<td>May or poorly developed</td>
<td>Having a unhealthy dysfunctional or destructive</td>
</tr>
<tr>
<td>Resilience Tolerance</td>
<td>Consistently manages reaction to frustration in a constructive way</td>
<td>Inconsistent manages reaction to frustration in a constructive way</td>
<td>Seldom or never manages reaction to frustration in a constructive way</td>
</tr>
<tr>
<td>Risk factors for substance use and/or behavior patterns</td>
<td>Sustaining</td>
<td>Risk or none</td>
<td>Risk or none</td>
</tr>
<tr>
<td>Safety, Testing Ability</td>
<td>Instruct</td>
<td>Requires external prompting</td>
<td>Requires external prompting</td>
</tr>
<tr>
<td>Factors unique to the person based on their history.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinician Assessment of Reliability</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Clinician Self Report</td>
<td>Under-reporting or Minimizing</td>
<td>Accurate</td>
<td>Over-reporting or Exaggerating</td>
</tr>
<tr>
<td>3rd Party Report</td>
<td>Under-reporting or Minimizing</td>
<td>Accurate</td>
<td>Over-reporting or Exaggerating</td>
</tr>
<tr>
<td>Risk Associated with:</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
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<td>----------------------------</td>
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<tr>
<td>Static Risk Factors</td>
<td></td>
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<tr>
<td>Dynamic Risk Factors</td>
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<tr>
<td>Protective Factors</td>
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<tr>
<td>Key Mental Status Factors</td>
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<tr>
<td>Suicidality (immediate</td>
<td></td>
<td></td>
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<tr>
<td>Risk Factors, risk of</td>
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<tr>
<td>Suicide attempts,</td>
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<td></td>
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<tr>
<td>Suicidal ideation,</td>
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<tr>
<td>History of suicide</td>
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<tr>
<td>Third Party Information</td>
<td></td>
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<td></td>
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<tr>
<td>Overall Suicide Risk Level</td>
<td>NAT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Safety/Risk Management Plan:

- ROIs obtained for:
- With authorization, family members/significant others informed about plan:
- If appropriate, client informed about dangers of alcohol & drugs:
- If appropriate, family members/significant others informed about dangers of alcohol & drugs:
- Weapon removal verified: (by whom):
- Other means removed/restricted: (by whom):
- Other means removal/restriction verified: (by whom):
- Close monitoring by family/friends who are deemed to be reliable:
- Concrete, constructive ways to cope with painful or stressful emotions:
- Concrete, constructive ways to cope with known triggers:
- Ways in which key dynamic risk factors will be managed or reduced:
- Ways in which key protective factors will be enhanced:
- Other:
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