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# Non-Suicidal Self-Injury, Suicidal Behaviors, And Body Investment in Heterosexual and Sexual Minority Young Adults

Emily Cox

Western Kentucky University, [emily.cox146@topper.wku.edu](mailto:emily.cox146@topper.wku.edu)

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NON-SUICIDAL SELF-INJURY, SUICIDAL BEHAVIORS, AND BODY  
INVESTMENT IN HETEROSEXUAL AND SEXUAL MINORITY YOUNG ADULTS

A Capstone Experience/Thesis Project

Presented in Partial Fulfillment of the Requirements for

the Degree Bachelor of Science with

Honors College Graduate Distinction at Western Kentucky University

By

Emily Marie Cox

\* \* \* \* \*

Western Kentucky University  
2016

CE/T Committee:

Dr. Amy Brausch, Advisor

Dr. Diane Lickenbrock

Mr. Brian Lee

Approved by

\_\_\_\_\_  
Advisor

Department of Psychological Sciences

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## ABSTRACT

College-aged individuals who identify with a sexual minority orientation are at high risk for non-suicidal self-injury (NSSI) and suicidal behaviors. Research is lacking on identification of factors contributing to increased risk for this population. This study examined two facets of body investment, body protection and body feelings, as they relate to NSSI, individual and total suicidal behaviors, and sexual orientation.. It was hypothesized that NSSI and individual suicidal behaviors would be more frequent in the sexual minority sample compared to the heterosexual sample, body protection and body feelings would be poorer in sexual minorities compared to the heterosexual sample, and low body protection and body feelings would be associated with increased NSSI and total suicidal behaviors. Results indicated no significant difference of prevalence of NSSI and suicidal behaviors between the heterosexual and sexual minority samples. However, sexual minorities reported more suicidal ideation. Increased suicidal behaviors and suicidal ideation, and decreased body protection were significantly correlated with sexual orientation. Decreased body protection was a significant predictor of NSSI frequency, and poor body feelings and decreased body protection were significant predictors of suicidal behavior for the whole sample. Findings of this study may provide direction for important sexual minority research and treatment.

*Keywords:* suicidal behaviors, NSSI, sexual minority, body image

Dedicated to my father and mother

## ACKNOWLEDGEMENTS

This project would not have been possible without the contribution of so many people. I first have to thank my research advisor and mentor, Dr. Amy Brausch, whose patience and hard work has motivated me throughout my academic career. Without her constant dedication and support, I would not be where I am today. I also would like to acknowledge every professor I have had throughout my undergraduate program for building a successful academic foundation.

Secondly, I would like to thank the Honors College and Department of Psychological Sciences at Western Kentucky University for providing me with the incredible opportunities to experience and conduct research.

Finally, thank you to all of my family and friends who have supported me throughout my education. Their unconditional support provided me with the motivation to go after my dreams and accomplish my goals.

## VITA

March 20, 1994.....Born – Somerset, Kentucky

2012.....Somerset Christian School, Somerset,  
Kentucky

2014.....Clinical Internship at Associates in  
Counseling and Psychology.  
Bowling Green, Kentucky

## PUBLICATIONS AND PRESENTATIONS

- Brausch, A. M., Williams, A. G., & Cox, E. M. (2016, early view). Examining intent to die and methods for nonsuicidal self-injury and suicide attempts. *Suicide and Life-Threatening Behavior*. DOI: 10.1111/sltb.12262
- Cox, E. M., Perry, K., & Brausch, A. M. (2016, April). Differences in NSSI, suicidal behaviors, and body protection in heterosexual and sexual minority young adults. Poster presented at the American Association of Suicidology Annual Conference in Chicago, IL.
- Floyd, P. N, Cox, E. M., & Brausch, A. M. (2015, November). Religious affiliation's impact on belongingness, burdensomeness, and suicidality. Poster presented at the Association for Behavioral and Cognitive Therapies Annual Convention, Chicago, IL.
- Williams, A. G., Cox, E., Doyle, A., & Brausch, A. M. (2015, April). The relationship between method of non-suicidal self-injury, method of suicide attempt, and intent to die in a sample of young adults. Poster presented at the American Association of Suicidology Annual Conference in Atlanta, GA.

## FIELDS OF STUDY

Major Field: Psychological Science

Minor Field: Child and Family Studies

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## CHAPTER 1

### INTRODUCTION

Sexual orientation has become an important topic for research because of the rising rates of non-suicidal self-injury (NSSI) and suicidal behaviors in the sexual minority population (Muehlenkamp, Hilt, Ehlinger, & McMillan, 2015). Although sexual minorities have been identified as a high risk group for such behaviors, the literature has not yet identified why this group has increased risk (Haas et al., 2011). Current research describes over 30 sexualities and gender identifications including bisexual, asexual, lesbian, queer, and transgender orientations among many others (Cramer, Chevalier, Gemberling, Stroud, & Graham, 2015). For the purpose of the current study, sexual minorities include anyone who is not sexually attracted to people of the opposite gender. There is a distinct difference between sexual orientation and gender identification. Sexual orientation is defined as a person's directness towards an activity or object for sexual arousal whereas gender identification is defined by what extent a person identifies with traits of masculinity and femininity (Ellis & Mitchell, 2000; Donelson & Gullahorn, 1977). It is important to establish this distinction because the current study focuses just on sexual orientation. Sexual minorities have been found to exhibit higher rates of stress than the general population which may be explained by the Minority Stress Theory (Blosnich & Bossarte, 2011).

## **Minority Stress Theory**

Minority stress theory is defined as abnormal stigma, discrimination, and prejudice experienced by minority groups which creates a more hostile social environment, causing mental health problems (Meyer, 1995). Three defining assumptions about minority stress further explain the theory. First, minority stress is unique in that it occurs in addition to regular stressors typically experienced by the general population. This implies minorities must have adaptation efforts differing from those not identified as a minority. Second, minority stress is chronic. Social or cultural views underlying the stress must be relatively stable. Finally, minority stress is socially based. The additional stressors must come from social structures or institutions outside of the individual's control and independent of institutions causing general stress (Meyer, 2003). Minority Stress Theory applies to all social minority groups including, but not limited to, race, sexual orientation, or even certain physical characteristics. Specifically, higher levels of affective disorders, substance abuse, and suicide have been found in sexual minorities compared to heterosexuals. As defined by the Minority Stress Theory, sexual minorities experience significant conflict between themselves and culture which creates a great amount of stress resulting in increased mental and physical illness (Clark, Anderson, Clark, & Williams, 1999).

## **Sexual Minorities and NSSI**

Sexual minorities exhibit higher rates of NSSI than the heterosexual population and are three to five times more likely to engage in NSSI than their heterosexual peers (Muehlenkamp, et al., 2015). NSSI is defined as the intentional destruction of body tissue without suicidal intent and for purposes not socially sanctioned (Klonsky &

Meuhlenkamp, 2007). Methods of NSSI include banging, scratching, burning, and cutting but exclude culturally acceptable activities such as tattooing and piercing and vary by severity and commonality, making study of this behavior complex (Klonsky & Muehlenkamp, 2007). Approximately 37% of non-heterosexual college students endorse general self-harming behavior, a significantly greater percentage than the general population which falls at approximately 15% (Borrill, Fox, Flynn, & Roger, 2009; Laye-Gindhu & Schonert-Reichl, 2005). However, the highest rates of NSSI seem to occur in non-heterosexual adolescents (Muehlenkamp et al., 2015). It is important to identify trends of NSSI because it has been identified as a precursor to suicidal behaviors (Reisner, Biello, Perry, Gamarel, & Mimiaga, 2014).

### **Sexual Minorities and Suicide**

Suicide is the second leading cause of death in sexual minority college students only to be preceded by unintentional injury (Centers for Disease Control and Prevention, 2014). Sexual minority adolescents are more than twice as likely to have attempted suicide than heterosexual students and similar frequencies are reported in college samples (Russell, & Joyner, 2001). In a recent meta-analysis, lifetime suicide prevalence was two times more likely in lesbian and bisexual women than heterosexual women and four times more likely in gay and bisexual men than heterosexual men (King et al., 2008). Suicide risk can be evaluated by measuring suicidal ideation, suicidal threats, self-harm, and suicide attempts independently or as a combination of all suicide behaviors. Although research has established sexual minorities as a high risk population for NSSI and suicidal behaviors, the literature lacks thorough explanation of why this is occurring.

One possible area of study that could explain high risk of suicide in sexual minorities is body image.

### **Body Image**

Body image is a multifaceted view of one's psychological experience within the physiological being, especially, but not limited to, physical appearance (Cash, 2004). The concept includes all body-related thoughts, feelings, beliefs, and behaviors as results of self-perceptions and self-attitudes which consist of two core-facets: evaluation and investment (Cash, 2002). Evaluation has more to do with body satisfaction whereas investment includes how important one deems their own physical appearance. Earlier research has found that the way physical appearance is perceived can have substantial influence on a range of experiences including first impressions, dating, employment opportunities, and friendship formation (Cash, 1990). However, more so than the social perception of one's appearance, the subjective view of oneself is even more powerful psychologically (Cash & Pruzinsky, 2002). The connection between the body and mental health is apparent through self-inflicted bodily harm as a coping mechanism (Bruch, 1973). In response to poor mental health, some people use self-harm as a means of regulating emotion.

Body image research has changed and developed over time and yet still has some inconsistencies. It originally began as an investigation of certain neurological body experience phenomena such as "phantom limb," "anosognosia," and "autopagnosia" (Fisher, 1990), while more recent clinical studies have focused on body image primarily in eating disorders in women (Cash & Pruzinsky, 2002; Thompson, 2004). However, this has limited the field to focus on the belief that body image predominately pertains to

women and deals with body weight and shape. For example, Ura and Preston (2015) examined the interaction between thin internalization, body image, and low self-esteem. The authors focused on the idea that the Western Civilization and the media's portrayal of "ideal thinness" has a greater effect on women's self-image compared to men. However, McCreary (2011) finds more specific aspects of body image, such as muscularity, to be more problematic for men. Even fewer studies examine trends for sexual minorities and non-traditional gender identifications. Researchers are beginning to focus on the incorporation and comparison of all people in body image research (Cash, Morrow, Hrabosky, & Perry, 2004). As stated, body image research is unfocused and inconclusive. It would be ideal for future literature to review the role of body image in terms of specific maladaptive behaviors, such as NSSI and suicide, so as to thoroughly explore body image as a predictive factor.

### **Body Image and NSSI**

There has been a lack of research examining possible etiological predictive factors for NSSI. Body image, specifically, has received limited attention (Cross, 1993). However, Orbach (1996) proposed that NSSI is perpetuated by negative body attitudes because there is contempt, disrespect for, and disassociation from the body, increasing the ability to harm oneself. The connection between NSSI and negative body image is supported by the Objectification Theory (Fredrickson & Roberts, 1997) which states that women internalize the societal pressures of body image and habitually self-monitor their bodies. The constant internalization of maladaptive thoughts about appearance and self-worth cause women to view their bodies as objects which perpetuates negative body image (Orbach, 1996). Specifically in women, as they develop a more negative body

image, their risk for psychological disorders such as depression and anxiety increases; people who experience these diagnoses are found to be more vulnerable to NSSI (Hoff & Meuhlenkamp, 2009; Nelson & Meuhlenkamp, 2012). However, a limitation in the literature is that the Objectification Theory only includes women. Little is known about how body objectification affects men. Looking at the relationship between gender and body objectification is an important direction for future research. Body dissatisfaction and disordered eating are possible risk factors for depression, low self-esteem, and anxiety, and NSSI is associated with the presence of these symptoms (Mishna, Newman, Daley, & Solomon, 2008). Many risk factors of NSSI are the same as risk factors for body dissatisfaction, including lack of parental support and negative affectivity (Bearman, Presnell, Martinez, & Stice, 2006). Although research has failed to thoroughly examine the associations between body feelings and NSSI, a recent study found higher levels of body dissatisfaction and disordered eating symptoms in participants with NSSI compared to participants without NSSI (Ross, Heath, & Toste, 2009; Whitlock, Meuhlenkamp, & Eckenrode, 2009). Similar trends are appearing with suicidal behaviors and body image.

### **Body Image and Suicidal Behaviors**

Body image differs between suicidal and non-suicidal individuals. People with negative body image are more likely to report suicidal behaviors than they are NSSI (Brausch & Meuhlenkamp, 2007; Orbach & Mikulincer, 1998). Pompili (2007) found a direct relationship between the construct of body-uneasiness and suicide risk. Although depression showed the strongest correlation to suicide risk, participants with more body uneasiness were more likely to exhibit suicide risk. The relationship between body image

and suicidal behaviors translates across genders and has been found to be an important factor in suicidality throughout adolescence and young adulthood (Brausch & Meuhlenkamp, 2007; Meuhlenkamp, Swanson, & Brausch, 2005).

### **Body Image in Sexual Minorities**

Past research in body image typically focuses on women as the study sample; however, more recent studies are including men (McCabe & Ricciardelli, 2004). Even fewer studies focus specifically on sexual minority students and those that do have rather complicated results; however, patterns are beginning to emerge. The gay community has been found to put increased emphasis on physical appearance and body image, which could possibly increase occurrences of body related bullying within the community (Beren, Hayden, Wilfley, & Grilo, 1996). Sexual minority men seem to be more negatively impacted by the pressures of the community than lesbian women. Similar to the heterosexual population, body dissatisfaction is gender related and is characterized by unhappiness with one's body shape and overall appearance (Neumark-Sztainer, Levine, Paxton, Smolak, Piran, & Wertheim, 2006).

**Men.** Gay men are more at risk for negative body image and body dissatisfaction as significant differences in body image and disordered eating behaviors were found when comparing homosexual and heterosexual men (Hadland, Austin, Goodenow, & Calzo, 2014). Approximately 27.8% of homosexual men experienced poor body image compared to only 12% of heterosexual men. The trend continued for frequent dieting (8.9% vs, 5.5%), binge eating (25% vs. 10.6%), and purging behaviors (11.7% vs. 4.4%) (French, Story, Remafedi, Resnick, & Blum, 1996).



**Women.** Findings about sexual minority women were comparable to research findings about heterosexual men. Lesbian women typically have less body dissatisfaction and are significantly less occupied with physical appearance than heterosexual women or gay men (Strong, Williamson, Netemeyer, & Greer, 2000). Although lesbian women are at a higher risk of binge eating disorder, they have better body perception than heterosexual women (Polimeni, Austin, & Kavanagh, 2009). It is possible that this is because lesbian women do not hold themselves to the “hetero-normative thin ideal” and embrace their own idea of beauty (Brown, Cash, & Mikulka, 1990).

### **Rationale and Hypothesis**

The literature establishes an increased risk of NSSI and suicidal behaviors for sexual minorities. People with NSSI and suicidal behaviors show poorer body image than those without NSSI or suicidal behaviors. Based on past research, it was first hypothesized that NSSI, prevalence of suicide attempt, suicidal ideation, and suicide threats would be more prevalent in sexual minorities than in heterosexual individuals. Second, it was hypothesized that body protection and body feelings, two facets of body image, would be negatively correlated with sexual orientation while suicide attempts, suicide threats, suicidal ideation, total suicide behaviors, and NSSI frequency would be positively correlated with sexual orientation. Lastly, it was hypothesized that low body protection and low body feelings, and sexual orientation would be associated with increased NSSI and total suicidal behaviors.

## **Method**

### **Participants**

The participants in this study included 552 undergraduate students enrolled in psychology courses at Western Kentucky University. All students were recruited from StudyBoard, WKU's online student participant pool, and received course credit for their participation. The sample consisted of mostly heterosexual (91.5%), Caucasian (74.3%), and freshmen (59.2%) students whose mean age was 19.59 years ( $SD=3.10$ ). The majority of participants were female (74.0%) or male (25.6%). One student identified as transgender and one identified as not sure. Students were asked to indicate sexual orientation from a list provided on the demographics page. The sexual minority participants ( $n=47$ ) identified as bisexual ( $n=23$ ), gay/lesbian/homosexual ( $n=16$ ), not sure ( $n=6$ ), and other ( $n=2$ ).

### **Procedure**

Participants came to the on campus research lab during the designated time slot chosen on StudyBoard. A maximum of five students were in the lab for the study during any one time slot. After reading and signing the informed consent document, participants completed a packet of questionnaires during the designated hour. However, if more time was needed, it was provided. Upon completion of the measures, participants proceeded to a private room within the lab where a Master's level student reviewed the packet for completion, and assessed the participant for suicide risk based on responses to critical items throughout the packet. If the student was determined to be at low risk, they were advised to make an appointment with the on campus counseling center. If the student was determined to be at moderate risk, the graduate student offered to make an appointment at

the counseling center for the participant and if the participant was at high risk, the graduate student escorted the participant to the counseling center. If no further clinical action was required, the participant was given the opportunity to ask questions and provided a debriefing sheet. Course credit was granted upon completion of the study.

## **Measures**

Participants completed a packet of self-report measures presented in the same order. The packet included multiple questionnaires, however, the current study only included three in the analyses. Demographic information was collected from a demographic sheet which asked students to report their age, gender, and sexual orientation.

### **Body Investment Scale**

The Body Investment Scale (BIS; Orbach & Mikulincer, 1998) is a 24-item measure that assesses four components of body investment: body feelings and attitudes, comfort with touch, body care, and body protection. Each subscale consists of six questions. Items are on a 5-point Likert Scale and range from 1 (*I do not agree at all*) to 5 (*I strongly agree*). Examples of items on the BIS include “I don’t like it when people touch me,” “I am satisfied with my appearance,” and “I believe that caring for my body will improve my well-being.” Mean scores are calculated for each subscale, and higher scores indicate more positive views of the body, more protection, more care, and more comfort with touch. Total body investment can be calculated by adding the scores of the subscales. Orbach and Mikulincer (1998) reported high internal consistency for all subscales: feelings and attitudes toward the body (.75), comfort in touch (.85), body care

(.86), and body protection (.92). For the current study, only the body feelings ( $\alpha=.89$ ) and body protection ( $\alpha=.63$ ) subscales were included in analyses.

### **Self-Harm Behavior Questionnaire**

The Self-Harm Behavior Questionnaire (SHBQ; Gutierrez, Osman, Barrios, & Kopper, 2001) is a partially open-ended measure which includes four subscales: lifetime NSSI, suicidal ideation, suicide threats, and past suicide attempts. It was originally developed as a supplement for clinical interviewing and allows for free response elaboration on method, thoughts, and plans. The coding system is designed so that responses are assigned a numerical value to represent them in statistical analyses. Values are weighted to represent the severity of the behavior. The subscale scores can also be totaled to provide a score that represents the overall severity of each self-harm behavior for an individual. A higher score indicates endorsement of more frequent and/or more severe self-harm. The SHBQ correlates highly with the Adult Suicidal Ideation Questionnaire (ASIQ; Reynolds, 1991) (.70) and the Suicide Behaviors Questionnaire-Revised (SBQ-R; Osman, Bagge, Gutierrez, Konick, Kopper, & Barrios, 2001). For the current study, Cronbach's alpha for the suicide attempt, suicidal ideation, and suicide threat subscale scores were .81, .80, and .80 respectively. Only these subscale scores were included in the current study.

### **Inventory of Statements About Self-Injury**

The Inventory of Statements About Self-Injury (ISAS; Klonsky & Glenn, 2009) measures behaviors and functions of NSSI. In part I of the measure, a list of common methods of self-injury is provided and participants are asked to report their lifetime frequency for each method. Additional questions about how long the participant has

endorsed NSSI, the level of pain experienced during NSSI, and if there is a desire to stop self-injury follows. Part II includes 39 questions that assess 13 functions of NSSI that load onto intrapersonal or interpersonal functions. Participants report their identification with the questions on a Likert scale ranging from 0 (*not relevant*) to 2 (*very relevant*). Scoring higher in the interpersonal and intrapersonal scales typically indicated higher scores on clinical measures (Klonsky & Glenn, 2009). The current study only included data from the first section of the ISAS to compute the NSSI frequency total.

### **Data Analysis**

All statistical analyses were run using SPSS 21.0. Chi-square analyses were run to compare the prevalence of NSSI and suicide attempts in the sexual minority and heterosexual groups. Spearman rank order correlations were run to identify correlations between suicidal behaviors, suicide threats, suicide ideation, body protection, body feelings, NSSI frequency and sexual orientation status. Lastly, linear regressions analyzed sexual orientation, body feelings, and body protection as predictors for NSSI frequency and total suicidal behaviors. Total suicidal behaviors were calculated by adding the self-harm, suicide attempt, suicide threats, and suicidal ideation SHBQ subscale scores. See Table 1 for descriptive statistics.

## Results

### Prevalence of NSSI, Suicide Attempts, Suicide Threats, and Suicidal Ideation

Out of the entire sample, 548 participants reported sexual orientation, including 505 heterosexual (91.49%) and 47 sexual minority (8.51%) participants. Thirty percent of the sexual minority sample reported lifetime NSSI, and 36% of the heterosexual sample reported lifetime NSSI. Chi-square analysis found no significant difference in prevalence between the two groups  $X^2(1, N=544) = .640, p=.42$ . The same results were found for the prevalence of suicide attempts; 11% of the sexual minority sample had lifetime prevalence of suicide attempts while 6% of the heterosexual sample had lifetime prevalence of suicide attempts. Chi-square analysis showed these percentages to be similar  $X^2(1, N =548) = 1.39, p=.24$ . Suicide threats were also similar between heterosexuals (6.2%) and sexual minorities (12.8%),  $X^2(1, N=548) = 2.95, p=.09$ . However, sexual minorities were significantly more likely to report suicidal ideation (43%) than heterosexual participants (25%),  $X^2(1, N=548) = 7.03, p<.01$ .

### Correlations with Being a Sexual Minority

To test the hypothesis that identifying as a sexual minority would be associated with more NSSI and suicidal behaviors, and poorer body image, Spearman's rank-order correlations examined the relationships between sexual orientation and: suicide attempts, suicide threats, suicidal ideation, total suicide behaviors, body protection, body feelings, and NSSI frequency. Subscale scores for suicidal behaviors were from the SHBQ (Gutierrez, et al., 2001), NSSI total frequency scores were from the ISAS (Klonsky & Glenn, 2009), and body image subscales were from the BIS (Orbach & Mikulincer, 1998) and used in the analyses. Identifying as a sexual minority was not significantly correlated

with suicide threats, poor body feelings, suicide attempts, or NSSI total frequency.

However, identifying as a sexual minority was significantly correlated with total suicidal behaviors, which is the total SHBQ (Gutierrez et al., 2001) score, ( $r_x=.12, p=.005$ ), increased suicide ideation ( $r_x=.12, p=.004$ ), and decreased body protection ( $r_x=-.10, p=.03$ ). See Table 2.

## **Regression Analyses**

### **NSSI Frequency**

To test the hypothesis that low body protection, low body feelings, and sexual orientation are predictors of NSSI, linear regression was used for the total sample. The overall model was not significant,  $F(3.533) = 2.34, p=.07$ , and  $R^2=.013$ . However, decreased body protection was a significant predictor of greater frequency of NSSI ( $\beta=-.14, p=.01$ ). Sexual orientation ( $\beta=-.04, p=.31$ ) and body feelings ( $\beta=.04, p=.40$ ) were not significant predictors of NSSI frequency.

### **Total Suicidal Behaviors**

To test the hypothesis that low body protection, low body feelings, and sexual orientation are predictors of suicide behaviors, linear regression was used for the total sample. The overall model was significant,  $F(3.538) = 24.48, p<.001$ , and explained 12% of the variance in the total SHBQ scores. The hypothesis was partially supported as poor body feelings ( $\beta=-.20, p<.001$ ) and decreased body protection ( $\beta=-.21, p<.001$ ) were significant predictors of increased total SHBQ (Gutierrez et al., 2001) suicide behaviors score. Similar to NSSI frequency, identifying as a sexual minority did not significantly predict total suicidal behaviors ( $\beta=.07, p=.09$ ).

## Discussion

The primary purpose of this study was to examine body image, body feelings, and sexual orientation as possible predictive factors for NSSI and suicidal behaviors. The first hypothesis was that NSSI, suicide attempts, suicide threats, and suicidal ideation would be more prevalent in sexual minorities compared to heterosexuals. This hypothesis was partially supported in that the results showed sexual minorities to have a significantly greater likelihood of reporting suicide ideation compared to heterosexuals which is expected based on past research (Russell, 2003). Russell's (2003) meta-analysis reviewed literature from the past 50 years which consistently found increased suicidality, including suicidal ideation, in sexual minority youth. However, despite convincing evidence from the literature, a few researchers continue to argue against the evidence of increased suicide risk in sexual minorities which supports the non-significant correlations between NSSI and suicide attempt prevalence and sexual orientation found in the present study (Savin-Williams, 2001). Savin-Williams (2001) presents four problems with suicide research with sexual minorities they feel to be responsible for non-representative information: assessing suicidality constructs with single item questions, inadequate sampling for the target population, using vague definitions for suicide related questionnaire items, and using invalid or unreliable measure to assess suicide attempt and sexual orientation. We found these problems to be present in the current study. The geographic location of WKU is a very rural and conservative area where exploration of any sexual orientation other than heterosexuality is not as socially acceptable as in more liberal parts of the United States. This limits the generalizability of the current study as our sample might not have accurately represented the diversity of the general population.



Although our results were not congruent with current literature, misrepresentation of the sexual minority population may be the explanation. Future research should continue to focus on sexual orientation, NSSI, and suicidal behaviors while controlling for the above-mentioned concerns.

We did find a higher prevalence of suicidal ideation in the sexual minority sample compared to the heterosexual sample. This means the sexual minority group experienced suicidal ideation significantly more than heterosexuals. Because we found this with such a small representation of sexual minorities, this could indicate that sexual minorities experience suicidal ideation more than other suicidal behaviors such as suicide attempts or suicidal threats.

The second hypothesis was that body protection and body feelings would be associated with sexual minority status. Although a significant correlation was not found between body feelings and sexual orientation, results did show that decreased body protection was correlated with being a sexual minority. Very few studies exist that address body protection and body feelings in sexual minorities and most sexual minority body image research only addresses a specific gender. Because body image is a difficult construct to measure, the gender specific research varies by how body image is measured. Some studies focus on men (Hadland et al., 2014) or women (McCabe & Ricciardelli, 2004) specifically, while some measure body image through physical aspects (Neumark-Sztainer et al., 2006) and others by body dissatisfaction (Hadland et al., 2014). It would be ideal for future research to explore various aspects of body image in sexual minorities.

Cronbach's Alphas for the body protection and body care subscales were lower than expected, especially when compared to the original validation study indicating that

the items may not have adequately measure body protection and body care. This is concerning considering our primary use of the body protection subscale. However, a possible explanation for the lower scores is that the original and subsequent validations of the Body Investment Scale typically include only adolescent samples and the current study included only college students. The Body Investment Scale may not be an as reliable measure of body protection or body care for college students as it is adolescents.

The third hypothesis was that low body protection, low body feelings, and sexual orientation would be associated with increased NSSI and suicidal behavior. This hypothesis was partially supported by the results as decreased body protection was as a significant predictor of NSSI frequency and suicidal behaviors. Poorer body feelings were also predictive of suicidal behaviors. Current research supports these results although much of body image research includes gender specific studies. Fredrickson and Roberts (1997) developed the Objectification Theory which states that women internalize the societal projections of what the body should look like. These internalizations lead women to see themselves as more of an object which decreases their self-respect and perpetuates negative body attitudes. This sense of negative body disregard increases their likelihood of engaging in NSSI or suicidal behaviors (Orbach, 1996). This theory supports the hypothesis in that it provides a direct connection between NSSI, suicidal behaviors, and body feelings and protection but only for women. Further research on objectification and men would be an informative contribution to the literature as this topic is not a common area for study.

Sexual orientation was not found to be a significant predictor of NSSI or suicide even though the literature establishes higher rates of NSSI and suicidal behaviors in

sexual minorities. This indicates a possible factor which may co-occur with sexual orientation to be the predictor of NSSI and suicidal behaviors. In order to better explain these relationships, future research should expand upon the current study and objectively measure sexual orientation, suicidal behaviors, NSSI, and the four facets of body image.

### **Limitations**

The current study has a few limitations, the first one being the lack of sample diversity. Because all participants were college students who are already at a higher risk for NSSI and suicidal behaviors compared to adults, the sample was not generalizable to other populations. This study also had only a small representation of sexual minority students, making it more difficult to study trends within that sub-sample. Additionally, the sexual minority sample had limited representation of the multiple non-heterosexual orientations (i.e. bisexual, homosexual, asexual, etc.) which may influence the representativeness of the final results. Because of gender trends in body image and self-harm research, data could be inaccurately representative of the population due to a majority female and Caucasian sample. Additionally, the measures used in this study were all self-report data which increases the possibility of variance due to self-report bias. Information could have been inaccurately reported. Objective measures would be a more accurate means of gathering these data. Finally, participants were not given the option to write in their sexual orientation and were limited to choosing items from a specific list, a possible limitation to our perception of the diversity of our sample. It would be beneficial for future studies to further measure sexual orientation in more depth.

## **Conclusion**

Although the study did not show a significant difference in the frequency of NSSI and suicidal behaviors between the sexual minority and heterosexual samples, results did indicate that sexual minorities were more likely to experience suicidal ideation than heterosexuals. The study also found that identifying as a sexual minority was associated with increased total suicidal behaviors, suicidal ideation, and decreased body protection. Sexual orientation and body feelings were not found to be significant predictors of increased NSSI; however, decreased body protection indicated a higher frequency of NSSI. Body feelings and body protection were also found to be significant predictors of suicide behaviors although sexual orientation was not. Considering the inconsistencies among the studies of NSSI and suicidal behaviors as they relate to body image and sexual orientation, it is crucial to continue research in this area.

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Table 1

*Descriptive Statistics of NSSI, SHBQ Scores, and Body Investment*

Scale	<i>n</i>	Range	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
NSSI Frequency (raw)	543	0-2402	48.24	184.59	7.74	75.23
NSSI Frequency (transformed)	543	0-49.01	3.06	6.24	3.20	13.41
Total Suicide Behaviors	552	0-67	7.25	11.89	2.09	4.92
Total Suicide Ideation	552	0-14	2.04	3.72	1.60	1.19
Total Suicide Threats	552	0-20	.83	3.28	4.07	16.02
Total Suicide Attempts	552	0-25	1.03	4.02	3.91	14.36
Body Protection	549	13-29	22.71	2.64	-.82	.86
Body Feelings	549	5-25	17.30	4.74	-.55	-.37

Table 2

*Correlation Matrix for Study Variables*

Scale	Suicide Attempts	Suicide Threats	Suicidal Ideation	Sexual Orientation	Body Feeling	Body Protection	NSSI Frequency	Total Suicide Behaviors
1 Suicide Attempts	1.00							
2 Suicide Threats	.171**	1.00						
3 Suicidal Ideation	.320**	.400**	1.00					
4 Sexual Orientation	.051	.076	.122**	1.00				
5 Body Feeling	-.195**	-.070	-.232**	-.079	1.00			
6 Body Protection	-.169**	-.071	-.227**	-.095*	.224**	1.00		
7 NSSI Frequency	.078	.060	.131**	-.021	-.056	-.051	1.00	
8 Total Suicide Behaviors	.513**	.503**	.930**	.121**	-.256**	-.215**	.140**	1.00

*Note:* \*  $p < .01$  \*\*  $p < .05$