HEALTH RISK BEHAVIORS: AN INVESTIGATION OF SEXUAL RISK AND NON-SUICIDAL SELF INJURY

A thesis submitted in partial fulfillment of the requirements
For the degree of Master's of Arts in Psychology
General-Experimental

By

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May 2013
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ABSTRACT

HEALTH RISK BEHAVIORS: AN INVESTIGATION OF SEXUAL RISK AND NON-SUICIDAL SELF INJURY

By

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Master's of Arts in Psychology

General-Experimental

High prevalence rates of sexually risky behaviors (SRBs) and non-suicidal self injury (NSSI) among adolescents and young adults present a need for prevention and intervention efforts to minimize these health-risky behaviors. However, there is a lack of empirical research findings on the possible relationships among these behaviors outside of clinical samples. To contribute to the scarce literature in this area, the present study investigated the relationship between young women’s SRBs and NSSI, along with potential predicting psychosocial factors of these behaviors. The sample included female participants from the general population (recruited through social media, email lists, etc.) as well as from the CSUN Human Subject pool. A battery of self-report measures was administered through an online survey that included inventories to assess the variables of interest as well as demographic information. An original proposed model was analyzed through path analysis to test its goodness of fit. The findings supported some but not all of the hypotheses. The final model is strong and has several significant paths that have clinical salience. Recommendations for future research and implications are discussed.
Chapter I: Introduction

Human behavior plays a central role in the maintenance of health and the prevention of disease as well as an individual’s psychological well-being. *Health-risk behavior* can be defined as any activity undertaken by people with a frequency or intensity that increases risk of disease or injury (Steptoe & Wardle, 2004). During the lifetime development, individuals may engage in a variety of risky or self-harmful behaviors that can place their physical and mental health in jeopardy. This is especially true during the tumultuous transitional periods of adolescence and young adulthood.

Among these various health-risky and harmful behaviors, sexual risk and non-suicidal self injury are two behaviors of particular concern during an individual’s life course. Health risk and harmful behaviors such as sexual risk and non-suicidal self injury as well as the associated mental health outcomes are delicate topics within the field of psychology that are in need of special attention, particularly within ethnic minority populations. In this regard, research has shown that the Latino/a population is especially vulnerable to the detrimental outcomes of sexual risk (Centers for Disease Control and Prevention, 2008a). In general, sexually risky behaviors are pervasively found within adolescents and young adults (Centers for Disease Control and Prevention, 2008b; Centers for Disease Control and Prevention, 2011a), particularly among ethnic minority populations as previously mentioned.

Health-risk behaviors such as sexual risk and non-suicidal self injury contribute to the leading causes of morbidity, mortality, and social problems among adolescents and young adults (Centers for Disease Control and Prevention, 2012). People who engage in sexually risky behaviors are at an increased risk of the negative health outcomes
associated with such behaviors, such as STDs, while those who engage in non-suicidal self injury present an obvious danger of harming themselves. Furthermore, reports of sexually risky and non-suicidal self injurious behaviors are continuously published revealing concerning trends of these two behaviors among adolescents and young adults. The high prevalence rates of sexually risky behaviors and non-suicidal self injury among adolescents and young adults underscore the need for further understanding as well as a need in the prevention and intervention of these risky behaviors. More research such as the thesis work proposed herein is certainly needed in this area.

Although accounts of rates in regards to growing trends in sexually risky and non-suicidal self injury are continuously reported, there appears to be a lack of investigation of these behaviors outside of clinical samples. This is especially important for preventive purposes because, in order to contribute to the reduction of these risky and self-harmful behaviors, researchers must first investigate the occurrence of these incidences, the factors that may contribute to the rate of incidence, the possibility of a relationship between these behaviors, as well as group differences (i.e., among racial/ethnic groups and gender) in the behaviors. Furthermore, such studies should take place within non-clinical samples via targeting the community-dwelling general populations, due to the prevalence of these behaviors beyond clinical populations.

Research focusing on these behaviors and their mental health outcomes among minorities has been limited thus far. Through this study, I attempted to address this gap within the literature as well as bring forth a contribution of innovative research with a culture-relevant perspective of minority individuals. Due to the overwhelming lack of
research concerning this topic, particularly regarding these two behaviors together, it is important to undertake this investigation in a systematic approach.

In order to begin addressing this gap in research, I limited the focus of the present investigation of these behaviors among Latin-American versus all other populations outside of clinical samples. By concentrating on only one ethnic minority group as compared to the rest of the populations, I intended to ensure that my effort to understand these behaviors was thorough. Primarily non-suicidal self injury has been overlooked within research as a concerning behavior outside of clinical samples, therefore, by concentrating on the general population I planned on gaining a more holistic understanding of these behaviors. Thus, Latin-American respondents versus all other ethnic backgrounds, outside of clinical samples, were chosen to be the main population of interest in this study. Furthermore, in order to provide a clearer understanding of these behaviors within each gender, I targeted women only in this study; this decision allows for stronger results and implications.

**Significance of the Present Study.**

I planned for the results of this study to offer salient information for health educators, counselors, and policy makers interested in reducing the incidence of health risk behaviors and the associated detrimental outcomes faced among the Latina adolescent and young adult community as well as the other ethnic communities. In particular, the findings of the present study may have significant impact for the reduction of and intervention in the occurrence of sexual risk and non-suicidal self injury. Furthermore, in this study, I have addressed a gap within the research literature concerning the topics of sexual risk and non-suicidal self injury conjointly, especially the
lack of attention given to these health risk behaviors among the non-clinical Latina community.

**Research Questions.**

The following are the research questions that guided the construction of this study:

1. Is there a relationship between sexual risk and non-suicidal self injury among Latina adolescents and young adults?
2. What are the predicting (i.e., protective or risk) factors of sexual risk and non-suicidal self injury that contribute to these behaviors?
3. Are there differences among Latina adolescents and young adults in comparison to all other racial/ethnic groups concerning these two health risk behaviors?

I anticipated that the presence of a relationship between sexually risky behaviors and non-suicidal self injury would be dependent on the severity of these behaviors, with a higher severity of these health risk behaviors driving a stronger relationship. It was also anticipated that an exploration into the predicting factors at play in the contribution to the link of risky and self-harmful behaviors under investigation in this study would reveal mediating and overlapping variables of each of the two behaviors present in the patterns of occurrence. In other words, it was expected that these findings would demonstrate that the predictors of each health risk behavior (i.e., sexual risk and non-suicidal self injury) would reveal predictors that are shared between the two factors. Additionally, it was anticipated that differing trends of the behaviors among Latinas in comparison to all other racial/ethnic groups would be found.
Chapter II: Literature Review

Sexual Risk Behaviors.

For many years, sexual risk behaviors (SRBs) have been a major concern within the health community. The United States has been found to have one of the highest prevalence rates of sexually transmitted diseases (STDs) among Western industrialized countries (Institute of Medicine, 1997). Persons who engage in sexually risky behaviors are at an increased risk for unwanted pregnancy and STDs including human immune deficiency virus (HIV). Adolescents and young adults are particularly at an increased risk for the unintended negative health outcomes associated with sexually risky behaviors. The Centers for Disease Control and Prevention (CDC, 2008b) estimates that those between the ages of 15 and 24 account for about one-half of the new STDs diagnosed every year in spite of the fact that this age group represents only about one-quarter of the sexually active population (Weinstock, Berman, & Cates Jr., 2004).

Wildsmith, Schelar, Peterson, & Manlove (2010) conducted an investigation on the prevalence of sexually transmitted diseases among young adults as well as their risk-taking behaviors and found that 15% of young adults between the ages of 18 and 26 reported having had an STD within a one-year time frame, with that proportion varying by gender, race/ethnicity, and relationship status. Moreover, it was shown that many young adults continue to engage in the risk-taking behaviors, placing them at risk of contracting an STD. Most surprising was that young adults demonstrated a reluctance to acknowledge or recognize their own risk for contracting an STD. In a separate study, Malhotra (2008) reported that an estimated 19 million new cases of sexually transmitted
infections (STI) occur every year, half of which are reported to occur in young people between the ages of 15 to 24.

Much of the literature on sexual risk has identified the various sexual behaviors that place individuals at risk for the detrimental health outcome of contracting a sexually transmitted disease. Among these sexually risky behaviors many variables have been identified at various levels, including at the individual level (biological, psychological, and behavioral), at the familial level, as well as outside the family, i.e., at the community and societal level (peers, schools, neighborhoods; Wildsmith et al., 2010). Due to the vast number of behaviors identified as sexually risky behaviors, I targeted behaviors at the individual level. To specify, the individual-level behaviors, which include multiple sexual partners, sex under the influence of mind-altering substances (i.e., alcohol and drugs), early initiation of sexual intercourse, as well as condom use practices (including attitudes toward condom use, condom use self-efficacy, inconsistent condom use, and unprotected sex), and other behaviors, were used as the defining dimensions of sexually risky behaviors.

**Non-Suicidal Self Injury.**

There have been various terms used throughout the research literature in reference to self injurious behaviors without suicidal intention. Included within these terms have been “self-harm”, “self-injury”, “deliberate self harm”, and “self mutilation”. However, I placed the focus of this study on behaviors that are termed as “non-suicidal self injury”. Non-suicidal self injury (NSSI) most commonly refers to the direct, deliberate destruction or alteration of one’s own body tissue without suicidal intent (Pattison & Kahan, 1983), most commonly for purposes that are not socially sanctioned. An important distinction
between NSSI and other forms of self-harm is within the reported lack of suicidal intention. Heath, Toste, Nedecheva, & Charlebois (2008) differentiate NSSI as a subset of a larger range of self-harming behaviors, in which self-harm is a broader construct than NSSI, and, furthermore, while NSSI may be related to other self-harmful behaviors, it is a distinct and separate behavior from suicide attempts. Therefore, it is imperative that suicidality and suicidal behaviors be differentiated from NSSI.

Although non-suicidal self injury has been researched for several decades in the past, research efforts have mainly focused on clinical samples, particularly among youths with developmental disabilities or psychosis (e.g., Durand & Crimmins, 1988; Iwata et al., 1994; Prinstein, 2008). A potential issue with focusing on only clinical populations is the possibility of inflated estimates regarding the prevalence of deliberate self-harm, as well as of the association between self-harm and psychiatric disorder, since these populations typically have serious psychopathology (Klonsky, Oltmanns, & Turkheimer, 2003). Only in recent years have research efforts shifted to focus on general and community populations rather than on clinical samples. I made sure to target general/non-clinical, community-dwelling populations in order to provide generalizable results as well as a clearer understanding of the factors that predict such behaviors among individuals who, to my knowledge, are not receiving therapy or pharmacological treatment for their problems.

Prevalence rates of NSSI range between 17% and 38% among college students (e.g., Gratz, Conrad, & Roemer, 2002; Whitlock, Eckenrode, & Silverman, 2006). In fact, in a separate study, Gratz (2001) found that as many as 35% of college students have performed at least one type of self harm in their lifetime. Among adolescents, prevalence
rates have been found to range between 12% and 21% (Favazza, DeRosear, & Conterio, 1989; Ross & Heath, 2002; Whitlock et al., 2006; Zoroglu et al., 2003). These high variations of prevalence rates among young populations (between early adolescence and young adulthood), demonstrate a need to gain a more accurate understanding of these behaviors among these age groups within the general population outside of clinical samples.

Non-suicidal self injurious behaviors have been shown to be linked with various aspects of sexuality, ranging from sexual orientation (Sornberger, Smith, Toste, & Heath, 2013) to sexual abuse (e.g., Gratz et al., 2002; Zoroglu et al., 2003) and other sexual-related variables. Although sexually risky behaviors and non-suicidal self injury have been shown to have similarly high rates of prevalence among the same populations (adolescents and young adults), there is a prominent lack of research investigating the possible relationship and co-occurrence of these behaviors among adolescents and young adults within the general population. In a rare study, Brown, Houck, Hadley, & Lescano (2005), investigated the relationship between sexual risk and self-cutting among adolescents in intensive psychiatric treatment. The authors found that, among their sample, those who self-cut were three and a half times more likely to report infrequent condom use, which is an indicator of sexual risk, in comparison to those adolescents who did not self-cut. However, this study was conducted on a clinical sample; once again, the possibility of inflated results is foremost a concern regarding these findings. Additionally, Wichstrøm (2009) identified early sexual activity debut [before the age of 15] as a common factor within NSSI. Although early onset of sex is a factor of sexual risk, the author did not further investigate the relationship of other sexual risk behavioral factors
to NSSI. In the present study, I aimed to address this need within the literature through the use of non-clinical samples in order to investigate the relationship between sexual risk and non-suicidal self injury.

**Health Risk Behaviors among Latinos/as and the Latino Paradox.**

Various socio-demographic groups have been found to be at higher risk for associated negative outcomes of health-risk behaviors. For example, it has been reported that women and younger individuals appear at higher risk for NSSI. People between the ages of 18 to 34 have been reported to be at the highest risk for deliberate self harm, with a female-to-male ratio estimated at eight to one for adolescents and at 1.6 to 1 for the twenty to fifty age group (Hooley, 2008 as cited in Latimer, Covic, Cumming, & Tennant, 2009). As certain groups across levels of socio-demographic characteristics are often exposed to different experiences of such factors as trauma, mental illness, substance use, etc. it is possible that socio-demographic variables act as protective or risk factors for the two outcome behaviors of interest.

Although extensive literature has examined the interplay between various socio-demographic factors and health risk behaviors, the health risk behavior of sexual risk and the associated mental health outcomes are in need of research within the ethnic minority population of Latinos/as. The scarcity of research on mental health disparities among Latinos suggests that the impact of health risk behaviors on this population’s mental health has not been thoroughly examined. This dearth is particularly disturbing considering that Latinas have been identified to be among the fastest-growing subgroups at risk for HIV infection and, in 1991, AIDS was the third leading cause of death among Latinas between 25 and 44 years of age. Based on these perturbing statistics, research,
such as this study, can make a positive impact in the reduction of these adverse incidences (Newcomb et al., 1998; Zambrana, Cornelius, Boykin, & Lopez, 2004).

However, contradictory to the reports of sexual risk prevalence among Latinas, the Hispanic, or Latino Paradox, refers to epidemiological finding that Hispanic or Latin-Americans tend to have health outcomes that paradoxically are comparable to, or in some cases better than, their U.S. white counterparts in spite of the their lower socio-economic status, which is usually associated with poorer health and higher death rates (Franzini, Ribble, & Keddie, 2001; Markides, & Coreil, 1986; Smith & Bradshaw, 2006). In light of the Hispanic/Latino Paradox, research is needed in order to further investigate whether this health paradox is present within the specific health risk behaviors under investigation within this study. Consequently, the findings of this study may provide support or contradictory evidence against the stated paradox. In other words, despite research findings indicating the high prevalence of sexual risk among Latinas, it is quite possible that this study will find an inverse relationship between sexual risk and Latina ethnicity status.

Although research has greatly investigated suicidality and suicidal ideation among Latinas, little attention has been given to non-suicidal injurious behaviors among this group. In a rare attempt to address this gap within the literature, Croyle (2007) examined self-reported self-harm among Hispanics (predominantly Mexican-Americans) in comparison to non-Hispanic White students. While the author did not find a significant difference between Hispanic and non-Hispanic rates and types of self-harm, their results indicated that a noticeable proportion of Hispanic students have engaged in at least one
type of self-harmful behavior; within the sample of this study, 27% of Hispanic students indicated having engaged in at least one self-harmful behavior.

The current scarcity of studies regarding non-suicidal self harm among this population demonstrates an unmet research need to investigate these behaviors, particularly the relationship of these two health-risk behaviors, among this specific population. However, some literature shows that sexual risk behaviors among Latinos/as are predominantly high and of great concern within the related health community. In the present study, I attempted to address the gap in the literature regarding non-suicidal self harm among Latinas by focusing on the rate of incidence concerning both these behaviors (i.e., sexual risk and non-suicidal self injury) among Latinas in comparison to other ethnicities.

**Depression.**

Populations suffering from mental illness have been found to exhibit high rates of STD prevalence, suggesting a potential relationship between mental health and sexually risky behavior (Brown, Danovsky, Lourie, DiClemente, & Ponton, 1997). A range of studies have found that depression is associated with sexual risk among various groups (e.g., Jaffe, Shoptaw, Stein, Reback, & Rotheram-Fuller, 2007; Mazzaferro, Murray, Ness, Bass, Tyus, & Cook, 2006; Morrill, Kasten, Urato, & Larson, 2001). Khan et al. (2009) conducted interviews among White and Black youth in the United States to assess the association between depression, sexual risk, and sexually transmitted infections (STI). The authors found that depression was associated with multiple partners without the use of condoms (i.e., factors of sexual risk). In another study, Milhausen, Yarben, & Crosby (2003) discovered that, among female high school students, depression was associated
with early onset of sexual intercourse, multiple sexual partners, and non-condom use as well as with drug/alcohol use during the last sexual encounter. Conjointly, the findings of such studies have demonstrated that depression is consistently related to factors of sexual risk (i.e., behaviors that place individuals at risk for the negative health outcomes associated with sexual risk).

Theoretically, adolescent youths may be particularly vulnerable to the link between depression and sexual risk behaviors as adolescence is often the time of onset of both mental illness as well as sexual activity. In fact, it has been suggested that adolescents who experience depressive symptomatology may further experience a lack of self-esteem, self-efficacy, and assertiveness that would aid them in negotiating safer sex with their partners (e.g., Kowaleski-Jones & Mott, 1998; Spear & Kulbok, 2001). Additionally, the nature of sexual encounters experienced among youth as well as the potential negative health outcomes of sex may further exacerbate existing depressive symptoms among this population (DiClemente, Wingood, Crosby, et al., 2001; Ramrakha, et al., 2000), which may suggest a nonlinear relationship between depression and sexual risk behaviors among youth. However, such a possibility has yet to be investigated in research.

Individuals who engage in self-harmful behaviors tend to exhibit certain psychological characteristics, perhaps the most prominent being negative emotionality. Concerning the association between depression and self harm, researchers have reported a highly consistent relationship between the two variables (e.g., Pattison & Kahan, 1983; Skegg, 2005). Moreover, this correlation is still found among those who engage in non-suicidal self harm. For example, Klonsky et al. (2003) found within their study that self-
harmers reported more symptoms of depression in comparison to participants who had no history of deliberate self harm. Furthermore, in a literature review conducted by Gratz (2003) on the emotion regulating function of self-harm behavior, the author found that self-harm functioned to relieve feelings of depression.

Studies have attempted to understand the underlying reasons regarding the consistent positive relationship between depression and self-harmful behaviors such as NSSI. One manner in which studies have investigated this link is through the examination of the functions of NSSI behaviors. In a literature review regarding the function of deliberate self-harm, Klonsky (2007) reported that the findings of numerous studies (i.e., 18) provide support for an affect-regulation function of NSSI. In a study conducted using structured interviews to assess the consequences, affective states, and reasons associated with self-injury, specifically NSSI, among 39 young adults, Klonsky (2009) found that self-injurious behaviors were associated with improvements in affect (i.e., frustration and sadness vs. relief and calm) after self-injury. Research, therefore, appears to support the notion that NSSI is often used as a coping mechanism for affective states in which NSSI behaviors provide temporary relief of intense feelings such as depression. Such findings may have strong implications for the understanding and intervention of such behaviors. Moreover, depressive symptomatology is commonly comorbid with other factors, such as mental illness (i.e., borderline personality disorder) or trauma, which can further drive the link between depression and NSSI.

**Trauma.**

Having a history of traumatic experiences has been identified to be a risk factor of sexual risk. Specifically, childhood abuse has been found to be predictive of sexually
risky behaviors among various groups (Hillis, Anda, Felitti, & Marchbanks, 2001; Koenig, O’Leary, Doll, & Pequenat, 2003; Senn, Carey, Vanable, Coury-Doniger, & Urban, 2006). Although most literature has paid particular attention to childhood abuse and its link to sexual risk, there is also a found link between a general history of trauma and sexual risk. In a study investigating the history of abuse among HIV-positive and HIV-negative women, Wyatt et al. (2002) reported that HIV-positive women had more severe histories of abuse than their HIV-negative counterparts. Another study examining the links between lifetime experiences of trauma, trauma-related symptoms, depressive symptoms, and sexual health risk behaviors within a sample of 40 African American young men who have sex with men (YMSM), the authors found that trauma-related symptoms were associated with increased depressive symptoms and sexual health risk behaviors (e.g., condom use; Radcliffe, Beidas, Hawkins, & Doty, 2010).

As depression is a common experience following trauma, it is not surprising that individuals who experience a traumatic event may engage in sexual risk behaviors. In fact, the link between trauma and sexual risk behavior may indicate sexual risk as a coping style of traumatic experiences. One study's findings indicate that treatment addressing coping skills and trauma can reduce HIV risk of unprotected sexual encounters (Hien et al., 2010).

Conflicting reports regarding the relationship between trauma and self-harm have led to an unclear understanding of the link between these two factors. Gratz et al. (2002) have discussed this link when examining the risk factors for deliberate self-harm among college students by identifying various dimensions of trauma (i.e., emotional neglect and sexual abuse) as predictors of deliberate self-harm. However, when Klonsky and Moyer
(2008) conducted a meta-analysis to determine the magnitude of the association between the specific traumatic event of childhood sexual abuse and self-injurious behavior, they found the relationship between these two factors to be relatively small. Furthermore, the authors also postulated that childhood sexual abuse and deliberate self-harm are modestly related because they are correlated with the same psychiatric risk factors. It is possible that trauma, specifically childhood sexual abuse, may contribute to the initiation of NSSI through mediating factors such as depression, which has been shown in previous research to be related to both trauma and NSSI. In light of the aforementioned conflicting research reports, more studies are certainly needed to clarify the association between trauma and NSSI.

**Substance Use.**

Sexual risk has been highly associated with binge drinking (Hutton, H. E., McCaul, M. E., Santora, P. B., & Erbelding, E. J. (2008); moreover, it has been found to have an increased likelihood of occurring under drug and alcohol use (Desiderato & Crawford, 1995; Taylor-Seehafer & Rew, 2000). For example, Tapert, Aarons, Sedlar, and Brown (2001) discovered that factors indicative of sexual risk, including early age of onset to sexual activity, multiple sexual partners, inconsistent use of condoms, more sexually transmitted diseases (STDs), and greater prevalence of human immunodeficiency virus testing, were reported by youth identified as having substance abuse problems.

Furthermore, one research study indicated that physical and/or sexual violence among adolescent females appears to be associated with increased of substance use as well as sexual risk behaviors among other health risk behaviors (Silverman, Raj, Mucci,
& Hathaway, 2001). This co-occurring link of substance use and sexual risk behaviors among individuals who have experienced a trauma, specifically intimate partner violence, may be indicative of a mediating relationship among these factors. For example, in a sample of individuals with severe mental illness who engaged in high rates of HIV risk behaviors and reported childhood physical and/or sexual abuse, childhood abuse (i.e., trauma) was found to be directly and indirectly associated with HIV risk through drug abuse (Meade, Kershaw, Hansen, & Sikkema, 2009). However, this sample consisted of individuals with severe mental illness which often produces inflated rates of incidence. In contrast, in the present study, research efforts were focused to give attention to non-clinical samples (as previously stated). In another study, Miller (2009) proposed that the relationship between the aforementioned variables is mediated by sexual abuse (i.e., rape and sexual trauma) in which initiation of and/or increasing reliance on drug use is used as a method of coping with the sexual abuse experience. Further research is needed in order to understand this mediation among non-clinical samples.

Implications of the aforementioned studies could possibly be suggesting that substance use may act as a mediator in the relationship between sexual risk and other factors such as depression. In fact, Shrier, Harris, Sternberg, & Beardslee (2001) found the association between depressive symptoms and STD appeared to be mediated by alcohol and marijuana use. For girls, depressive symptoms were associated with a history of STD but not with condom nonuse.

Additionally, according to Hilt, Nock, Lloyd-Richardson, and Prinstein (2008), young adolescents who engage in non-suicidal self-injurious behaviors are more likely to report having engaged in drug use compared to those who had not engaged in NSSI.
Likewise, individuals with substance disorders are more likely to self-injure than non-substance-users (Langbehn & Pfohl, 1993). Theoretically, NSSI and substance use may be associated through their function, more specifically as coping mechanisms for such factors as trauma and negative emotions (i.e., depression). Furthermore, in a review of self-injury, Klonsky & Muehlenkamp (2007) posited that similar psychological processes may underlie the behaviors of self-injury and substance abuse as both involve causing physiological harm to the body.

**Self-Esteem.**

Researchers have reported that self-esteem may play an important role in the development and maintenance of sexually risky behaviors (e.g., Joffe & Radius, 1993; Seal, Minichiello, & Omodei, 1997; Stiffman, Dore, Earls, & Cunningham, 1992). In a literature review conducted by Lagana` (1999) on the psychosocial correlates of contraceptive practices among sexually active late adolescents, self-esteem was identified as a variable significantly related to contraceptive use. Furthermore, Ethier et al. (2006) found that female adolescents who had low self-esteem reported initiating sex earlier and having had risky partners (i.e., factors of sexual risk). Additionally, self-esteem was found to influence later unprotected sex.

The mechanisms underlying the relationship between self-esteem and sexual risk have been examined. It has been suggested that self-esteem may directly and indirectly - through substance use - influence sexual risk. In fact, Shrier et al. (2001) suggested that health behavior theories, such as Problem Behavior Theory (Jessor & Jessor, 1977), which emphasize the importance of cognitive-affective factors (i.e., self efficacy, risk perceptions, and attitudes) in risk behaviors, provide possible mechanisms by which
factors such as self-esteem may affect sexual risk behavior. This would occur both directly as well as via mediation through substance use, further suggesting that low self-esteem may predispose adolescents to sexual risk by influencing these constructs. Furthermore, as childhood experiences with emotional neglect (i.e., possible trauma experience) and the number of drug-related problems experienced seem to be significant predictors of women's self-esteem level (e.g., Sterk, Klein, & Elifson, 2004), trauma and substance use may play a mediating role in the relationship between self-esteem and sexual risk. Further investigation is needed in order to identify the direct and indirect influence of self-esteem on sexual risk behaviors.

Self-esteem has also been investigated as a psychosocial factor of self-harmful behaviors (Hawton, Kingsbury, Steinhardt, James, & Fagg, 1999; Hawton, Rodham, Evans, & Weatherall, 2002; Laye-Gindhu, & Schonert-Reichl, 2005; Ystgaard, Reinholdt, Husby, & Mehlum, 2003). Brausch & Gutierrez (2010) found that adolescents who engaged in NSSI had higher self-esteem than their counterparts who had attempted suicide. However, in a review of research on self-injury, Klonsky & Muehlenkamp (2007) identified studies that linked low self-esteem to self-injury (e.g., Lundh, Karim, & Quilisch, 2007). These conflicting reports regarding the link between self-esteem and NSSI are indicative of a strong need for further investigation into these two factors for a clearer understanding.

**Borderline Personality.**

Although sexual abuse has been highly investigated as an associated factor of borderline personality (BPD), there is a distinct lack of research investigating the link between sexually risky behaviors and BPD traits/characteristics within non-clinical
populations. However, difficulties in impulse control functioning have been consistently identified within BPD, which often results in behaviors that are self harmful such as risk-taking and promiscuous sexual activity (Herman & van der Kolk, 1987). In a rare study, Chen, Brown, Lo, & Linehan (2007) examined the rates of STDs in women with BPD and substance abuse or dependence (SUD) compared to those with BPD-only. The authors found that women with BPD as well as SUD reported significantly more STDs than BPD, which suggests a possible mediating relationship between BPD and sexual risk through substance use. In-depth research is needed in order to further investigate the underlying mechanisms of the link between BPD and sexual risk.

Self-harmful behaviors are highly related to Borderline Personality Disorder (Dulit et al., 1994; Shearer, 1994). In fact, self-harm is identified as a characteristic/symptom of this disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000). However, the rate of BPD among young people who engage in non-suicidal self injury is unknown (Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006). Furthermore, mental health professionals have begun to recognize that NSSI does not only occur among individuals with BPD but in other populations as well and, furthermore, engaging in NSSI does not necessarily indicate the existence of BPD. The presence of NSSI outside of BPD indicates a strong need to investigate the prevalence of NSSI in non-clinical samples.

Kleindienst et al. (2008) pointed out that individuals with BPD are known to use NSSI as a dysfunctional strategy to regulate intense emotions. The authors found that, within their study, NSSI was reported by female BPD patients as usually being preceded by a large variety of negative feelings; the latter seemed to improve upon engaging in
NSSI. These findings may indicate a mediating relationship between NSSI and BPD through depression, as depression is a consistently linked negative emotion among individuals who engage in NSSI as well as a common comorbid factor of mental illness (i.e., BPD). Further investigation is needed in order to understand the causal relationship between BPD and the mediating factors.

**Eating Pathology.**

Concerning the relationship between sexual risk behaviors and eating pathology, Fisher, Schneider, Pegler, and Napolitano (1991) examined the degree of health-risk behaviors, including sexual activity with multiple partners, among adolescent females with abnormal eating attitudes. Participants with an eating attitude score suggestive of an eating disorder were more likely to participate in various health-risk behaviors including having a higher number of sexual partners. Researchers have also identified a relationship between sexual abuse (i.e., trauma) and eating pathology (see Connors & Morse, 1993 for a review), suggesting a possible mediation between sexual risk behaviors and trauma, as trauma has been shown to be a risk factor for sexual risk behaviors. Researchers must further investigate this possible underlying mechanism between sexual risk and eating pathology.

Eating disorders and eating pathologies have been consistently identified as being related to NSSI. For instance, bulimia nervosa and NSSI co-occur at high rates (Anderson, Carter, & McIntosh, 2002; Claes, Vandeluyken, & Vertommen, 2001; Favaro & Santonastaso, 1999; Wonderlich, Myers, Norton, & Crosby, 2002), and both have been conceptualized as maladaptive emotional regulation strategies (Agras & Telch, 1998; Kjelsas, Borsting, & Gudde, 2004; Smyth, Wonderlich, & Heron, 2007).
Furthermore, it has been suggested that NSSI and eating disorders share similar etiological and maintenance factors (see Svirko & Hawton, 2007 for a review). The link between eating pathology and NSSI must be further investigated among non-clinical sample in order to clarify the underlying functions of the relationship.
Chapter III: Methodology

Design Rationale.

The design of this study included both quantitative as well as qualitative data collection. The purpose of this originally concurrent mixed methods study (turned quantitative only) was to investigate the relationship between sexually risky behaviors and non-suicidal self injury along with the mediating and predicting factors that may contribute to the occurrence of these behaviors among Latina adolescents and young adults, and young women in particular. This was done by converging both quantitative (broad numeric trends) and qualitative (detailed views) data collection. In the study, self-report questionnaires were used to measure the relationship between SRB and NSSI. Simultaneously, potentially contributing factors of these risky and self harmful behaviors could be explored using quantitative questionnaires.

The use of a mix methods design provides this study with advantages from both (quantitative and qualitative) types of data. The method allows a broader perspective of the variables under investigation from different types of data. While the quantitative data provides an objective measure of the relationship between risky and self-harmful behaviors, the qualitative data collected while preparing for this thesis will, in the future, supplement the quantitative findings providing a deeper understanding of the different levels of the participants’ experiences. For the purposes of completing this thesis in a timely manner, although I collected extensive qualitative information, only quantitative data were used to conduct the required analyses presented later on in this thesis (again, qualitative portions of the gathered data will be used in future research for a more in-depth analyses of the behaviors targeted herein quantitatively).
Procedure

In this study, self-report questionnaires were used to measure sexually risky behaviors and non-suicidal self injury. At the same time, potentially mediating factors that may contribute to the occurrence of these behaviors were explored using additional questionnaires. A battery of self-report questionnaires was administered through a web service called Qualtrics to the general population, which was also made available to the subject pool in the Psychology Department at four-year university within Los Angeles county. All respondents were debriefed at the end of their participation and were informed of their right to withdraw from the study at any point as well as their right to confidentiality at the beginning as well as at the end of the study.

Participants completed the surveys using the online system and were asked to complete the surveys privately. Individuals were to return to the survey to complete at their convenience (i.e., respondents were not required to complete the survey in one sitting but were able to complete it in sections of time). Individuals in this study were provided information about the nature of the study and were asked to click "I consent" or "I do not consent" before they could participate in this study (see appendix).

The study consisted of a 4-part survey: Survey Part 1 measured sexually risky behavior; Survey Part 2 measured self-harmful behaviors; Survey Part 3 consisted of both standard questionnaires and open-ended questions in order to explore psychosocial correlate factors related to these behaviors; Survey Part 4 recorded demographic information. The surveys were alternated for counterbalancing. The survey was piloted through over 70 anonymous participants – ensuring that the time commitment of the
study is about one hour in length, depending upon the questions/questionnaires that apply to each respondent’s circumstances.

To ensure participant confidentiality, no identifying information was collected. Data collected in this study remained confidential, only to be handled by the researchers. All respondents were provided counseling information (i.e., where they may seek counseling if needed) at the end of the completed survey, regardless of their responses on the questionnaires.

**Participants.**

For the comprehensive sample gathered for this thesis as well as for future related research, participants of both genders were recruited through the participation pool of undergraduate students at a four-year university in Los Angeles County and through the general public. Individuals from the general public were recruited through flyers (see appendix) dispersed throughout the community and online through emails and social networking websites. Respondents from the university were recruited using the Psychology Department’s participant pool in exchange for research credit. This allowed the investigation of two different samples (the broader sample from the web service and the more narrowed sample from the school’s subject pool). Participants were required to be 18 years or older in order to participate, due to the sensitive nature of the topics under investigation in this study. Due to the demographic population in the area of this study, it was expected that sufficient recruitment of Latinas would be easily achieve.

A total of 683 participants constituted the initial sample. Over forty cases were removed due to incomplete surveys (in which 95% of data was missing). As mentioned previously, this study focused on Latina adolescents and young adults (as well as other
ethnic groups as a unit). Therefore, the initial sample was narrowed down to only include female participants between the ages of 18 to 24 as is conventionally accepted within the aforementioned literature. Furthermore, the selection of cases was limited to respondents who indicated being sexually active (whether in the past or presently). Accordingly, the final sample ($N = 276$) used in the present analyses consisted of sexually active females between the ages of 18 to 24. A comprehensive description of the final sample can be seen in Table 1. Categories of ethnicities were dummy-coded for analysis purposes, resulting in 52.5% of the participants identifying as Latina/Hispanic. Most of the respondents (87.3%) indicated that they were single in regards to their marital status. About half (55.3%) of the participants indicated that they were college students at the time of enrollment in the study.

---

**Table 1. Descriptive Statistics of Sample**

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latin-American</td>
<td>145 (52.5)</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>36 (13)</td>
</tr>
<tr>
<td>African American/Black</td>
<td>29 (10.5)</td>
</tr>
<tr>
<td>Asian American/Asian</td>
<td>45 (16.3)</td>
</tr>
<tr>
<td>Other</td>
<td>21 (7.7)</td>
</tr>
<tr>
<td>Sexual Orientation (.4% missing)</td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>255 (92.4)</td>
</tr>
<tr>
<td>Homosexual</td>
<td>7 (2.5)</td>
</tr>
<tr>
<td>Bisexual</td>
<td>13 (4.7)</td>
</tr>
<tr>
<td><strong>Mean ± SD</strong></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>19.59 ± 1.44</td>
</tr>
</tbody>
</table>
Measures.

**Sexual Risk.** The Sexual Risks Scale (DeHart & Birkimer, 1997) was used to measure behaviors of sexual risk among the respondents of this study. The Sexual Risks Scale is a 38-item scale comprised of six subscales that measure the following: attitudes about safer sex, normative beliefs, intentions to practice safer sex, expectations about the feasibility of safer sex, perceived susceptibility for contraction of HIV/AIDS, and substance use. The subscales were designed with the flexibility to be used separately or together, depending on the needs of the study. All subscales of the Sexual Risks Scale were used for this study. Item statements include the following as examples: “People can get the same pleasure from "safer" sex as from unprotected sex”, “The proper use of a condom could enhance sexual pleasure”, and “Generally, I am in favor of using condoms.” Responses are measured on a 5-point Likert-type scale (“Strongly disagree” = 0, “Disagree” = 1, “Neutral” = 2, “Agree” = 3, “Strongly agree” = 4). In accordance with positive statements of the scale and scoring instructions, a low score of the Sexual Risk Scale is indicative of higher levels of sexual risk. For ease of understanding, low scoring of this scale will be referred to as "high sexual risk" from this point forward. The scale has been shown to have high reliability within the entire scale (α = .86).

**Non-suicidal self injury.** The Deliberate Self-Harm Inventory (DSHI; Gratz, 2001) was used to assess various aspects of non-suicidal self injurious behaviors among the participants. The DSHI is a 17-item, behaviorally based, self-report questionnaire developed to assess various aspects of deliberate self-harm, including frequency, severity, duration, and type of self-harming behavior. Specifically, this study focused on the number of various types of self-harmful behaviors reported. Preliminary findings indicate
that the DSHI has high internal consistency; adequate construct, convergent, and
discriminant validity; and adequate test-retest reliability (α = 0.92). Scale item questions
include “Have you ever intentionally (i.e., on purpose) cut your wrist, arms, or other
area(s) of your body (without intending to kill yourself)?”

Gender, Age, Ethnicity, & Sexual Orientation. A demographic list, composed by
Luciana Lagana’, was used to gather demographic information from each respondent
including their gender, age, ethnicity, and sexual orientation. The list is a 10-item tool
that allowed the quantification of participants’ socio-demographic information regarding
place of birth, educational level, employment status, income, and marital status as well as
the aforementioned data. Single-item questions have been added to assess generational
status of respondents (i.e., birth country, languages spoken, etc.).

Depression. The Center for Epidemiological Studies – Depression Scale (CES-D; Radloff, 1977) was administered to participants in order to measure symptoms of
depression. The CES-D is a 20-item measure was developed by the National Institute of Mental Health. Responses range on a four-point Likert format (“0” = “rarely or none of
the time (less than 1 day)”, and “4” = “almost or all of the time (5-7 days”)”). The CES-D
measures four separate factors: Depressive affect, somatic symptoms, positive affect, and interpersonal relations. The CES-D has demonstrated good internal consistency with
alphas of .85 for the general population and is consistently used in research.

Trauma. In order to assess trauma among respondents, two scales were utilized:
Distressing Event Questionnaire and Traumatic Life Events Questionnaire (TLEQ). Both
tools were created by Kubany, et. al. (2000) at the Honolulu National Center for PTSD.
The Distressing Event Questionnaire is a 20-item tool created to measure respondents’
reactions to events perceived as particularly distressing to them. The scale includes 17 items that match the 17 key symptom features of PTSD (5 re-experiencing symptom items, 7 numbing/avoidance symptom items, and 5 hyperarousal symptom items). Participants are asked to indicate the degree to which they experienced symptoms in the past month, with responses ranging from 0 (absent or did not occur) to 4 (present to an extreme or severe degree), providing a single score of PTSD symptomatology. The tool includes 3 additional items that assess trauma-related guilt, trauma-related anger, and trauma-related grief. The tool has been shown to have excellent discriminative validity against the Clinician Administered PTSD Scale (CAPS).

The Traumatic Life Events Questionnaire was created to measure trauma exposure across a broad range of stressful events. It is a comprehensive list of 22 behaviorally descriptive potential traumatic events and contains a 23rd category of “other events”. Three totals can be calculated through this measure, quantifying: (1) number of lifetime traumatic events, (2) frequency of exposure to each traumatic event experienced, and (3) whether experiencing traumatic events evoked intense fear, helplessness, or horror when the event occurred. The tool has been well-validated. Possible responses range from never (0) to more than 5 times (6). In order to clearly identify the factor within analysis, trauma was calculated by quantifying the total number of lifetime traumatic events experienced by the respondent; without the calculation of evoked emotions, as identified to indicate a traumatic experience, trauma was measured as the number of "potentially" traumatic experiences.

**Self-Esteem.** The Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) was administered to participants to assess self-esteem. The Rosenberg Self-Esteem Scale is a
ten-item Likert scale, widely-used, self-esteem measure with items answered on a four-point scale – from strongly agree to strongly disagree. Item statements include, for example: “On the whole I am satisfied with myself.” The scale has been shown to have a reliability range of 0.77 to 0.88.

**Substance Abuse.** The Drug Abuse Screening Test (DAST-10; Cocco & Carey, 1998) was used to assess drug use and related problems. The tool provides a quick index of drug-related problems, which yields a quantitative index of the degree of consequences related to drug abuse. DAST-10 has demonstrated high internal consistency reliability (0.92 for the total sample and 0.74 for the drug-abuse sample). The reliability and validity of the DAST has been supported across various contexts (i.e., among adolescents). Item questions include: “Have you used drugs other than those required for medical reasons?” and “Are you always able to stop using drugs when you want to?” with dichotomous responses (i.e., Yes or No). The CAGE Alcohol Abuse Screener (Mayfield, McLeod, & Hall, 1974) is a four-item questionnaire used to screen for alcohol abuse with dichotomous responses (“no” = 0 and “yes” = 1). Statements include: “Have you ever felt you should Cut down on your drinking?” and “Have people Annoyed you by criticizing your drinking?” Demonstrated to have a moderate internal consistency of 0.69.

**Eating Disorder.** The Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982) was used to assess possible eating problems within the sample attained in this study. Test-retest reliability (Carter & Moss, 1984) and internal consistency (Garner & Garfinkel, 1979) of the original EAT scale has been shown to be good, and the modified EAT-26 has been shown to be highly correlated ($r = .98$) with the original 40-item EAT tool (Garner et al., 1982). Item statements include, for example: “Am terrified
about being overweight” and “Vomit after I have eaten” with responses ranging from always (3) to never (0). The tool also includes 4 behavioral questions concerning the individuals eating behaviors over the past six months (e.g., vomiting, use of laxatives, etc.) with dichotomous (Yes or No) responses.

**Borderline Personality.** The McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD; Zanarini, Vujanovic, Parachini, Boulanger, Frankenburg, & Hennen, 2003) was used to assess borderline personality features within the sample of this study. The MSI-BPD is a 10-item measure developed as a brief test to detect possible Borderline Personality Disorder features in people who are seeking treatment or who have a history of treatment. Item questions include, for example: “Have you had at least two other problems with impulsivity (e.g., eating binges and spending sprees, drinking too much and verbal outbursts)?”, “Have you frequently felt unreal or as if things around you were unreal?”, and “Have you chronically felt empty?” Items are rated from “1” if it is present and a "0" if it is absent. The tool has not been tested in community samples; therefore, it is unknown whether it is good at detection among the general population. However, it has shown adequate internal consistency and good test-retest reliability.
Chapter IV: Results

Preliminary Analyses.

*Missing Data.* After the removal of incomplete surveys ($N = 43$) as previously mentioned, missing data for each item were found to be minimal (2.5%). Therefore, missing value analysis was determined to be unnecessary. Moreover, analyses were conducted with the exclusion of these cases.

*Normality.* Multivariate outliers were identified using Mahalanobis Distance, as suggested by Tabachnick & Fidell (2007), through Linear Regression analysis in SPSS. The Mahalanobis Distance chi square cut-off was determined at a .001 alpha; however, no outliers were identified. Several of the variables of interest (i.e., NSSI, depression, alcohol use, drug use, eating pathology, and trauma) were found to be positively skewed. These variables were normalized through square-root transformations.

Proposed Model.

Although there has been extensive research on the two behaviors of interest within this study (i.e., sexual risk and NSSI), there has been a general lack of investigation in the concurrent existence of the two behaviors as well as the psychosocial factors that predict them in such circumstances, particularly outside of clinical samples. Therefore, in this study, I proposed to extend the scope of previous research by examining the concurrent severity of sexual risk and frequency of NSSI as well as by investigating the path between psychosocial predictors of each behavior and the possible link between the two behaviors. Using previous literature findings as guidance, paths from predictors were examined through mediator variables to the outcome variables of sexual risk and NSSI. Figure 1 provides a conceptual overview of the proposed model.
Figure 1. Proposed Model
Analysis.

First, an intercorrelational matrix, which included means and standard deviations, was calculated (depicted in Table 2) to identify the strength of the correlations among factors to be tested in the model and take them into account in a methodologically sound fashion. A path analyses, as proposed in this paper, was conducted to test the proposed model for goodness of fit through the use of EQS v6 software. Path analysis is a technique that allows researchers to essentially conduct simultaneous multiple regressions on more than one dependent variable. To reiterate, in this model, sexually risky behaviors and non-suicidal self injury were conceptualized as being the predicted variables; it was also expected that these behaviors would be correlated to each other. The variables of ethnicity (i.e., Latina status versus all other ethnic backgrounds), self-esteem, BPD, and Trauma were used as the initial predictors (with hypothesized paths) to other independent variables as well as the two outcome variables. Simultaneously, the variables of depression, drug use, alcohol use, and eating pathology were used as mediators as well as secondary direct predictors of the two outcomes variables.

Indices of Fit. A variety of fit indices were used to determine whether the proposed model fit the data. Included in these fit indices were the traditional overall $\chi^2$ test of model fit (which is conventionally expected to be statistically non-significant), the Root Mean Square Error of Approximation (RMSEA; which is expected to be less than .08), as well as the Comparative Fit Index (CFI; which is expected to be greater than .90), in order to indicate adequate model fit.
Table 2. Means, standard deviations, and intercorrelation matrix of studied variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latina</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Risk</td>
<td>-.119*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSSI</td>
<td>-.002</td>
<td>.022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-.096</td>
<td>-.11</td>
<td>.330**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>-.115</td>
<td>-.001</td>
<td>.078</td>
<td>.076</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug</td>
<td>.010</td>
<td>-.01</td>
<td>.186**</td>
<td>.032</td>
<td>.253**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-esteem</td>
<td>-.038</td>
<td>.032</td>
<td>-.198**</td>
<td>-.329**</td>
<td>.021</td>
<td>-.024</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPD</td>
<td>-.006</td>
<td>-.090</td>
<td>.421**</td>
<td>.568**</td>
<td>.070</td>
<td>.041</td>
<td>-.206**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eating pathology</td>
<td>-.156**</td>
<td>.052</td>
<td>.218**</td>
<td>.361**</td>
<td>-.028</td>
<td>-.072</td>
<td>-.086</td>
<td>.214**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trauma</td>
<td>-.140*</td>
<td>.083</td>
<td>.308**</td>
<td>.279**</td>
<td>.115</td>
<td>.205**</td>
<td>-.072</td>
<td>.332**</td>
<td>.206**</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>.53</td>
<td>93.224</td>
<td>.677</td>
<td>4.053</td>
<td>.469</td>
<td>.715</td>
<td>16.358</td>
<td>3.960</td>
<td>2.837</td>
<td>3.104</td>
</tr>
<tr>
<td>SD</td>
<td>.500</td>
<td>14.154</td>
<td>.787</td>
<td>1.365</td>
<td>.6579</td>
<td>.730</td>
<td>1.898</td>
<td>2.893</td>
<td>1.600</td>
<td>1.296</td>
</tr>
</tbody>
</table>

Notes: Substance use (i.e., alcohol & drug use) variables were measured separately. *p<.05, **p<.01; Ethnicity Coding (Latina = 1, Not Latina = 0).
Results.

A path analysis was conducted on the final sample with Latinas versus all other ethnic backgrounds (\(N = 276\)) to test: 1) whether the proposed model was a good fit for the data, 2) whether there was a relationship between sexual risk and NSSI, 3) which variables were significant predictors of each of these outcomes, and 4) whether there was a difference in the outcome variables (i.e., sexual risk and NSSI) between Latinas and all other ethnicities. For ease of presentation, this result section is organized into three parts: model fit, direct effects, and indirect effects.

Model Fit. Model 1, which is the initial proposed model, did not fit well, \(\chi^2(15) = 45.478, p < .001\), the comparative fit index (CFI) = 0.906 and the root mean square error of approximation (RMSEA) = 0.086. The suggestions by the Lagrange multiplier test were used in order to improve the model fit via implementing the addition of important paths. Concerning the specific model modifications implemented, they are depicted in Table 3, which contains the \(\chi^2\) changes.

Table 3. \(\chi^2\) Changes to Improve the Fit of the Original Model

<table>
<thead>
<tr>
<th>Model</th>
<th>(\chi^2)</th>
<th>(\chi^2) Change</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>45.478</td>
<td></td>
<td>0.906</td>
<td>0.086</td>
</tr>
<tr>
<td>2</td>
<td>29.47</td>
<td>16.008</td>
<td>0.952</td>
<td>0.063</td>
</tr>
<tr>
<td>3</td>
<td>22.308</td>
<td>7.162</td>
<td>0.971</td>
<td>0.051</td>
</tr>
</tbody>
</table>

In model 2, the correlated error between errors of drug use and NSSI was a significant improvement to fit of the model, \(\chi^2(14) = 29.47, p < .01\), CFI = 0.952 and RMSEA = 0.063. In the final model, the errors between drug use and alcohol were correlated; a
significant improvement, $\chi^2(13) = 22.308, p = .051$, CFI = 0.971, and RMSEA = 0.051, providing a good model fit.

Direct Effects. To further describe the final model, individual paths that were found to be significant or contradictorily non-significant are described in the present section. First, Latina ethnicity had a significant path to sexual risk (unstandardized coefficient = -3.445, $p<0.05$) as well as correlated errors with trauma (unstandardized coefficient = -0.091, $p<0.05$). However, Latina ethnicity did not have a significant path to NSSI (unstandardized coefficient = .062, $p>0.05$). Means and standard deviations for each of the psychosocial predictors and outcome behaviors between Latinas and Non-Latinas can be seen in Table 4. Self-esteem had only one significant path to the variable of depression (unstandardized coefficient = -.159, $p<0.05$) as well as correlated errors with BPD (unstandardized coefficient = -1.132, $p<0.05$). However, borderline personality disorder (i.e., BPD) had two significant paths, i.e., to depression (unstandardized coefficient = .231, $p<0.05$) and NSSI (unstandardized coefficient = .08, $p<0.05$), as well as correlated errors with trauma (unstandardized coefficient = 1.245, $p<0.05$). Additionally, trauma had significant paths to depression (unstandardized coefficient = .106, $p<0.05$), drug use (unstandardized coefficient = .121, $p<0.05$), and NSSI (unstandardized coefficient = .103, $p<0.05$). Finally, the added correlated errors between drug use and NSSI (unstandardized coefficient = .078, $p<0.05$) as well as alcohol use (unstandardized coefficient = .108, $p<0.05$) were significant.
Table 4. *Means and standard deviations of the psychosocial predictors and of the two outcome variables for Latinas and Non-Latinas*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Sexual Risk</th>
<th>NSSI</th>
<th>Depression</th>
<th>Alcohol</th>
<th>Drug</th>
<th>Self-esteem</th>
<th>BPD</th>
<th>Eating Pathology</th>
<th>Trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latina</td>
<td>Mean</td>
<td>91.627</td>
<td>0.676</td>
<td>3.929</td>
<td>0.398</td>
<td>0.722</td>
<td>16.289</td>
<td>3.945</td>
<td>2.601</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>15.255</td>
<td>0.794</td>
<td>1.397</td>
<td>0.629</td>
<td>0.704</td>
<td>1.707</td>
<td>2.913</td>
<td>1.567</td>
</tr>
<tr>
<td>Non-Latina</td>
<td>Mean</td>
<td>94.992</td>
<td>0.679</td>
<td>4.192</td>
<td>0.549</td>
<td>0.708</td>
<td>16.435</td>
<td>3.977</td>
<td>3.099</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>12.651</td>
<td>0.782</td>
<td>1.322</td>
<td>0.682</td>
<td>0.761</td>
<td>2.094</td>
<td>2.883</td>
<td>1.601</td>
</tr>
</tbody>
</table>
Indirect Effects. A few indirect effects were identified. Mainly, depression was found to serve as a significant intervening variable between numerous predictors and the two outcome variables. As previously mentioned, the variables of self-esteem (unstandardized coefficient = -0.16, \( p<0.05 \)), BPD (unstandardized coefficient = 0.23, \( p<0.05 \)), as well as trauma (unstandardized coefficient = 0.11, \( p<0.05 \)) were found to have significant paths to depression. Subsequently, depression and eating pathology served as intervening variables between the aforementioned predictors and the outcome variable NSSI. Specifically, depression was a significant risk factor for eating pathology (unstandardized coefficient = .408, \( p<0.05 \)), which, in turn, predicted NSSI (unstandardized coefficient = .055, \( p<0.05 \)). Additionally, depression also served as a mediating variable between trauma and sexual risk (unstandardized coefficient = -1.769, \( p<0.05 \)). Surprisingly, path analyses revealed that not only was alcohol use not significantly predicted by any other variable such as depression (unstandardized coefficient = 0.02, \( p>0.05 \)) or trauma (unstandardized coefficient = 0.05, \( p>0.05 \)), but also that depression was not a risk factor for sexual risk (unstandardized coefficient = -0.02, \( p>0.05 \)). Finally, non-significant paths were removed in order to achieve a parsimonious model. The final model is illustrated in Figure 2. A theoretically-based potential explanation for such findings is provided in the discussion chapter of this thesis.
Figure 2. Final model
Chapter V: Discussion

Although sexual risk and NSSI have been found to be prevalent among similar populations (i.e., adolescents and young adults), these factors have not been previously addressed together in a comprehensive model, especially as it pertains to Latinas. Therefore, in this study, I attempted to test such a model covering these neglected research topics for exclusively non-clinical populations. With this goal in mind, three hypotheses were tested: it was expected that 1) there would be a relationship between sexual risk and NSSI, 2) the outcomes of interest would share similar predictors, and 3) differences between Latinas and all other ethnic groups would be found, pointing to the existence of the Hispanic paradox providing an advantage for Latinas. This study is, therefore, innovative in its focus on understanding these two health-risk behaviors among neglected ethnic populations and within non-clinical populations.

In the final model of this study, which is the improved version of the initial hypothesized model, there was no significant relationship between sexual risk and NSSI found. This finding was surprising as previous research that has investigated each individual factor (i.e., they only examined one of the factors and not both at the same time) have demonstrated that sexual risk and NSSI share similar predictors, such as traumatic events and substance use. However, due to the novel sample in this study (i.e., female Latinas vs. all other female ethnic groups) this finding may be due to a unique and unexamined mechanism. In particular, one reason that could be driving this lack of relationship between the two factors is that, in this study, a non-clinical sample was recruited, whereas many researchers who have investigated NSSI have used clinical samples, which conventionally have higher prevalence of NSSI.
Moreover, as the present study was conducted among a non-clinical female sample, its respondents may have been less willing to disclose NSSI behaviors given the negative stigma attached to it. As the sample included slightly over half of Latinas, who are conventionally of a Catholic religious background (43.5% of the sample indicated they were of a Catholic religion background), such individuals may be particularly motivated to conceal such behaviors. Many times, the distinction between suicidality and NSSI is misunderstood, which may lead to concealment of NSSI behaviors possibly confused with suicidality, with the latter not being conventionally accepted within this culture, as suicide is viewed as a sin in Catholicism. However, it should be stated that, in this study, I did not examine the role of religious identification as a potential predictor to these factors.

In regards to the second hypothesis, significant predictors of each outcome behavior were identified, as well as a small number of overlapping predictors for both factors. To be concise, only a discussion of the most surprising/important findings is given in the following portion of this thesis. Although neither of the substance use variables (i.e., drug or alcohol use) were found to significantly predict the two outcomes, drug use was found to be associated with NSSI. This result suggests that the use of drugs is related to the number of NSSI behavior types in which the individual has engaged. As previously demonstrated in extensive literature, BPD was found to be a significant predictor of NSSI. Yet, BPD was not a significant predictor of sexual risk, a finding indicating that an individual with borderline personality characteristics will not necessarily engage in sexual risk behaviors. This is a positive finding from a clinical viewpoint, as the general population of young adults is represented in the present study.
Concerning overlapping predictors between the two behaviors of interest, trauma was found to be a shared predictor by both outcomes. As demonstrated in previous research, trauma (e.g., childhood sexual abuse) is a consistently strong predictor of NSSI behaviors. The final model in this study lends further support for such a relationship between these two variables, indicating that more frequent incidence of different types of trauma that an individual experiences predicts a higher number of NSSI behavior types reported. In other words, if an individual has experienced various types of traumatic experiences they are more likely to engage in various types of NSSI behaviors. Although trauma was found to be a similar predictor for sexual risk as well, unlike NSSI, it was an indirect prediction through depression. As illustrated in the final model, the higher the frequency of possible traumatic events that were experienced (e.g., various types of potentially traumatic events were experienced), the higher level of depression symptomatology was found, which led to higher sexual risk.

Although self esteem was not found to be a significant direct predictor of sexual risk, an inspection of the final model leads to the fact that self-esteem may be a far-removed predictor of each individual outcome. As discussed previously, self-esteem was shown to predict depression, which directly predicted sexual risk and indirectly predicted NSSI through eating pathology. Furthermore, self-esteem was significantly related to BPD which directly predicted NSSI, indicating that a lower self-esteem is associated with a higher level of borderline personality characteristics, which directly predicts higher number of NSSI behavior types reported. This may indicate that self-esteem is, although far-removed, a variable that drives the predictors of NSSI behaviors. This is a very
clinically relevant result that needs more in-depth attention, possibly via using qualitative research methods.

A surprising finding in the prediction of each individual outcome was the non-significance of prediction of alcohol use to sexual risk. This finding contradicts the extensive literature that has demonstrated that alcohol use and sexual risk are strongly associated. However, due to the nature of the sample used in this study, there may be a theoretical reasoning for such a lack of significance between these two variables. As previously mentioned, slightly over half of the sample included in this study consisted of female Latinas; a unique factor that may explain the lack of a significant alcohol use predictor is the experience of "marianismo" within the typical Latina of any age.

"Marianismo" is a term that describes an important, somewhat "saintly" aspect of the female gender role in the machismo (i.e., the sense of being manly) of Latin-American culture (Stevens, 1973). Specifically, it describes the cultural respect given to feminine virtues such as purity and moral strength. This cultural aspect of "marianismo" that may be present in the Latina sample (although not quantified in the present study) could be driving a motivation to conceal alcohol use as this behavior may be seen as unacceptable. Furthermore, if this is the underlying mechanism for the lack of significance within alcohol use, marianismo may be driving various other health-related behaviors among this population. Research is certainly needed on this neglected topic.

Concerning the last hypothesis on ethnic differences between Latinas and all other female ethnic groups, the final model indicated that, although Latina ethnicity did not predict NSSI, it predicted sexual risk. Specifically, there was a negative association between Latina ethnicity and sexual risk, indicating that being of Latina ethnicity is a risk
factor, as it significantly predicts a higher likelihood of sexual risk. In reference to the early discussion on previous literature of sexual risk among Latinas, this study lends support to previous research suggesting a high prevalence of detrimental outcomes associated with sexual risk among Latinas. The Latina-sexual risk finding is indicative of the presence of a reverse Hispanic paradox, as I found this ethnic group to be at risk - more than the other ethnicities combined - for engaging in sexually risky behaviors. For the first time in the literature, we found that sexual health and its outcomes are exceptions to the Latino/a Paradox phenomenon, as Latina ethnicity was actually a risk - not a protective - factor within the ethnicity-sexual risk link; more research is certainly needed on this topic. Perhaps, the fact that Latinas engaged in higher levels of sexually risky behaviors is due to, or influenced by, the fact that Hispanic-Latinas typically report less parent-adolescent sexual communication than other ethnic group (e.g., Hutchinson, 2002); this could lead to higher sexual risk. The taboo of addressing sexual topics within this ethnic group could be due to the strong prominence of Catholicism within it and the correspondence view of sex as “dirty” and certainly taboo; again, researchers should investigate these speculations in future studies.

While Latina ethnicity did not directly predict NSSI, it was correlated to trauma, which directly predicted NSSI. Although the significant relationship between trauma and Latina ethnicity was unspecified, it may indicate that the prediction of NSSI through trauma is partially driven by its association to the Latina ethnicity. Regardless of ethnicity, having experienced a higher number of traumatic experiences is a significant risk factor for engaging in NSSI behaviors. As previously mentioned, the link between trauma and NSSI has not been sufficiently investigated and clarified in prior literature;
therefore, the present finding may provide a slightly clearer understanding of the relationship between trauma and NSSI behaviors. Furthermore, as Latina ethnicity did not directly predict NSSI, the findings of this study demonstrate that being Latina will not predict NSSI behaviors unless the individual also experiences traumatic events. Perhaps being Latina is a risk factor for trauma exposure, which in turn is a risk factor for NSSI. Interested researchers should investigate whether this conjecture is correct.

**Implications.** Many of the findings of this study have important implications for mental health providers and provide a deeper understanding of the relationship between these behaviors (or lack thereof) as well as the associated psychosocial variables that best predict such clinically troublesome behaviors. A deeper understanding of these behaviors may aid in the development and enhancement of interventions used for risky and self-harmful behaviors. Furthermore, important clinical treatment consideration can be made for clinicians serving Latino/a population, as the findings of this study focus on this population.

A main problem is the lack of training on how to best assess and treat the aforementioned clinical issues. In this regard, Heath, Toste, & Beettam (2007) surveyed school counselors regarding their experiences with NSSI among students. The authors found that counselors expressed a concern with the lack of training in the area as well as a need to become informed about the occurrence and characteristics of NSSI. These findings best exemplify the importance of studies such as the one described herein. By providing a holistic understanding of these behaviors, which are prevalent among youth, providers such as school counselors can be better prepared to serve their student population in their needs.
**Limitations.** A major limitation to this study is the inability to include all possible predictors of these health-risk behaviors; this is a limitation common to most studies in this area, as there are so many factors that could play a role in this model. For example, anxiety was not included as a predictive variable in this study due to its high correlation with depression. However, it should be noted that, due to the relatively exploratory nature of this study (as no other researchers have attempted this holistic research approach in the past), it was important to limit the focus of this study on variables potentially most highly correlated to sexual risk and NSSI. Additionally, as "marianismo" is theorized to be an underlying mechanism within the behaviors of Latin-American culture, the lack of measure of this construct limited the understanding of certain findings such as the non-significant variable of alcohol use; assessing all possible factors impacting the two outcome variables was beyond the scope of this study.

**Future Research.** Although no relationship was found between sexual risk and NSSI, due to the contradictory nature of these findings in comparison to past literature, especially among clinical samples, this study should be replicated among other ethnic groups as well as with a male sample, which may reveal different findings. Marianismo should also be examined as a possible underlying mechanism in the health-risk behaviors among Latinas.

As already mentioned, due to time constraints, the qualitative data collected through this study were not used in the analyses within this study. However, it is anticipated that, in the future, analyses using the mix-methodology will be conducted. Furthermore, researchers should attempt to investigate additional predictors of these health-risk behaviors, as only some of the possible predictors of the outcome variables
were considered. Moreover, these behaviors should be investigated within the African-American community in particular, as the latter is at a particular high risk for health-risk behaviors (Centers for Disease Control and Prevention, 2011b; Laumann & Youm, 1999) as similarly seen in Latinos/as.
References


ARE YOU INTERESTED IN PARTICIPATING IN A SURVEY RESEARCH STUDY ON SEXUALLY RISKY AND SELF-HARMFUL BEHAVIORS?

We invite you to contact us if you would like to participate.

Participants will complete an online survey

Participants will be asked to commit 1 hour of their time to complete this study.

ALL INFORMATION PROVIDED IN THIS STUDY IS CONFIDENTIAL

IF YOU OR ANYONE YOU KNOW MAY BE INTERESTED IN PARTICIPATING IN THIS STUDY PLEASE FEEL FREE TO CONTACT PATRICIA CABRAL AT PATRICIA.CABRAL.72@MY.CSUN.EDU
APPENDIX B: Participant Information Form

California State University Northridge
INFORMATION FORM
Sexually Risky and Non-Suicidal Self Injurious Behaviors

You are asked to participate in a research study conducted by Patricia Cabral, principal investigator, and Dr. Luciana Lagana of the Department of Psychology at California State University Northridge. This study aims to better understand sexually risky behaviors and non-suicidal self injury among adolescents and young adults.

- **REQUIREMENTS OF THE STUDY**
The only requirement for this study is that you are 18 years of age or older.

- **PURPOSE OF THE STUDY**
The purpose of this concurrent mixed methods study is to investigate the co-occurrence of sexually risky behaviors and non-suicidal self injury along with factors that may be mediating or moderating the occurrence of these behaviors among adolescents and young adults.

- **PROCEDURES**
If you decide to volunteer to participate in this study, you will be asked to fill out a series of surveys that ask about your sexual health and knowledge, behaviors, psychological well-being and you will be asked to briefly describe your experiences in dealing with various aspects of your life and behaviors. Completing this survey will take approximately 2 to 2.5 hours (120-150 minutes) of your time. You are free to answer as many or as few questions as you wish, and you do not have to answer any questions that make you feel uncomfortable. You are also free to stop answering questions at any time. No identifying information will be collected. Data collected in this study will remain confidential and will be disclosed only with your written permission or if required by law. No deception will be used in this study.

- **POTENTIAL RISKS AND DISCOMFORTS**
You will not encounter any risks beyond that which you would encounter during your everyday life. If at any time you feel uncomfortable answering any questions, you are free to skip the question(s) or withdraw from the study.

- **POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY**
You are not likely to benefit in any significant or direct way from participating in this study.
The result from this study may not change your status or behaviors; however the information will be used to bring awareness and understanding to the aforementioned behaviors. The researcher expects that the information gathered in this study will affect positive change.

- **CONFIDENTIALITY**
Any information that is obtained in connection with this study will not identify you as the respondent and will be strictly confidential and will be stored in a secure database. In any publications or presentations of the results of the study, only group trends will be reported and no identifying information will be released.

- **PARTICIPATION AND WITHDRAWAL**
  You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don’t want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

- **CONTACT INFORMATION**
  If you have specific questions about the study you may contact:
  Patricia Cabral
  Department of Psychology
  CSU Northridge
  18111 Nordhoff St.
  Northridge, CA 91330-8255
  patty.cabral.86@gmail.com

  If you have concerns or questions about your rights as a research subject please contact:
  The Office of Research and Sponsored Projects
  CSU Northridge
  18111 Nordhoff St.
  Northridge, CA 91330-8232
  (818) 677-2901

  o I consent to participate in this study.
  o I do not consent and wish to withdraw from this study at this moment.