

Risk Factors for Suicide Ideation Among Rhode Island College Students

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ABSTRACT

OBJECTIVES: This study aimed to identify individual and relational risk factors for suicide ideation among students enrolled in 2- and 4-year colleges.

METHODS: A cross-sectional analysis was conducted using N=685 college students from the 2022 Rhode Island Young Adult Survey.

RESULTS: 13.7% (N = 94) reported suicide ideation, 7.6% (N = 52) reported making a suicide plan, and 3.2% (N = 22) reported at least one suicide attempt. Sexual and gender minorities had 300% (95%CI: 47%, 987%) increased odds relative to cisgender heterosexual males, students living on campus had 56% (95%CI: 79%, 10%) lower odds compared to those living off campus with a parent, and students with insomnia had 156% (57%, 320%) increased odds of suicide ideation.

CONCLUSIONS: Interventions to 1) cultivate identity-affirming communities for sexual and gender minority students, 2) create a sense of belonging for students living off campus, and 3) improve sleep health are needed.

KEYWORDS: Suicide ideation, college students, sleep, housing, LGBTQ

INTRODUCTION

Emerging adulthood, the transition from childhood to adulthood, typically ranging from ages 18 to 25 years, is a developmentally vulnerable stage for college students marked by a new level of independence, freedom, development of personal skills, financial responsibility, social-skills development, pressure to perform academically, and often an introduction to intimate relationships.¹ The imminent stress coming with entering college is prevalent, with 38.8% of male college students and 48.2% of female college students reporting having “more than average stress” within the first 12 months of enrolling. In 2019, United States (US) college students considered the following to be “traumatic or difficult to handle:” academics (42.5% of males, 54.6% of females), intimate relationships (28.2% of males, 33.6% of females), social relationships (23.4% of males, 33.3% of females), financial problems (29.5% of males, 39.6% of females), and sleep difficulties (29.7% of males, 37.0% of females).²

Due to this excess stress,³ a substantial portion of college students experience suicide ideation. Suicide is the second leading cause of death among US college students and the second leading cause of death for Rhode Islanders ages 15 to 34 years.^{4,5} In 2019, the National College Health Assessment (NCHA) reported that within the last 12 months 7.5% of male college students and 8.6% of female college students had seriously considered suicide, with 1.1% and 1.4% reporting at least one suicide attempt,² respectively. Of concern, few college students are willing to seek mental health treatment.⁶

There are several risk factors for suicide ideation in college students, with major depressive disorder (MDD) and insomnia being significant contributors.⁶ For example, the odds of being classified with suicide risk as a freshman college student were approximately 6.5 times and 2.7 times greater for college students with elevated depressive symptoms and sleep problems, respectively.⁷ Others have identified socio-demographic risk factors for suicide in college students. Elevated rates of suicide ideation have been identified in bisexual college students, even when compared to lesbian or gay students, and the experience of persons who are transgender is similar.³ Additionally, students who identify with a racial or ethnic minority may have higher rates of suicide ideation or suicide attempts relative to White, non-Hispanic students.³

Despite prior studies investigating key risk factors for suicide ideation among college students, no study to our knowledge focuses specifically on students at both 2- and 4-year colleges in Rhode Island. Given the many known risk factors for suicide ideation, this study aims to identify key individual and relational risk factors for suicide ideation among a sample of Rhode Island college students to inform future prevention programming on college campuses.

METHODS

Sample

A cross-sectional analysis was conducted with data collected from the Rhode Island Young Adult Survey (RIYAS) from May through August 2022. A full description of RIYAS methodology is published elsewhere.⁸ The survey resulted in N = 1,022 young adults aged 18–25 years who lived in Rhode Island for at least part of the year. This study was limited to college students, particularly those identifying as

freshman, sophomore, junior, or senior undergraduates, as well as graduate students. This yielded an analytic sample of $N = 685$. This study was approved by the Johnson & Wales University Institutional Review Board.

Measures

The primary outcome of this study was suicide ideation. Suicide ideation was defined by an affirmative response to the survey question, *During the past 12 months, did you ever seriously consider attempting suicide?* Follow-up questions for those responding *Yes* included measures of having a suicide plan (*During the past 12 months, did you make a plan about how you would attempt suicide?*) and attempting suicide (*During the past 12 months, how many times did you actually attempt suicide?*).

Both individual and relational characteristics were considered as potential explanatory variables. Individual characteristics included school year (*freshman undergraduate, sophomore undergraduate, junior undergraduate, senior undergraduate, graduate*), race/ethnicity (*White non-Hispanic, Black, Asian, Hispanic, Multiracial or something else*), social status, age in years, employment status (*none, part-time, full-time*), sexual and gender identity (*heterosexual cisgender male, heterosexual cisgender female, sexual and gender minorities*), insomnia, student status (*full-time, part-time*), and first-generation college status. Social status was measured using the MacArthur Scale of Subjective Social Status,⁹ which assessed a participant's perceived social rank relative to other members of the community on a scale of 1, meaning *worst off*, to 10, meaning *best off*.

While these sociodemographic characteristics are often considered risk factors for suicide ideation and mental health,¹⁰ first-generation college status was included, based on its known association with poor mental health of college students,¹¹ and insomnia due to its known association with suicide ideation since the COVID-19 pandemic.¹² First-generation college status was determined by an affirmative response to the question, *Are you a first-generation college student, meaning you are the first person in your immediate family to attend college?* Insomnia was measured via the Insomnia Severity Index (ISI), a 7-item self-report questionnaire of insomnia symptoms with 5-point Likert-scale responses ranging from *none* to *very severe*. Total summary insomnia symptom scores potentially ranged from 0 to 28, with higher scores reflecting greater severity of insomnia symptoms. In accordance with scoring instructions, summary scores of 15 or above indicated either moderate or severe clinical insomnia. The ISI is a valid and reliable instrument and holds excellent internal consistency with a Cronbach alpha of about 0.90.¹³ In this sample, the interitem correlation according to Cronbach's alpha was $\alpha = 0.89$.

Relational characteristics included living arrangement, participation in Greek life, and social support. Living arrangement was measured by responses *off-campus housing with a*

parent, off-campus housing without a parent, or on-campus housing to the question, *what is your current living situation?* Participation in Greek life was assessed by affirmative response to the question, *Are you a member of Greek life, such as a fraternity or sorority?* Social support was dichotomized in response to the question, *How often do you get the social and emotional support you need?* as those responding *always/usually/sometimes* versus *rarely/never*.

Statistical Analysis

Descriptive statistics such as frequencies and percentages were computed for all variables among the college student sample ($N = 685$). Overall frequency and percentage of suicide ideation, suicide plans, and suicide attempts were calculated. Bivariable statistics were used to compare individual and relational characteristics by suicide ideation (**Tables 1 & 2**). Particularly, two-sample t-tests were used for continuous variables, chi-square tests for categorical variables, and Fisher's exact tests were used for categorical variables when a single cell had 5 or fewer observations. A multivariable logistic regression was conducted to calculate adjusted odds of suicide ideation for all explanatory variables. All statistical tests were assessed at $\alpha = 0.05$. All analyses were conducted in Stata/SE 15.0.¹⁴

RESULTS

Among this sample of college students aged 18 to 25 years in Rhode Island, 13.7% ($N = 94$) reported suicide ideation, 7.6% ($N = 52$) reported making a suicide plan, and 3.2% ($N = 22$) reported at least one suicide attempt. Students in the total sample were primarily undergraduates (85.3%), a small majority White non-Hispanic (53.2%), mean age around 21 years old, majority part-time employed (55.6%), and a small portion cisgender heterosexual male (11.8%). The minority of students were part-time (17%) and first-generation college (35.1%). Insomnia was highly prevalent (46.8%).

Bivariable analyses showed suicide ideation varied by social status ($p < 0.001$), sexual and gender identity ($p < 0.001$), insomnia ($p < 0.001$), and social support ($p = 0.006$; **Tables 1 & 2**). In the fully adjusted model, sexual and gender minorities had 300% (95%CI: 47%, 987%) increased odds of suicide ideation relative to cisgender heterosexual males, students living on campus had 56% (95%CI: 79%, 10%) lower odds of suicide ideation compared to those living off campus with a parent, and students with insomnia had 156% (57%, 320%) increased odds of suicide ideation relative to those without insomnia (**Figure 1**). The difference between bivariable and multivariable results were likely because social status and social support are correlated ($p < 0.001$). Post-hoc analyses, however, confirmed that with or without one or both variables in the multivariable model, living on campus was significantly protective against suicide ideation, and these other variables were not.

Table 1. Individual characteristics by suicide ideation among Rhode Island college students

	Total Sample		Suicide Ideation		P-values
	N = 685	100%	N = 94	14%	
School Year					0.238
Freshman Undergraduate	120	17.5	24	25.5	
Sophomore Undergraduate	96	14	113	13.8	
Junior Undergraduate	168	24.5	23	24.5	
Senior Undergraduate	200	29.2	23	24.5	
Graduate	101	14.7	11	11.7	
Race/Ethnicity					0.648
White, non-Hispanic	397	58	50	53.2	
Black	36	5.3	6	6.4	
Asian	41	6	4	4.3	
Hispanic	152	22.2	24	25.5	
Multiracial or Something Else	59	8.6	10	10.6	
Social Status [mean (SE)]	6.08	0.06	5.24	0.16	<0.001
Age [mean (SE)]	20.8	0.07	21.1	0.18	0.171
Employment					0.078
No	145	21.2	27	28.7	
Part-Time	381	55.6	43	45.7	
Full-Time	159	23.2	24	25.5	
Sexual and Gender Identity					<0.001
Heterosexual Cisgender Male	81	11.8	5	5.3	
Heterosexual Cisgender Female	313	45.7	23	24.5	
Sexual and Gender Minority	291	42.5	66	70.2	
Insomnia					<0.001
No	514	75	50	53.2	
Yes	171	25	44	46.8	
Student Status					0.211
Part-Time	89	13	16	17	
Full-Time	596	87	78	83	
First Generation College					0.886
No	449	65.6	61	64.9	
Yes	236	34.5	33	35.1	

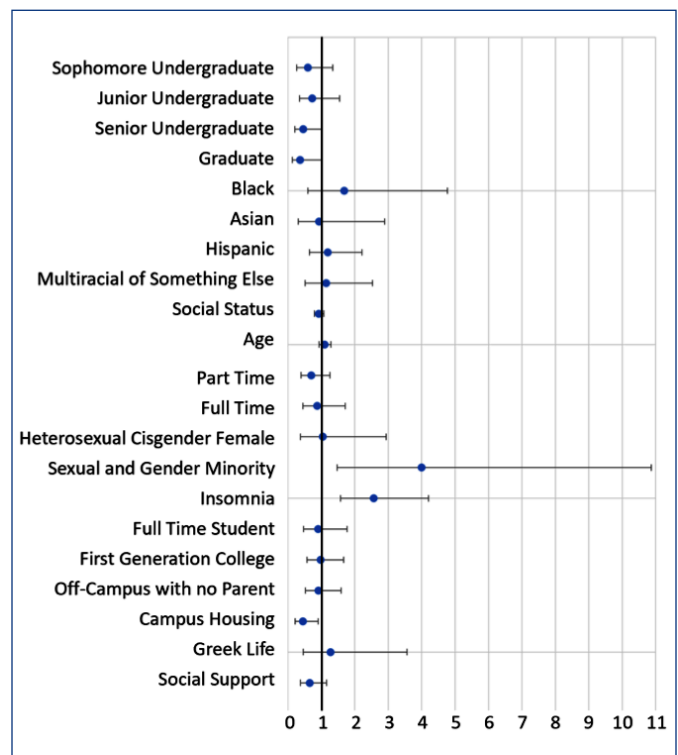
Note: P-values were computed using two-sample t-tests for continuous variables, chi-square tests for categorical variables, and Fisher's Exact tests for categorical variables with cell sizes <=5

Table 2. Relational characteristics by suicide ideation among Rhode Island college students

	Total Sample		Suicide Ideation		P-values
	N = 685	100%	N = 94	14%	
Living Arrangement					0.189
Off Campus with Parent	334	48.8	49	52.1	
Off Campus with no Parent	208	30.4	32	34	
Campus Housing	143	20.9	13	13.8	
Greek Life					0.523
No	645	94.2	89	94.7	
Yes	40	5.8	5	5.3	
Social Support					0.006
No	127	18.5	27	28.7	
Yes	558	81.5	67	71.3	

Note: P-values were computed using two-sample t-tests for continuous variables, chi-square tests for categorical variables, and Fisher's Exact tests for categorical variables with cell sizes <=5

Figure 1. Adjusted odds of suicide ideation among Rhode Island college students



Note: Referents for categorical variables in multivariable logistic regression were freshman undergraduate, White non-Hispanic, no employment, heterosexual cisgender males, no insomnia, part-time student, not a first-generation college student, living off campus with a parent, not in Greek life, and no social support

DISCUSSION

This study aimed to identify individual and relational risk factors for suicide ideation among students enrolled in 2- and 4-year colleges in Rhode Island. Individual characteristics independently associated with suicide ideation in this sample included identifying as a sexual and/or gender minority and experiencing insomnia. The only relational characteristic independently associated with suicide ideation in this population was living on campus, which was protective. While bivariate results suggested higher social status and social support were less common among students with suicide ideation, these did not remain independent protective factors for suicide ideation in multivariable models. These bivariate associations are consistent with other literature showing that those with lower socioeconomic status and those with more social support are less likely to report suicide ideation.⁹

Sexual and Gender Minorities

Our results show, as well as previous studies,¹⁵ that sexual and gender minority college students have an increased risk for suicide ideation, which may be explained by the Minority Stress Theory.¹⁶ Minority Stress Theory suggests that suicide ideation is greater in minority subgroups, including sexual and gender minorities, due to the constant and consistent exposure to stress, shame, and rejection from society.¹⁷ Here, multiple studies of young adults and/or college students have documented that transgender or gender non-conforming individuals, as well as sexual minorities, have increased rates of trauma, depression,¹⁸ and suicide ideation, which is consistent with this theory.¹⁹

Sleep Problems

Our results suggest that insomnia or sleep problems may be associated with suicide ideation, and this finding is supported by other studies. Around 60% of all US college students suffer from poor sleep quality, and 7.7% meet the criteria for an insomnia disorder. A systematic review of research in university students concluded that insomnia and nightmares were associated with elevated suicide risk as well as suicidal thoughts and behaviors within the college student population.²⁰ Furthermore, a cross-sectional research study suggested that 82.7% of individuals with elevated suicide risk also had sleep problems, and 31.3% individuals with sleep problems also had elevated suicide risk.^{7, 21} The relationship between sleep problems and poor mental health among college students is likely bidirectional – with sleep problems as both a cause and effect of poor mental health, since poor sleep quality can negatively impact a student's education, work ethic, daytime routine, and chronotype changes.²² Consequently, the possibility of a positive feedback loop may exist that is difficult for students to eliminate without external support.

Living in Campus Housing

A novel finding was that living on campus, relative to off campus, was independently associated with a lower risk of suicide ideation. Living in campus housing may be a proxy for having a stronger sense of belonging or community as a college student, which may provide a protective effect against suicide ideation.²³ Others have reported that a lower sense of belonging was significantly associated with greater severity of depression, hopelessness, suicidal ideation, and history of prior suicide attempt(s),²⁴ and feeling a stronger connection to a college campus was positively associated with help-seeking for suicide ideation. The association between campus connection help-seeking may be stronger among students who have a strong sense of togetherness with peers or a supportive group of friends.²³

Recommendations and Implications

Colleges are not merely educational settings, but an environment in which adolescents transition into adulthood. Therefore, colleges must create an environment and sense of community that helps young people thrive and supports well-being, which can be accomplished in several ways. First, colleges should support programming and outreach that facilitates greater inclusion of students who identify as sexual and gender minorities while also continuing to promote the acceptance of proper pronoun identification to increase social comfortability of all students.²⁵ Generally, continued work is needed at Rhode Island colleges to minimize existing barriers with mental health services, support/create community-driven and community-based interventions, and increase suicide ideation knowledge while reducing its stigma.²⁶ College health-service programs should also refer sexual and gender minority students who seek help to professionals that support SGM-affirmative mental health practices.²⁷

Second, colleges should consider integrating sleep-health interventions into campus health services and health education campaigns since sleep education can increase sleep knowledge and improve some sleep behaviors.²⁸ Colleges can also consider minimizing 8 a.m. classes, decreasing late-night assignment deadlines, creating safe areas where commuters or residential students can nap, enforcing dormitory quiet hours, and requiring all staff to be educated on the importance of sleep.²⁹

Finally, colleges should create programs that support the mental health of off-campus students, which can include outreach of mental health services and initiatives to create more social/community connectedness. Colleges should emphasize incorporating off-campus students in conversations on mental health, ensure that campus-wide mental health campaigns effectively reach off-campus students, and create systems to support off-campus student on an as-needed basis.³⁰

Limitations

The current study has some limitations. First, the sample is under-represented in heterosexual cis-males. Given higher rates of poor mental health among females and sexual and gender minorities,³¹ the study likely has an elevated rate of suicide ideation above and beyond the general population. This is also a convenience sample of young adult college students and therefore generalizability to the US college student population is limited. The self-reported nature of this study may also allow for social desirability bias, so suicide ideation may be under-reported. Finally, this is a cross-sectional study and temporality cannot be confirmed. Specifically, we cannot determine whether insomnia preceded or resulted from suicide ideation.

CONCLUSIONS

This study of Rhode Island young adult college students found sexual and gender minorities and students with insomnia were more likely to have suicidal ideation, but those living on campus were protected. Colleges must be safe and inclusive community environments that help students thrive. Interventions to cultivate identity-affirming communities for sexual and gender minority students and a sense of belonging for students living off campus are needed. Programming to improve sleep health should also be incorporated.

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