

Western Kentucky University

TopSCHOLAR®

---

Masters Theses & Specialist Projects

Graduate School

---

Spring 2020

## An Application of the Interpersonal Psychological Theory of Suicide in College-Age Survivors of Sexual Assault

Ava Katherine Fergerson

Western Kentucky University, [ava.fergerson127@topper.wku.edu](mailto:ava.fergerson127@topper.wku.edu)

Follow this and additional works at: <https://digitalcommons.wku.edu/theses>



Part of the [Counseling Commons](#), [Psychology Commons](#), and the [Public Health Commons](#)

---

### Recommended Citation

Fergerson, Ava Katherine, "An Application of the Interpersonal Psychological Theory of Suicide in College-Age Survivors of Sexual Assault" (2020). *Masters Theses & Specialist Projects*. Paper 3210.  
<https://digitalcommons.wku.edu/theses/3210>

This Thesis is brought to you for free and open access by TopSCHOLAR®. It has been accepted for inclusion in Masters Theses & Specialist Projects by an authorized administrator of TopSCHOLAR®. For more information, please contact [topscholar@wku.edu](mailto:topscholar@wku.edu).

AN APPLICATION OF THE INTERPERSONAL PSYCHOLOGICAL THEORY OF  
SUICIDE IN COLLEGE-AGE SURVIVORS OF SEXUAL ASSAULT

A Thesis  
Presented to  
Faculty of the Department of Psychological Sciences  
Western Kentucky University  
Bowling Green, KY

In Partial Fulfillment  
Of the Requirements for the Degree  
Master of Science

By  
Ava K. Fergerson

May 2020

AN APPLICATION OF THE INTERPERSONAL PSYCHOLOGICAL THEORY OF  
SUICIDE IN COLLEGE-AGE SURVIVORS OF SEXUAL ASSUALT

Date recommended June 29, 2020

**Amy Brausch, PhD** Digitally signed by Amy Brausch, PhD  
Date: 2020.07.10 12:14:10 -05'00'

---

Director of Thesis Amy Brausch

**Jenni Teeters** Digitally signed by Jenni Teeters  
Date: 2020.07.10 12:32:23 -05'00'

---

Jenni Teeters

**Matthew Woodward** Digitally signed by Matthew Woodward  
Date: 2020.07.10 13:16:53 -05'00'

---

Matthew Woodward

**Ranjit T. Koodali** Digitally signed by Ranjit T.  
Koodali  
Date: 2020.07.14 15:09:54 -05'00'

---

Associate Provost for Research and Graduate Education

I dedicate this thesis to the many powerful, female mentors I have had throughout my life who have supported and encouraged me toward this achievement. Also, I dedicate this thesis to survivors of sexual violence who every day practice the power of resilience.

## ACKNOWLEDGEMENTS

I would like to acknowledge my research mentor, Dr. Amy M. Brausch, for helping me take on this research project and thesis, as well as for her generosity in sharing knowledge and experience throughout the last four years. I would also like to acknowledge the American Psychological Foundation for awarding to me a Graduate Research Scholarship, without which this project would not have been possible.

## TABLE OF CONTENTS

Introduction.....	1
Method.....	9
Results.....	16
Discussion.....	19
References.....	27

## LIST OF FIGURES

Figure 1. Acquired capability interacts with perceived burdensomeness to predict frequency of lifetime suicide attempts.....	32
---	----

## LIST OF TABLES

Table 1. T-test and chi-square comparison of sexually victimized and non-sexually victimized groups.....	33
Table 2. Means, standard deviations, and coefficient alphas for quantitative measures for sexually victimized vs. non-sexually victimized groups.....	34
Table 3. Correlations among quantitative study variables.....	35
Table 4. Multiple regression results for IPTS constructs predicting frequency of past-year suicide ideation and frequency of lifetime suicide attempts.....	36



AN APPLICATION OF THE INTERPERSONAL PSYCHOLOGICAL THEORY OF  
SUICIDE IN COLLEGE-AGE SURVIVORS OF SEXUAL ASSUALT

Ava K. Fergerson

May 2020

36 Pages

Directed by: Amy M. Brausch, Jenni Teeters, and Matthew Woodward

Department of Psychological Sciences

Western Kentucky University

Sexual victimization is a pervasive public health concern that disproportionately affects college students and results in severe mental and physical health risks for survivors. Despite low prevalence rates in the general population, a national study found that 33% of survivors of rape reported suicidal ideation, and 13% actually made a suicide attempt (Kilpatrick et al., 1992). Although it is clear that survivors of sexual violence are at increased risk for suicide, knowledge is largely limited to epidemiological studies. Few studies have integrated theories of suicide to understand how and why this population is at such elevated risk for suicidal thoughts and behaviors. This study aimed to investigate applicability of the Interpersonal-Psychological Theory of Suicide (IPTs) to suicide risk in survivors of sexual victimization. The hypotheses of the IPTs were applied to a sample of survivors of sexual assault. This study also analyzed time sequence of first sexual assault and onset of suicidal thoughts and behavior. Participants were 756 college students with an average age of 20.65 years ( $SD = 2.04$ ), with 320 participants reporting at least one experience of sexual victimization since the age of 14.

First, results indicated that survivors of sexual assault were more likely than those without a history of sexual assault to report past-year suicide ideation and at least one suicide attempt in their lifetime. Secondly, results indicated that the hypotheses of the IPTs were partially supported in that perceived burdensomeness positively predicted past year suicide ideation, but thwarted belongingness was not a significant predictor. Also,

perceived burdensomeness interacted with acquired capability to positively predict past suicide attempts. The interaction of perceived burdensomeness and acquired capability indicated that more frequent suicide attempts were reported when both perceived burdensomeness and acquired capability were high. Thwarted belongingness did not interact with acquired capability to predict suicide attempts. Finally, results indicated that onset of suicidal thoughts and behaviors before first experience of sexual victimization was more frequently reported than after first experience of sexual victimization, but this difference was not statistically significant. Future research should integrate interpersonal factors related to trauma symptoms in order to explicate the differential roles of perceived burdensomeness and thwarted belongingness in survivors of sexual assault who experience suicidal thoughts and behaviors.

## Introduction

Survivors of sexual victimization are approximately 2.5 times more likely to consider suicide and nearly three times more likely to attempt suicide than the general U.S. population (Kilpatrick, Edmunds, & Seymour, 1992). Among undergraduate students, 5% of males and 23% of females experience sexual violence; moreover, rates of sexual violence perpetrated against male and female college students are five and three times greater than adults of other ages, respectively (Bureau of Justice Statistics, 2014). Although it is clear that survivors of sexual violence are at increased risk for suicide, it is unclear what specific constellations of factors contribute to this risk. This study aimed to investigate applicability of the Interpersonal-Psychological Theory of Suicide (IPT) to suicide risk in survivors of sexual victimization. The IPT is a well-validated theory of suicide that focuses on the constructs of perceived burdensomeness, thwarted belongingness, and acquired capability for suicide. The results of this study may help in the development of integrated treatments of PTSD and suicidality for survivors of sexual victimization.

### **Sexual Victimization in College Students**

Sexual victimization is a pervasive public health concern that disproportionately affects college students and results in severe mental and physical health risks for survivors. Approximately 43.9% of women and 23.4% of men report experiencing some form of sexual violence in their lifetime (i.e., nonconsensual penetration, sexual touching, sexual coercion, etc.; Breiding, Smith, Basile, Walters, Chen & Merrick, 2014). Moreover, undergraduate college students are at elevated risk for sexual violence, compared to adults of other ages (Bureau of Justice Statistics, 2014). For example, a

study of sexual violence at the University of Virginia found that 23.8% of female and 4.5% of male undergraduate students had experienced some form of sexual violence since entering university, with 11.2% of females and 1.2% of males having experienced nonconsensual penetration (i.e. rape; Cantor et al., 2015). Unfortunately, Cantor et al.'s (2015) results are not unique. In fact, another study of sexual violence at two large, public universities found that of 5,446 undergraduate females and 1,375 males, 19% and 6.1% respectively, reported experiencing attempted or completed sexual assault (i.e., nonconsensual sexual touching, penetration, or oral sex) since entering university (Krebs, Lindquist, Warner, Fisher, & Martin, 2007). Sexual violence is a pervasive issue for college students that frequently bears deleterious consequences for survivors.

Approximately 70% of survivors of sexual violence experience moderate to severe distress after the assault – a greater proportion than that of other violent crimes (Bureau of Justice Statistics, 2014). In fact, a recent meta-analysis identified suicidality as the most common psychopathology experienced after sexual violence (Dworkin, Menon, Bystrynski, & Allen, 2017).

### **Suicide in Survivors of Sexual Victimization**

Although 13.5% of adolescents and adults report lifetime suicidal ideation, only 4.6% actually make a suicide attempt in their lifetime (Kessler, Borges, & Walters, 1999), and fewer actually die by suicide, as suicide accounts for 1.7% of deaths in the United States per year (Drapeau & McIntosh, 2018). Despite low prevalence rates in the general population, a national study found that 33% of survivors of rape reported suicidal ideation, and 13% actually made a suicide attempt (Kilpatrick et al., 1992); however, this study did not evaluate the time sequence of first victimization and onset of suicidality.

Other empirical studies have found similar results, demonstrating that survivors of sexual victimization were 2 to 3 times more likely to contemplate suicide, and 1.5 – 4 times more likely to attempt suicide than non-sexually victimized peers (Ellsberg, Jansen, Heise, Watts, & Garcia-Moreno, 2008; Howard & Wang, 2005). Although it is clear that survivors of sexual violence are at increased risk for suicide, knowledge is largely limited to epidemiological studies. This literature is useful in identifying sexual violence as a risk factor for suicide, but the underlying mechanisms of this relation are largely unknown. Few studies have integrated theories of suicide to understand how and why this population is at such elevated risk for suicidal thoughts and behaviors. The Interpersonal Psychological Theory of Suicide may be utilized to better understand the empirical relationship between sexual violence and suicidal thoughts and behaviors.

### **Explanation of Interpersonal Theory of Suicide Constructs**

The Interpersonal Psychological Theory of Suicide (IPTS; Joiner, 2005) is a well-studied framework for conceptualizing suicidal thoughts and behaviors. Principally, the IPTS asserts that one is not likely to die by suicide unless one has both the desire for death and the ability to end one's own life. The desire for death, operationalized as suicidal ideation, occurs when one experiences both *thwarted belongingness*, a diminished sense of belonging in their social world, and *perceived burdensomeness*, the feeling that one does not contribute to the welfare of others and is a burden upon others. The combination of thwarted belongingness and perceived burdensomeness produce the desire for death. When both of these are present, one is likely to make a suicide attempt if one also has *acquired capability for suicide*. Acquired capability for suicide is comprised of two components: heightened pain tolerance and fearlessness about death,

both of which influence one's ability to enact violence against oneself. Repeated exposure to painful and provocative events is proposed to bolster the ability to enact violence against oneself by habituating the individual to the fear and pain experienced in suicide (Joiner, 2005).

Psychologically provocative events include fear-inducing experiences that are directly and indirectly related to suicide. Provocative events directly related to suicide include rehearsal or mental practice for a suicide attempt; and those indirectly related to suicide include risky activities, like self-injecting drug use and skydiving, or physical and sexual violence (Smith & Cukrowicz, 2010). Physically painful events also include those directly and indirectly related to suicide. Painful events directly related to suicide include nonsuicidal self-injury and non-lethal suicide attempts; and those indirectly related to suicide include accidental injury or violence (Smith & Cukrowicz, 2010). Note, however, that painful and provocative experiences are not limited to the examples given.

Under these operational definitions, sexual victimization qualifies as a painful and provocative event, as it can be both physically painful and fear-inducing. Although experiences that are more analogous to suicide are most likely to facilitate acquired capability, the greater the pain and fear induced by an event, the more likely it is that it will facilitate acquired capability (Smith & Cukrowicz, 2010) However, because acquired capability is not independently sufficient for suicide (Joiner, 2005), not everyone who develops acquired capability for suicide will actually engage in suicidal behavior. In order for an individual to make a serious suicide attempt, they must also experience the desire for suicide.

Empirical evaluation supports the assertions of the IPTS: 1) that perceived burdensomeness and thwarted belongingness are related, but distinct constructs of which the joint presence will likely result in the desire for death, 2) that repeated exposure to painful and provocative events increase the ability to inflict lethal injury upon oneself, and 3) that both the desire for death and the acquired capability for suicide are necessary, but not independently sufficient, for suicidal behavior (Van Orden, Witte, Gordon, Bender, & Joiner, 2008). However, the unique constellation of risk factors for a suicide attempt are somewhat rare, as only a fraction of those who experience suicidal ideation actually make a suicide attempt in their lifetime (Kessler et al., 1999). Nonetheless, the number of survivors of sexual victimization who attempt suicide in their lifetime is nearly three times greater than that of the general population (Kilpatrick et al., 1992). This disproportionate relation remains largely unspecified as it is presently unknown whether and in which ways suicidal, sexually-victimized persons differ from suicidal, non-sexually-victimized persons. One goal of this study is to examine patterns of suicidality in relation to sexual victimization in the context of the IPTS to identify potential underlying mechanisms that contribute to suicide risk.

### **Previous Evaluation of the IPTS in a Sexually Victimized Population**

Although most studies have not examined those exposed to sexual trauma specifically, several tests of the IPTS have utilized military or veteran samples (e.g., Anestis, Khazem, Mohn, Green, 2015; Bryan, Morrow, Anestis, & Joiner, 2010; Monteith, Menefee, Pettit, Leopoulos, & Vincent, 2013). One study utilized an inpatient veteran sample to evaluate two hypotheses of the IPTS: 1) Perceived burdensomeness, thwarted belongingness, and their interaction would predict suicide ideation, and 2)

Perceived burdensomeness, thwarted belongingness, acquired capability for suicide, and their interaction would predict past suicide attempts (Monteith et al., 2013). Results indicated that perceived burdensomeness, but not thwarted belongingness, was significantly predictive of suicide ideation. The interaction of the constructs was significant, indicating that thwarted belongingness predicted suicide ideation in the presence of high levels of perceived burdensomeness. Regarding the second hypothesis, results also found significant interactions between perceived burdensomeness and acquired capability, and between thwarted belongingness and acquired capability, but the three-way interaction of these constructs did not significantly predict past suicide attempts. Researchers speculate that this non-significant three-way interaction was related to lack of report of date of first or last suicide attempt, meaning that some participants could have made an attempt many years in the past, making it difficult to detect an effect (Monteith et al., 2013). However, this result is consistent with findings from other military samples (Bryan et al., 2010). Both studies controlled for depression and PTSD symptoms in regression analyses (Bryan et al., 2010; Monteith et al., 2013). Although these studies used trauma-exposed samples, the results may not necessarily generalize to more specific forms of trauma. To date, one study has evaluated the hypotheses of the IPTS in a sexually-victimized sample of veterans.

A study of a clinical sample of female veterans ( $n = 97$ ) with a self-reported history of military sexual trauma (MST) assessed participants on the three components of the IPTS (i.e. perceived burdensomeness, thwarted belongingness, and acquired capability for suicide, measured as fearlessness about death), as well as for PTSD symptoms, depressive symptoms, and lifetime history of suicide ideation and suicide



attempts (Monteith, Bahraini, & Menefee, 2017). The goal of this study was to determine whether the IPTS constructs were associated with suicide ideation in survivors of MST when controlling of other psychiatric factors, such as depression and previous suicide attempts.

Hierarchical linear regression was used to examine the hypothesis that each IPTS construct would be uniquely associated with suicide ideation. Results showed that each construct was independently and uniquely associated with suicide ideation when controlling for psychiatric factors and previous suicide attempts. However, when all three constructs were included in the model, only perceived burdensomeness and fearlessness about death were significantly related to suicide ideation. This is similar to the findings of Monteith et al. (2013), which may indicate a pattern specific to military samples. This could also indicate that thwarted belongingness may play a less important role in suicide ideation among survivors of MST, despite the feelings of alienation that one might expect survivors to experience. Additionally, fearlessness about death was found to be the most robust predictor of suicide ideation among the three constructs (Monteith et al., 2017).

Results of this study provide helpful preliminary evidence of the associations among the IPTS constructs and suicidal thoughts in survivors of sexual assault. Although this study had a number of strengths, including that it was the first of its kind to apply the IPTS to a sexually victimized sample, improvements could be made in future research. For example, use of a clinical military sample limits the generalizability of the results because military personnel experience unique stressors regarding their experience of sexual violence that may influence psychological outcomes. Moreover, use of an all-

female sample precludes understanding of gender differences among survivors. Additionally, the operational definition of suicide thoughts and behaviors was limited only to lifetime suicide ideation. Expanding the hypotheses to test also whether the IPTS constructs are predictive of suicide attempts would perhaps illuminate other unique risk factors. Furthermore, participants in this study were not asked to report the date of first or most recent sexual victimization; therefore, the sequencing relation between sexual victimization and onset of suicidality could not be observed. The present study aims to address these limitations.

### **Rationale for Current Study**

The IPTS has been evaluated in numerous populations to determine whether it is truly a universal theory (e.g., Chu et al., 2017; Ma, Batterham, Calear, & Han, 2016); however, survivors of sexual assault have received little attention in research in regard to this theory. One study that evaluated the IPTS in veteran survivors of MST found that the assertions of the IPTS were largely supported (Monteith et al., 2017). Monteith et al. (2017) is the only study to date that specifically assessed IPTS constructs, rather than proxy variables. Further research is warranted to determine if these results can be replicated in a civilian sample of survivors. Furthermore, if the assertions of the IPTS are universally supported, including in a sexually victimized sample, then the disparity in rates of suicidal thoughts and behaviors in the target population would remain unexplained by the IPTS alone.

Given the significant risk for suicide among survivors of sexual victimization (e.g., Kilpatrick et al., 1992), identification of transdiagnostic risk factors is necessary. The aim of this study was to examine whether the constructs of the IPTS (perceived

burdensomeness, thwarted belongingness, and acquired capability for suicide) and their proposed interactions are associated with suicidal thoughts and behaviors among college-age survivors of adulthood sexual victimization. Additionally, this study aimed to observe the sequencing relation among first experience of sexual victimization and onset of suicidal thoughts and behaviors. First, it was expected that experiencing sexual victimization would increase the likelihood of reporting suicidal ideation in the past year and suicide attempts in their lifetime. Secondly, it was expected that thwarted belongingness and perceived burdensomeness would interact with acquired capability to predict lifetime suicide attempts in this group. Lastly, it was expected that thwarted belongingness and perceived burdensomeness would predict frequency of past year suicide ideation in survivors of adulthood sexual victimization. This study also took an exploratory look at the sequencing relation between first experience of sexual victimization and onset of suicidal thoughts and behaviors. Specifically, this study analyzed whether onset of suicidal thoughts and behaviors was more commonly reported before or after first sexual victimization in a sample of those who reported both sexual victimization and suicidal thoughts and behaviors at the time of the survey.

## Method

### **Participants**

Data were collected from 969 graduate and undergraduate students at Western Kentucky University (WKU) between 18 – 26 years of age. To be included in the sample for hypothesis testing, participants must have reported at least one experience of sexual assault or rape since the age of 14. These age ranges were determined based on the results of a study that found that experiences of sexual victimization in adolescence (ages

14 – 17) were more characteristically and contextually similar to those of adulthood (ages 18+) than to those of childhood (Livingston, Hequembourg, Testa, & VanZile-Tamsen, 2007). Participants who reported experiences of sexual assault or rape that occurred exclusively in childhood (n = 14) did not meet inclusion criteria for the study and were not included in the selected sample. Additionally, participants who reported experiences of sexual coercion, but not experiences of attempted or completed sexual assault or rape, were not included in the selected sample. Participants who reported having an experience of sexual assault but did not report the age at which it happened (n = 33) were not included in the selected sample because it was unknown whether the assault(s) happened in adulthood or childhood. Other exclusion criteria were duplicate participation (n = 16), completing the survey in less than three minutes (n = 146), and extremely high suicide ideation frequency in the past year (e.g., 20,000 or more occasions of ideation; n = 2).

After removing participants for the reasons above, the sample of eligible participants included 756 students with an average age of 20.65 years (SD = 2.04), with 320 participants reporting at least one experience of sexual victimization since the age of 14. Among those 756 participants, 78.7% identified as women, 18.8% men, and 2.4% trans or nonbinary individuals. The majority identified as heterosexual (74.5%) and White (86.1%). The remaining participants identified as 14.7% bisexual, 4.5% lesbian/gay, 2.6% pansexual, 0.5% asexual, 0.8% other, and 2% not sure, as well as 4.6% Black, 3.3% Hispanic/Latinx, 2.4% Multi Ethnic, 2% Asian, and 1.2% Other. T-test and chi-square analyses demonstrated no significant differences in mean age ( $t = -.90, p > .05$ ), gender ( $\chi^2(6) = 10.7, p > .05$ ), sexuality ( $\chi^2(7) = 11.7, p > .05$ ) or ethnicity ( $\chi^2(6) = 2.1, p > .05$ ) among those included versus excluded from the study sample. Additionally,

t-test and chi-square analyses demonstrated no significant difference in mean age ( $t = 1.65, p > .05$ ) or sexuality ( $\chi^2 (7) = 12.17, p > .05$ ) among included participants with a history sexual victimization versus those with no history of sexual victimization. However, chi-square analyses indicated significantly different gender ( $\chi^2 (6) = 66.11, p < .001$ ) and ethnicity ( $\chi^2 (6) = 12.73, p < .05$ ) representations among these groups (see *Table 1*).

### **Procedure**

Before beginning data collection, approval was obtained from the WKU IRB. Respondents were recruited to complete an online questionnaire via mass email to all WKU students. To encourage response, those who participated were entered into a raffle to win one of thirty-five \$20 gift cards. Data collection was anonymous, and names and emails for gift card distribution were stored separately from the data.

Before beginning the questionnaire, participants signed an informed consent document disclosing the purpose, explanation of procedures, risks, and benefits of the study, as well as the right to refuse or withdraw from the study at any time. Participants were able to skip any questions that they did not wish to answer and could exit the survey by closing their web browser at any time. If participants indicated that they had made a suicide attempt in the past year and/or indicated that they have experienced sexual assault, a pop-up window appeared containing information about available crisis resources. Participants clicked to acknowledge that they read the crisis information before returning to the survey. Upon completion of the survey, participants received basic information about mental health and emotional support services available to students on campus and in the local community.

## Measures

*Sexual experiences survey.* Koss and Oros' (1982) Sexual Experiences Survey (SES) assessed participants' experiences with various forms of sexual assault and harassment, including coercion, attempted assault and rape, and completed assault and rape. For the purposes of this study, all questions were revised to use gender neutral wording. In this measure, *coercive experiences* were assessed in questions such as "Have you ever found out that someone had obtained sexual intercourse with you by saying things they didn't really mean?" and "Have you ever had sexual intercourse with someone when you didn't really want to because you felt pressured by their continual arguments?" (Koss & Oros, 1982). *Attempted sexual assault and rape* were assessed via questions such as "Have you ever been in a situation where someone tried to get sexual intercourse with you when you didn't want to by threatening to use physical force (twisting your arm, holding you down, etc.) if you didn't cooperate, but for various reasons sexual intercourse did not occur?" (Koss & Oros, 1982).

Next, assessment of *completed sexual assault and rape* were respectively measured in questions such as "Have you ever been in a situation where someone used some degree of physical force (twisting your arm, holding you down, etc.) to try to make you engage in kissing or petting when you didn't want to?", and "Have you ever had sexual intercourse with someone when you didn't want to because they used some degree of physical force?" (Koss & Oros, 1982). Although the previous question alluded to the legal definition of rape without using the word *rape*, the survey concludes with the question "Have you ever been raped?" (Koss & Oros, 1982). For each question to which

a participant answered *yes*, skip-logic ensued with the follow-up questions “How many times?” and “How old were you?” (Koss, & Oros, 1982).

This measure included thirteen questions that warrant dichotomous *yes* and *no* responses (*yes* = 1, *no* = 0). In the event of a *yes* response, the follow-up response for number of occasions would remain a numeric response. In an empirical review of reliability and validity of the SES, women’s self-reported level of victimization on the SES was highly correlated with level of victimization when interviewed by a researcher ( $r = .73$ ,  $p < .001$ ; Koss & Gidycz, 1985).

*Post-traumatic stress disorder checklist-5.* The Post Traumatic Stress Disorder Checklist 5 (PCL-5) assessed participants’ present trauma symptoms (Weathers, Litz, Palmieri, Marx, & Schnurr, 2013). Participants were instructed to keep in mind the experiences they previously described in the SES when answering the PCL-5 questions. The PCL-5 is a 20-item questionnaire that asks participants to report how much they are bothered, in the previous month, by symptoms such as “Repeated, disturbing, and unwanted memories of the stressful experience,” “Feeling very upset when something reminds [them] of the stressful experience,” and “Trouble remembering important parts of the stressful experience” (Weathers et. al, 2013). Participants responded on a Likert scale to report how much they were bothered, ranging from *not at all* = 0 to *extremely* = 4. Responses for each were coded accordingly and summed to create composite scores that reflect degree of trauma symptoms experienced by individual participants and does not provide conclusive diagnostic information. Validity studies of this measure revealed high internal consistency ( $\alpha = .94$ ) and high test-retest reliability ( $r = .82$ ; Belvins, Weathers, Davis, Witte, & Domino, 2015). Internal consistency for the current study

was adequate ( $\alpha = .77$ ). For a table of means, standard deviations, and coefficient alphas for quantitative measures for sexually victimized vs. non-sexually victimized groups, see *Table 2*.

*Self-injurious thoughts and behaviors interview.* The Self-Injurious Thoughts and Behaviors Interview (SITBI) was used to assess a range of participants' thoughts, behaviors, and impulses related to non-suicidal self-injury (NSSI) and suicide, including lifetime history and occurrence within the last year (Nock, Holmberg, Photos, & Michel, 2007). Nock and colleagues' (2007) validation study for this measure demonstrated strong test-retest reliability from initial assessment to six-month follow up on the presence or absence of, as well as lifetime frequency for the following constructs: suicidal ideation ( $\kappa = .70$ , ICC = .74), suicide attempt ( $\kappa = .80$ , ICC = .50), and NSSI ( $\kappa = 1.0$ , ICC = .71). Test-retest reliability for suicide plan presence or absence was strong ( $\kappa = .71$ ), but weaker for lifetime frequency (ICC = .23) (Nock et al, 2007). Test-retest reliability was poor for suicide gesture presence or absence ( $\kappa = .25$ ), as well as for lifetime frequency (ICC = .01, *ns*); however, researchers suggested that this was due to fewer reports of suicide gesture at the time of six-month follow-up (Nock et al., 2007). Regarding the aforementioned thoughts and behaviors, participants completed self-report questions about age of onset, frequency, methods, etc. (Nock et al, 2007). Specifically, participants were asked the questions "Have you ever had thoughts of killing yourself?" (suicide ideation), "Have you ever made an actual attempt to kill yourself in which you had at least some intent to die?" (suicide attempt), and "Have you ever purposely hurt yourself without wanting to die?" (NSSI) to which they could respond *yes* or *no*. In the event of an affirmative response, participants were asked follow-up questions regarding



onset, frequency, recency, and method (Nock et al., 2007). When frequency of past year suicide ideation and lifetime suicide attempts was tested for skewness within the selected sample, both variables were highly positively skewed (see *Table 2*).

*The acquired capability for suicide scale – Short form* (ACSS; Van Orden, Witte, Gordon, Bender, & Joiner, 2008) is a four-item questionnaire assessing one's degree of fearlessness about lethal self-harm. Statements are provided, and participants must respond on a five-point Likert scale with options ranging from 0 (*not at all like me*) to 4 (*very much like me*). For example, participants rated their agreement with statements like "The fact that I am going to die does not affect me," and "I can tolerate more pain than most people" (Van Orden, et al., 2008). The ACSS has demonstrated good convergent and discriminant validity, as well as adequate reliability ( $\alpha = .67$ ; Van Orden et al., 2008). Internal consistency for the current study was high ( $\alpha = .80$ )

*Interpersonal needs questionnaire.* The Interpersonal Needs Questionnaire (INQ) is a 15-item scale designed to assess respondents' sense of thwarted belongingness and perceived burdensomeness (Van Orden, Cukrowicz, Witte, & Joiner, 2012). Respondents were presented with statements about themselves to which they expressed their agreement on a seven-point Likert scale, ranging from 1 (*not at all true for me*) to 7 (*very true for me*). The measure included six statements assessing perceived burdensomeness, such as "These days, the people in my life would be better off if I were gone," and "These days, I think I am a burden on society." Nine statements assessed thwarted belongingness, for example "These days, I feel like I belong," "These days, I feel disconnected from other people," and "These days, I feel that there are people I can turn to in times of need" (Van Orden et al., 2012). Reliability and validity assessment of

this measure support the IPTS assertion that thwarted belongingness and perceived burdensomeness are related, but separate constructs (Van Orden et al., 2012). The INQ scales have demonstrated at least adequate internal consistencies (INQ-PB  $\alpha = .90$ , INQ-TB  $\alpha = .64$ ; Van Orden et al., 2012). Internal consistency for the current study was high (INQ-PB  $\alpha = .98$ ; INQ-TB  $\alpha = .92$ ). For a table of correlations among quantitative study variables, see *Table 3*.

## Results

### **Hypothesis 1**

Chi-square analysis was used to test the hypothesis that experiencing sexual victimization would increase the likelihood of reporting past year suicidal ideation and lifetime suicide attempts. For this analysis, those who reported having at least one experience of sexual victimization since the age of 14 ( $n = 320$ ) were compared to those who did not report any experiences of sexual victimization in their lifetime ( $n = 436$ ). Results showed that 41.3% of those with a history of sexual victimization since age 14 reported past year suicide ideation, versus 19.6% of those with no history of sexual victimization. This difference was statistically significant, indicating that those with a history of sexual victimization had a higher likelihood of reporting past year suicide ideation than those with no history of sexual victimization,  $\chi^2(1) = 42.16, p < .001$ . Additionally, results showed that 15.3% of those with a history of sexual victimization since age 14 reported having made at least one suicide attempt in their lifetime, versus 3.4% of those with no history of sexual victimization. This difference was statistically significant, indicating that those with a history of sexual victimization had a higher

likelihood of reporting at least one suicide attempt in their lifetime than those with no history of sexual victimization,  $\chi^2(1) = 22.83, p < .001$ .

## **Hypothesis 2**

First, to test the hypothesis that thwarted belongingness and perceived burdensomeness would predict past year frequency of suicide ideation in survivors of sexual victimization, a hierarchical linear regression was run. The PCL-5 composite scores were entered in the first step of the model to control for variance due to PTSD symptomology. Next, thwarted belongingness and perceived burdensomeness scores were entered simultaneously in the second step of the model. Regression analyses indicated that the addition of thwarted belongingness and perceived burdensomeness added a small, but significant portion of variance to the model,  $\Delta R^2 = .052, F(2, 262) = 7.40, p < .001$ . However, only burdensomeness was predictive of frequency of past year suicide ideation above and beyond PTSD symptoms,  $\beta = .262, t(264) = 3.27, p < .01$ ; belongingness was not a significant predictor,  $\beta = .012, t(264) = .157, p > .05$  (see *Table 4*).

## **Hypothesis 3**

The third hypothesis, that thwarted belongingness and perceived burdensomeness would interact with acquired capability to predict frequency of lifetime suicide attempts in the sexually victimized group, was tested via hierarchical linear regression. Composite scores for thwarted belongingness, perceived burdensomeness, and acquired capability were mean-centered and interaction terms were created (i.e., acquired capability X thwarted belongingness, acquired capability X perceived burdensomeness). PCL-5 scores were entered into the first step of the model to control for PTSD symptomology.

In the second step of the model, mean-centered scores for thwarted belongingness, perceived burdensomeness, and acquired capability were entered simultaneously. Lastly, the interaction terms were entered into the third step of the model. Regression analyses indicated that the overall model was significant, and the addition of the IPTS constructs was associated with a significant increase in variance in predicting frequency of lifetime suicide attempts, above and beyond PTSD symptoms,  $\Delta R^2 = .074$ ,  $F(3, 261) = 7.57$ ,  $p < .001$ . However, perceived burdensomeness and acquired capability were the only significant predictors of frequency of lifetime suicide attempts ( $\beta = .253$ ,  $t(264) = 3.26$ ,  $p < .01$  and  $\beta = .208$ ,  $t(264) = 3.55$ ,  $p < .001$ , respectively), as thwarted belongingness was not a significant predictor ( $\beta = -.116$ ,  $t(264) = -1.53$ ,  $p > .05$ ). Addition of the interaction terms to the regression model accounted for a small but significant portion of variance above and beyond the previous steps,  $\Delta R^2 = .043$ ,  $F(2, 259) = 6.94$ ,  $p < .01$ . However, only the acquired capability X perceived burdensomeness interaction was predictive of frequency of lifetime suicide attempts ( $\beta = .247$ ,  $t(264) = 3.69$ ,  $p < .01$ ), as the acquired capability X thwarted belongingness interaction was not significant ( $\beta = -.102$ ,  $t(264) = -1.53$ ,  $p > .05$ ; see *Table 4*). Simple effects analysis of the acquired capability X perceived burdensomeness interaction indicated that there was a stronger association between perceived burdensomeness and suicide attempt frequency when acquired capability was higher compared to lower ( $F(1, 279) = 8.25$ ,  $p < .01$ ; see *Figure 1*).

#### **Exploratory Hypothesis 4**

To analyze the exploratory hypothesis regarding whether onset of suicidal thoughts and behaviors was more commonly reported before or after first sexual victimization, frequencies were tested in a sample of those who reported both a history of

adult sexual victimization and lifetime suicidal thoughts and/or behaviors (n = 190). Of this group, 43.7% (n = 83) reported onset of suicidal thoughts and/or behaviors before, and 26.8% (n = 51) reported onset of suicidal thoughts and/or behaviors after first experience of sexual victimization. Some participants in this group did not remember when onset of suicidality began (6.3%, n = 12), and 23.2% (n = 44) of participants in this group did not respond when asked.

### Discussion

The broad purpose of this study was to examine suicidality in survivors of sexual assault through a theoretical lens. One specific aim of this study was to examine whether the constructs of the IPTS (perceived burdensomeness, thwarted belongingness, and acquired capability for suicide) and their proposed interactions are associated with suicidal thoughts and behaviors among college-age survivors of adulthood sexual victimization. Additionally, this study aimed to observe the sequencing relation among first experience of sexual victimization and onset of suicidal thoughts and behaviors. Hypothesis 1 was supported in that survivors of sexual assault were more likely than non-survivors to report past-year suicide ideation and at least one suicide attempt in their lifetime. Within this sample, survivors of sexual assault were approximately two times as likely to report past year suicide ideation and approximately five times as likely to report at least one suicide attempt in their lifetime, compared to those without a history of sexual assault. Although not all forms of painful and provocative life events were assessed in this study, this result lends support to the IPTS hypothesis that painful and provocative events increase risk for suicidal behavior. Moreover, this result supports

sexual victimization as a painful and provocative event that may contribute to increased risk for suicidal behavior.

Hypothesis 2 was partially supported by results of a hierarchical linear regression. The regression model indicated that perceived burdensomeness positively predicted past-year frequency of suicide ideation, above and beyond PTSD symptomology, in survivors of sexual victimization. However, thwarted belongingness was not uniquely predictive of suicide ideation frequency. Although the second step of the regression model was statistically significant, only perceived burdensomeness was significantly associated with more frequent ideation in the past year. The finding that perceived burdensomeness was associated with suicide ideation is similar to other findings in military, trauma-exposed samples (e.g. Monteith et al. (2013); Monteith et al. (2017)). The lack of association between thwarted belongingness and suicide ideation is similar to that of Monteith et al. (2013), in which perceived burdensomeness, but not thwarted belongingness, was significantly predictive of suicide ideation in a sample of veterans. However, the results of Monteith et al. (2017) indicated that thwarted belongingness was significantly predictive of suicide ideation, but not when included in a model with perceived burdensomeness and acquired capability. Regarding the current study, although the second step of the model accounted for a significant portion of variance, perceived burdensomeness carried the weight. This pattern of results in trauma-exposed samples could be related to the influence of trauma symptoms on interpersonal relationships. The current study used the PCL-5, an assessment of intrapersonal experiences of trauma symptoms, to assess PTSD symptomology, and the INQ was used to assess needs in interpersonal relationships. So, although statistical analyses controlled for individuals'

intrapersonal experience of PTSD symptoms, the interpersonal effects of individuals' PTSD symptoms were unaccounted for. It is possible that interpersonal factors, such as social support, could be a third variable in the relationship between sexual victimization and the desire for death. For example, if survivors of trauma are receiving social support, feelings of thwarted belongingness may be alleviated, but survivors may still feel that they are a burden on others. Additionally, symptoms of PTSD that are specifically related to interpersonal experiences, such as irritable behavior or avoidance of external reminders of the trauma, could be explored within this context. Future research should integrate interpersonal factors related to PTSD symptoms as mediators in the relationship between sexual trauma and suicidality.

Next, hypothesis 3 was partially supported in a hierarchical linear regression model. The regression model indicated that perceived burdensomeness, but not thwarted belongingness, interacted with acquired capability to predict lifetime frequency of suicide attempts. The simple effects analysis of the perceived burdensomeness X acquired capability interaction indicated that when both burdensomeness and acquired capability were high, participants reported more lifetime suicide attempts. This result partially supports one of the IPTS tenets that perceived burdensomeness is a necessary, but not sufficient, condition for a suicide attempt. Contrary to the hypotheses of this study, as well as that of the IPTS, the thwarted belongingness X acquired capability interaction was not significantly predictive of frequency of lifetime suicide attempts. Moreover, in the second step of the model, thwarted belongingness was not significantly associated with frequency of lifetime suicide attempts, above and beyond the effects of PTSD symptoms. This result is similar to other studies that have found only the perceived

burdensomeness X acquired capability interaction to be predictive of suicide attempts (e.g., Bryan, Clemans, & Hernandez, 2012; Bryan, Morrow, Anestis, & Joiner, 2010; Ma et al., 2016). One study of a general sample of college students found that only perceived burdensomeness was independently predictive of suicide ideation, but that the interaction of perceived burdensomeness and thwarted belongingness was significant, indicating that the relationship between suicide ideation and thwarted belongingness may be a function of perceived burdensomeness (Van Orden et al., 2008). Overall, there are mixed findings regarding the role of thwarted belongingness in suicide ideation and attempts (Ma et al., 2016). Because thwarted belongingness did not significantly contribute to either of the hypothesized models, it is not possible to draw a conclusion about the role of thwarted belongingness within this sample. Perceived burdensomeness was more relevant to suicide attempt history than thwarted belongingness because it was significantly predictive of suicide attempt frequency, and it interacted with acquired capability to predict suicide attempt frequency when perceived burdensomeness was high. This result supported a hypothesis of the IPTS, but the lack of predictive value of thwarted belongingness in predicting either ideation or attempts was not in line with the theory. Future research should explicate the importance of thwarted belongingness to suicidal thoughts and behavior to understand for whom and under what conditions thwarted belongingness significantly contributes to suicidal thoughts and behavior. Again, it is possible that interpersonal factors related to the experience of PTSD symptoms which may explain the differential relationships among perceived burdensomeness, thwarted belongingness, and the desire for death, respectively.



Overall, the hypotheses of the IPTS were largely supported in a sample of college-age survivors of adulthood sexual assault, with exception to the role of thwarted belongingness. These results suggest that the IPTS is a suitable model for examining suicidal thoughts and behavior in civilian survivors of sexual assault. Support for the IPTS has been demonstrated in a variety of samples (Ma et al., 2016), indicating that this may be universally applied to those struggling with suicidal thoughts and behaviors. However, if the IPTS have been largely supported in both general and high-risk populations (e.g., Chu et al., 2017; Ma et al., 2016), then it is warranted to question the utility of the IPTS in understanding *why* specific populations are at greater risk for suicidality. In this study, the IPTS constructs and their interactions explained a significant but small portion of variance in the prediction of suicidal thoughts and behaviors in survivors of sexual assault. Unexplained variance in these hierarchical models warrants explication above and beyond IPTS hypotheses alone. Future research could focus on moderating and mediating factors between the components of the IPTS and suicidal thoughts and behaviors. For example, examining the role of specific trauma symptoms or social support in the burdensomeness/belongingness – suicide ideation relationship may explicate points of intervention for this population.

Regarding exploratory hypothesis 4, there was no statistically significant difference among those who reported onset of suicidal thoughts and behaviors before or after first sexual victimization, including those who did not remember when suicidal thoughts first began. Although chi-square analysis did not indicate whether any of these responses were significantly more likely, onset of suicidality before first experience of sexual victimization was more frequently reported than either onset after victimization or

inability to recall onset. Of those who reported histories of both sexual victimization and suicidality ( $n = 190$ ), nearly a quarter of eligible participants did not respond to the question about time sequence of victimization and suicidality. Lack of statistical power could have contributed to the non-significant chi-square results. Nonetheless, variation in incidence of before versus after time-sequence in this sample warrants further research in larger samples of survivors who also report a history of suicidal thoughts and behaviors. For example, further research could investigate difference in onset as a moderating factor between sexual victimization and severity of suicidal thoughts and behaviors. This moderating hypothesis could also be applied to the relationship between sexual victimization and IPTS constructs, respectively.

Strengths of this study include that it is the second study to date that has applied the IPTS to a sexually victimized sample using direct assessment of the IPTS constructs, rather than proxy variables, and it is the first study to do so in a civilian sample. By replicating the previous study by Montieth et al. (2017) in a civilian sample, this study supports that the IPTS is a suitable theory for evaluating suicide risk in survivors of sexual assault. Limitations of this study include a predominantly white, cis-gender female, heterosexual sample. However, racial and ethnic minority representation in this sample was approximately equal to minority representation at the university. Although one aim of this study was to gather data from men who experienced sexual victimization, reporting rates for men are notoriously low, which is reflected in this sample. Future studies may benefit from specifically targeting males in recruitment in order to gain statistical power for analyses with a male sample. Notably, bisexual individuals were overrepresented in the sexually victimized sample, which is not surprising, given that

bisexual people are at higher risk of sexual victimization than both heterosexual and gay/lesbian identifying men and women, respectively (Walters et al., 2013).

Additionally, the assessment of sexual victimization history did not account for victimization during incapacitation, which may have affected how participants conceptualized and reported their experiences. Use of the ACSS-short form limited assessment of acquired capability for suicide because it did not include subscale measures for pain tolerance and fearlessness about death, which may have provided more information about the function of these constructs in relation to sexual victimization. Use of online self-report measures was also a limitation due to the possibility of inaccurate reporting by participants.

Given the high prevalence of sexual assault in college students, and given high rates of suicidal thoughts and behaviors among survivors of sexual assault, it is important to identify mechanisms of suicide risk in college-age survivors of sexual assault. The current study applied the hypotheses of the IPTS to a sample of survivors to observe the predictive value of the IPTS constructs within this group. First, the results confirmed that those who reported a history of sexual victimization were more likely than those with no history of sexual victimization to report suicidal thoughts and behaviors within this sample. Next, this study found that the hypotheses of the IPTS were largely supported in that perceived burdensomeness was significantly predictive of suicide ideation, and both perceived burdensomeness and acquired capability, as well as their interaction, were all significantly predictive of suicide attempt history. When both perceived burdensomeness and acquired capability were high, participants reported more frequent suicide attempts. However, thwarted belongingness did not significantly predict suicide ideation or suicide

attempts, and it did not interact with acquired capability to predict suicide attempt history. The literature reflects mixed results for the role of thwarted belongingness in predicting suicidal thoughts and behaviors, particularly in trauma-exposed samples. Because survivors of sexual victimization have received little attention in theory-based suicide research, these results are useful in understanding whether the IPTS hypotheses can be applied to this high-risk population. Additionally, this study aimed to observe the sequencing relation among first experience of sexual victimization and onset of suicidal thoughts and behaviors. Results indicated that onset of suicidal thoughts was more frequently reported before first sexual victimization versus after, but this finding was not statistically significant. Future research should incorporate interpersonal factors related to trauma that may explicate the differential roles of thwarted belongingness and perceived burdensomeness in trauma exposed samples. Additional research is necessary to make inferences about the sequencing relation among first experience of sexual victimization and onset of suicidal thoughts and behaviors.

## References

- Anestis, M. D., Khazem, L. R., Mohn, R. S., & Green, B. A. (2015). Testing the main hypotheses of the interpersonal–psychological theory of suicidal behavior in a large diverse sample of United States military personnel. *Comprehensive Psychiatry, 60*, 78 – 85. <http://dx.doi.org/10.1016/j.comppsy.2015.03.006>
- Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress, 28*(6), 489-498.
- Breiding, M. J., Smith, S. G., Basile, K. C., Walters, M. L., Chen, J., & Merrick, M. T. (2014). Center for Disease Control and Prevention. *National intimate partner and sexual violence survey: Prevalence and characteristics of sexual violence, stalking, and intimate partner violence victimization*. Atlanta, GA: Division of Violence Prevention, National Center for Injury Prevention and Control, Center for Disease Control and Prevention.
- Bryan, C. J., Clemans, T. A., & Hernandez, A. M. (2012). Perceived burdensomeness, fearlessness of death, and suicidality among deployed military personnel. *Personality and Individual Differences, 52*(3), 374 – 379.
- Bryan, C. J., Morrow, C. E., Anestis, M. D., & Joiner, T. E. (2010). A preliminary test of the interpersonal-psychological theory of suicidal behavior in a military sample. *Personality and Individual Differences, 48*(3), 347 -350.

- Bureau of Justice Statistics. (2014). *Rape and sexual assault victimization among college-age females, 1995 – 2013*. Retrieved from <https://www.bjs.gov/content/pub/pdf/rsavcaf9513.pdf>
- Cantor, D., Fisher, B., Chibnall, S., Townsend, R., Lee, H., Bruce, C., & Thomas, G. (2015). *Report on the AAU campus climate survey on sexual assault and sexual misconduct*. Washington, DC: Association of American Universities. Retrieved from <http://www.aau.edu/>
- Chu, C., Buchman-Schmitt, J. M., Stanley, I. H., Hom, M. A., Tucker, R. P., Hagan, C. R., ... Joiner, T. E. (2017). The Interpersonal Psychological Theory of Suicide: A systematic review and meta-analysis of a decade of cross-national research. *Psychological Bulletin*, 143(12), 1313 – 1345. <https://doi.org/10.1037/bul0000123>
- Drapeau, C. W., & McIntosh, J. L. (for the American Association of Suicidology). (2018). *U.S.A. suicide 2017: Official final data*. Washington, DC: American Association of Suicidology, dated December 10, 2018, downloaded from <http://www.suicidology.org>.
- Dworkin, E.R., Menon, S. V., Bystrynski, J., & Allen, N. E. (2017). Sexual assault victimization and psychopathology: A review and meta-analysis. *Clinical Psychology Review*, 56, 65 – 87. <https://doi.org/10.1016/j.cpr.2017.06.002>
- Ellsberg, M., Jansen, H. A., Heise, L., Watts, C. H., & Garcia-Moreno, C. (2008). Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: An observational study. *The Lancet*, 371, 1165 – 1172. doi:10.1016/S0140-6736(08)60522-X

- Howard, D. E., & Wang, M. Q. (2005). Psychosocial correlates of U.S. adolescents who report a history of forced sexual intercourse. *Journal of Adolescent Health, 36*(5), 372 – 379. <https://doi.org/10.1016/j.jadohealth.2004.07.007>
- Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.
- Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry, 56*, 617 – 626.
- Kilpatrick, D. G., Edumuds, C. N., & Seymour, A. K. (1992). Rape in America: A report to the nation. Arlington, VA: National Victim Center and Medical University of South Carolina.
- Koss, M. P., & Gidycz, C. A. (1985). Sexual Experiences Survey: Reliability and validity. *Journal of Consulting and Clinical Psychology, 53*(3), 422-423.  
doi:10.1037/0022-006X.53.3.422
- Koss, M. P., & Oros, C. J. (1982). Sexual Experiences Survey: A research instrument investigating sexual aggression and victimization. *Journal of Consulting and Clinical Psychology, 50*(3), 455-457. <https://doi.org/10.1037/0022-006X.50.3.455>
- Krebs, C. P., Lindquist, C. H., Warner, T. D., Fisher, B. S., & Martin, S. L. (2007). *The campus sexual assault (CSA) study*. (NCJ 221153). Washington, DC: National Institute of Justice.

- Livingston, J. A., Hequembourg, A., Testa, M., & VanZile-Tamsen, C. (2007). Unique aspects of adolescent sexual victimization experiences. *Psychology of Women Quarterly, 31*(4), 331 – 343. <https://doi.org/10.1111/j.1471-6402.2007.00383.x>
- Ma, J., Batterham, P. J., Calear, A. L., & Han, J. (2016). A systematic review of the predictions of the Interpersonal Psychological Theory of Suicidal Behavior. *Clinical Psychology Review, 46*, 34 – 45. doi: 10.1016/j.cpr.2016.04.008
- Monteith, L. L., Bahraini, N. H., & Menefee, D. S. (2017). Perceived burdensomeness, thwarted belongingness, and fearlessness about death: Associations with suicidal ideation among female veterans exposed to military sexual trauma. *Journal of Clinical Psychology, 73*(12), 1655 – 1669. doi:10.1002/jclp.22462
- Montieth, L. L., Menefee, D. S., Pettit, J. W., Leopoulos, W. L., & Vincent, J. P. (2013). Examining the Interpersonal Psychological Theory of Suicide in an inpatient veteran sample. *Suicide and Life-Threatening Behavior, 43*(4), 418 – 428. <https://doi.org/10.1111/slbt.12027>
- Nock, M. K., Holmberg, E. B., Photos, V. I., & Michel, B. D. (2007). The Self-Injurious Thoughts and Behaviors Interview: Development, reliability, and validity in an adolescent sample. *Psychological Assessment, 19*, 309-317.
- Smith, P. N., & Cukrowicz, K. (2010). Capable of suicide: A functional model of the acquired capability component of the interpersonal-psychological theory of suicide. *Suicide and Life-Threatening Behavior, 40*(3), 266 – 275.
- Van Orden, K. A., Cukrowicz, K. C., Witte, T. K., & Joiner, T. E. (2012). Thwarted belongingness and perceived burdensomeness: Construct validity and

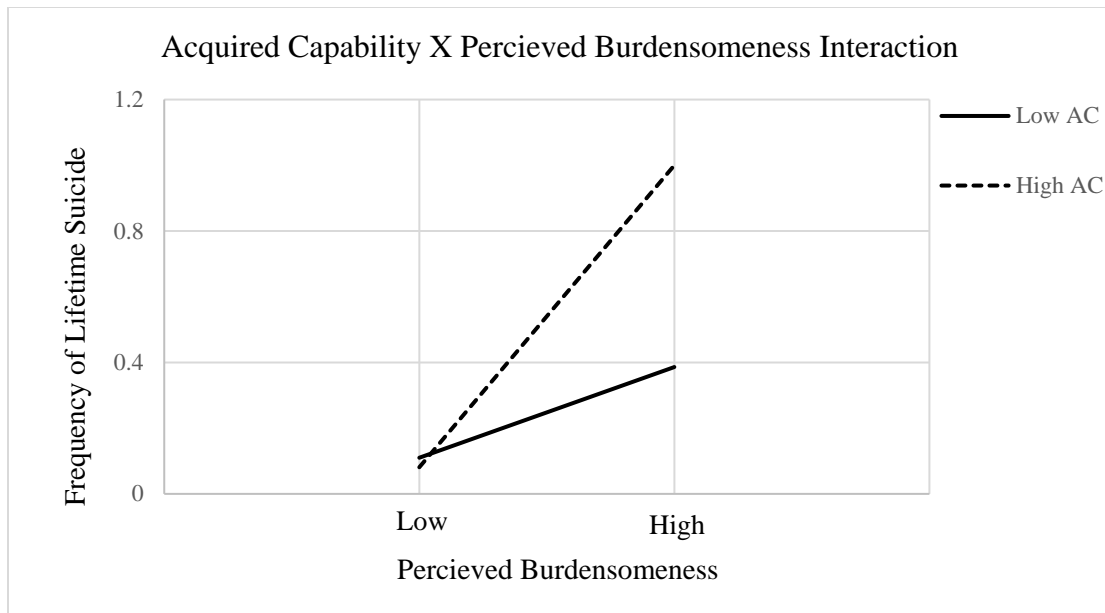


psychometric properties of the Interpersonal Needs Questionnaire. *Psychological Assessment*, 24(1), 197-215.

Van Orden, K. A., Witte, T. K., Gordon, K. H., Bender, T. W., & Joiner, T. E. (2008). Suicidal desire and the capability for suicide: Tests of the interpersonal-psychological theory of suicidal behavior among adults. *Journal of Counselling Psychology*, 76(1), 72 – 83.

Walters, M. L., Chen, J., & Breiding, M. J. (2013). *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 findings on victimization by sexual orientation*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). *The PTSD Checklist for DSM-5 (PCL-5)*. Boston, MA: National Center for PTSD.



*Figure 1.* Acquired capability interacts with perceived burdensomeness to predict frequency of lifetime suicide attempts

Table 1. T-test and chi-square comparison of sexually victimized and non-sexually victimized groups

Variable	SV Group	Non-SV Group	<i>t</i> / $\chi^2$
Mean Age (SD)	20.8 (1.9)	20.5 (2.1)	<i>t</i> = 1.65
Gender	%	%	$\chi^2 = 66.11^{**}$
Female	90.6	70.3	
Male	6.8	27.5	
Trans Woman	.03	0	
Trans Man	0	.02	
Non-binary/Gender Fluid	0	16.0	
Other	0	.05	
Ethnicity	%	%	$\chi^2 = 12.73^*$
White	87.8	85.1	
Black/African American	4.7	4.6	
Hispanic/Latinx	2.8	3.7	
Multi-ethnic	3.4	1.6	
Asian	1.3	2.5	
Native American	0	.05	
Other	0	2.1	
Sexual Orientation	%	%	$\chi^2 = 12.17$
Heterosexual	69.7	78.0	
Bisexual	19.4	11.4	
Homosexual	4.4	4.6	
Pansexual	2.8	2.5	
Asexual	.06	.04	
Not sure	2.5	1.6	
Decline to state	0	.04	
Other	3.2	.09	

\* Indicates  $p < .05$ . \*\* Indicates  $p < .001$

Table 2. Means, standard deviations, and coefficient alphas for quantitative measures for sexually victimized vs. non-sexually victimized groups

Variable	SV Group	Non-SV Group	<i>t</i>	Skewness	$\alpha$
	M (SD)	M (SD)			
Trauma symptoms	27.4 (20.7)	8.9 (14.2)	-12.7**	1.0	.77
Acquired capability	7.2 (4.1)	6.5 (3.9)	-2.20*	.19	.80
Thwarted belongingness	3.44 (1.5)	2.9 (1.3)	-5.10**	.38	.98
Perceived burdensomeness	2.3 (1.7)	1.7 (1.2)	-5.37**	1.7	.92
Past-year suicide ideation frequency	7.2 (29.6)	1.1 (5.8)	-4.18**	11.5	N/A
Lifetime suicide attempt frequency	.35 (1.2)	.06 (.39)	-4.53**	9.0	N/A

Scores for trauma symptoms, acquired capability, thwarted belongingness, perceived burdensomeness, and frequency of suicide ideation and attempts come from the PCL-5, ACSS-SF, INQ-TB, INQ-PB, and the SITBI, respectively.

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

Table 3. Correlations among quantitative study variables

<i>Variable</i>	1	2	3	4	5	6
1. Past Year Suicide Ideation Frequency	1	-	-	-	-	-
2. Lifetime Suicide Attempt Frequency	.18**	1	-	-	-	-
3. Trauma Symptoms	.21**	.27**	1	-	-	-
4. Acquired Capability	.11**	.17**	.17**	1	-	-
5. Perceived Burdensomeness	.31**	.29**	.52**	.08*	1	-
6. Thwarted Belongingness	.21**	.15**	.46**	.09*	.62**	1

Scores for trauma symptoms, acquired capability, thwarted belongingness, perceived burdensomeness, and frequency of suicide ideation and attempts come from the PCL-5, ACSS-SF, INQ-TB, INQ-PB, and the SITBI, respectively.

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

Table 4. Multiple regression results for IPTS constructs predicting frequency of past-year suicide ideation and frequency of lifetime suicide attempts.

Suicide Ideation		$\Delta R^2$	Total $R^2$	$F$	$\beta$	$t$
Block 1		.031*	.031	8.56*		
	PTSD Symptoms				.177*	2.93
Block 2		.052**	.83	7.40**		
	Perceived Burdensomeness				.262**	3.27
	Thwarted Belongingness				.012	.157
Suicide Attempts		$\Delta R^2$	Total $R^2$	$F$	$\beta$	$t$
Block 1		.073**	.073	20.9**		
	PTSD Symptoms				.271**	4.58
Block 2		.074**	.148	7.57**		
	Perceived Burdensomeness				.253**	3.26
	Thwarted Belongingness				-.116	-1.53
	Acquired Capability				.208**	3.55
Block 3		.043**	.191	6.94**		
	PB X AC				.247**	3.69
	TB X AC				-.102	-1.53

\* $p < .01$  \*\* $p \leq .001$

PTSD symptoms, perceived burdensomeness, thwarted belongingness, and acquired capability were measured with the PCL-5, INQ-PB, INQ-TB, and ACSS-SF, respectively.