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ORIGINAL RESEARCH

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# Non-suicidal self-injury and associated factors among college students

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## ABSTRACT

Non-suicidal self-injury is a significant health problem among adolescents and college students. Self-injury is often used as a negative method of coping with adverse emotions and psychological distress. Therefore, the purpose of this study is to examine past year self-injury and potential associated factors such as substance use and mental health. A total of 777 students completed the American College Health Association—National Health Assessment Survey II in classrooms. Logistic regression analysis was used to examine the study aims. Results indicated 7.0% of students reported past year self-injury. Logistic regression analysis revealed significant differences based on grade, relationship status, abuse, substance use, and mental health problems. The final model significantly predicted past year self-injury and accounted for 19%–48% of the variance in past year self-injury. In the final model, students who seriously considered suicide were greater than six times more likely to self-injure and students who attempted suicide were greater than 16 times more likely to self-injure. It appears prevention and intervention programs for college students are needed. College health professionals and others working with students may seek to identify high-risk groups for further intervention. Students with a history of considering suicide and suicide attempts may be at highest risk. Providing additional support to such students may reduce the risk of self-injury.

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## KEYWORDS

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## Introduction

Non-suicidal self-injury, commonly referred to as self-injury, is a significant health problem among US college students. Non-suicidal self-injury is defined as deliberately and purposefully harming one's body as a means of coping with emotional stress and other problems [1,2]. Although general population studies indicate approximately 4% of the general population self-injures, the research of college students indicates the rates are significantly higher and range from 17% to 35% [3]. In 2017, data from the American College Health Association [4] revealed 8.1% of undergraduate students reported intentionally cutting, burning, or bruising themselves until injured.

College students report cutting and scraping skin until the skin bleeds as the most common methods of self-injury [5]. Other common methods include hitting or punching themselves until bruised, burning, and interfering with healing after self-injury. Additionally, demographic differences exist in self-injury behaviors. Although males and females have similar rates of self-injury, females tend to cut or scratch the skin whereas males tend to punch or hit to the point of bruising [6]. Whitlock et al. [6] found that males were also more likely to injure their hands whereas females tended to harm their wrists or thighs.

College students cite multiple reasons for self-injury. Loneliness, inability to express feelings, feelings of emptiness, and fear of relationships and responsibilities have all been found to be the reason for self-injury [1,7]. In addition, not feeling understood by others and coping with negative feelings and experiences are also commonly cited. Unfortunately, self-injury is often used as a negative coping skill used to dull emotional and psychological pain in place of positive, healthy coping behaviors [2]. Self-injury provides feelings of control and also provides relief from negative feelings or emotional and mental problems.

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Many students exhibit warning signs of self-injury. The most visible warning sign tends to be common, inexplicable injuries such as cuts or burns on the skin [1,2]. Scarring on the skin is also a prominent warning sign [2]. Students who self-injure may also wear long sleeves and pants even in hot weather in an attempt to cover up injuries. Additional warning signs include low self-esteem levels, problems managing emotions, relationship difficulties, and academic problems [1].

### *Purpose of the present study*

To further understand self-injury among college students, research is needed to determine the extent of self-injury among college students and understand the role of potential factors such as substance use, mental health problems, and experiences with abuse. This study is unique as it focuses on a college population in an urban area. It also examines the possibility of multiple behavioral correlates, including recent substance use, past year experiences with emotional, physical, and sexual abuse, and past year experiences with mental health issues. Examining self-injurious behavior among college students and potential links to substance use, abuse experiences, and mental health problems may be important for prevention and intervention. Additionally, the present study examines individual characteristics, including grade level, gender, Greek life, relationship status, enrollment status, and grades received that may be associated with self-injury. Specifically, the following research questions were examined: (1) What is the extent of the past year self-injury among college students? (2) Does past year self-injury differ based on demographic characteristics? (3) Is past year self-injury correlated with recent alcohol use, recent binge drinking, recent cigarette use, recent marijuana use, recent sedative use, and recent opiate use? (4) Is past year self-injury correlated with past year emotional, physical, and sexual abuse? (5) Is past year self-injury associated with poor mental health, including anxiety, depression, and suicidal ideation?

## Methods

### *Participants*

Participants in the present study were selected from general education classes at a metropolitan university. All participants were informed that the study was anonymous and no identifiers would be collected. No incentives were provided for participation.

### *Survey instrument*

All study participants completed The American College Health Association—National College Health Assessment II (ACHA-NCHA) [8]. This survey is a 65-item survey, which includes items on health behaviors, student perceptions of health behaviors, and demographics. For the present study, demographics, self-injury, abuse, alcohol and other drug use, and mental health sections of the survey were used. For demographics, students filled in the appropriate circle. For self-injury, students were requested to report if they had ever intentionally injured themselves in the past 12 months. Response options included 1 = no, never, 2 = no, not in past 12 months, 3 = yes, in the last 2 weeks, 4 = yes, in the last 30 days, and 5 = yes, in the past 12 months. For the abuse items, students were requested to report if they had experienced an emotionally, physically, or sexually abusive relationship ($N$ = 3) in the past 12 months (yes/no) by filling in the appropriate circle. The alcohol and other drug use scale ($N$ = 17) requested students to report the number of days drinking or using drugs in the past 30 days (1 = do not use; 8 = used daily). Lastly, the mental health scale requested students to respond to 11 items on anxiety, depression, and suicide and required students to fill in the appropriate circle (1 = never; 5 = yes, last 12 months). Previous research indicates that the ACHA-NCHA II is valid and reliable [9].

### *Procedures*

Participants for this study were recruited by the university wellness center. Course instructors were contacted via email for permission to survey students in their classrooms. All survey administrators were trained on the survey and study procedures. Survey administrators informed all participants of the study purpose, the anonymity of the survey, and the voluntary nature of the survey. After completing the survey, students placed surveys in an envelope, which was later sent out for data entry and analysis.

### *Data analysis*

All data analyses were performed using the SPSS statistical software package (Version 23.0). Demographic and background characteristics were assessed via frequency distributions, means, standard deviations, and ranges. To perform the analysis, self-injury was recoded into two categories:

0 = have not intentionally injured self in the past 12 months and 1 = have intentionally injured self in the past 12 months. Similarly, the alcohol and drug items were also recoded into two categories: 0 = have not used in the past 30 days and 1 = have used in the past 30 days. The experience with abuse scale was also dichotomized into two categories: 0 = have not been abused past 12 months and 1 = have been abused past 12 months. The mental health items were also dichotomized into two categories: 0 = have not experienced mental health item in the past 12 months and 1 = have experienced mental health item in the past 12 months. To determine whether the past year self-injury differed based on demographic characteristics, physical, emotional, and sexual abuse (past 12 months), alcohol and other drug use (past 30 days), and past year anxiety, depression, and suicide variables, unadjusted odds ratios were computed via univariate logistic regression analyses. Significant variables were then retained and included in a final multiple logistic regression analysis. The significance level for analysis was set at 0.05.

## Results

### *Demographic characteristics*

Participants were evenly split by sex with 46.1% of males and 53.9% of females participating in the study. A total of 51.8% were freshman or sophomores whereas 49.2% were juniors, seniors, fifth-year seniors, or graduate students. Greater than one-third (35.8%) of students lived on campus, 44.9% lived off campus, and 19.3% lived with parents. Regarding grades received, 28.6% received A's, 52.9% received B's, 16.5% received C's, and 0.5% received D's or F's. A total of 53.6% of participants reported they were not in a relationship, 39.2% were in a relationship, not living together, and 6.9% were in a relationship, living together.

### *Extent of past year self-injury*

A total of 7.0% of students reported intentionally injuring themselves in the past 12 months. Additionally, 1.5% of students self-injured in the past 2 weeks and 1.5% self-injured in the past 30 days.

### *Past year self-injury based on demographic and background characteristics*

Results indicated several demographic characteristics were significant. First and second-year students were significantly more likely than third, fourth, fifth year, and graduate students to report intentional self-injury (OR = 1.938, $p$ = 0.028) (Table 1). Students who were not in a relationship were significantly more likely than students in a relationship to report intentional self-injury (OR = 1.794, $p$ = 0.048). Sex, grades received, enrollment status, and sorority/fraternity membership status were not significant.

### *Past year self-injury and recent alcohol and other drugs*

Results found several recent substance use variables were significant. Specifically, students who intentionally self-injured were more likely than students who did not self-injure to report recent cigarette use (OR = 2.183, $p$ = 0.007), recent marijuana use (OR = 1.985, $p$ = 0.023), recent sedative use (OR = 5.388, $p$ < 0.001), and recent opiate use (OR = 9.346, $p$ < 0.001) (Table 2). Recent alcohol use and recent binge drinking were not significant.

### *Past year self-injury and past year abusive relationships*

Results demonstrated that students in an emotionally abuse relationship in the past 12 months were significantly more likely than students who were not in an emotionally abusive relationship to report intentional self-injury (OR = 2.523, $p$ = 0.006) (Table 2). Similarly, students in a physically abusive relationship (OR = 3.556, $p$ = 0.005) and students in a sexually abusive relationship (OR = 4.298, $p$ = 0.001) were significantly more likely than their counterparts to report intentional self-injury.

### *Self-injury and past year mental health issues*

Results indicated students intentionally self-injuring in the past year were significantly more likely than students not intentionally self-injuring to report feelings of hopelessness (OR = 3.991, $p$ < 0.001), feelings of exhaustion (OR = 3.991, $p$ < 0.001), feelings of being overwhelmed (OR = 7.672, $p$ < 0.001), feeling very lonely (OR = 7.507, $p$ < 0.001), feeling very sad (OR = 8.397, $p$ < 0.001), feeling anxiety (OR = 5.774, $p$ < 0.001), feeling so depressed it was difficult to function (OR = 9.482, $p$ < 0.001), feelings of overwhelming anger (OR = 9.690, $p$ < 0.001), seriously considering suicide (OR = 30.106, $p$ < 0.001), and attempted suicide (OR = 64.418, $p$ < 0.001) (Table 3).

**Table 1.** Intentionally self-injured in the past year by demographic characteristics.

| Item | Intentionally self-injured past year | | OR | CI | *p* |
|---|---|---|---|---|---|
| | No *N* (%) | Yes *N* (%) | | | |
| Sex | | | | | |
| Male[a] | 324 (93.9) | 21 (6.1) | 1.137 | (0.633, 2.040) | 0.667 |
| Female | 380 (93.1) | 28 (6.9) | | | |
| Grade level | | | | | |
| 3rd, 4th, 5th, or Graduate student[a] | 337 (95.2) | 17 (4.8) | 1.938* | (1.066, 3.525) | 0.028 |
| 1st or 2nd year | 358 (91.1) | 35 (8.9) | | | |
| Grades received | | | | | |
| As/Bs[a] | 566 (93.1) | 42 (6.9) | 1.019 | (0.483, 2.150) | 0.960 |
| Cs/Ds/Fs | 119 (93.0) | 9 (7.0) | | | |
| Enrollment status | | | | | |
| Full-time[a] | 655 (92.9) | 50 (7.1) | 1.139 | (0.394, 3.293) | 0.810 |
| Part-time | 48 (92.0) | 4 (8.0) | | | |
| Relationship status | | | | | |
| In relationship[a] | 331 (94.8) | 18 (5.2) | 1.794* | (1.000, 3.220) | 0.048 |
| Not in relationship | 369 (91.1) | 36 (8.9) | | | |
| Sorority/Fraternity Member | | | | | |
| No[a] | 584 (93.4) | 41 (6.6) | 1.449 | (0.739, 2.839) | 0.278 |
| Yes | 118 (90.8) | 12 (9.2) | | | |

*N* = 777.
[a]Indicates Referent.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

### *Final logistic regression model*

The final logistic regression model significantly predicted past year intentional injury (omnibus chi-square = 153.111, df = 17, $p < 0.001$) (Table 4). The model accounted for 19% (Cox and Snell $R^2 = 0.192$) to 48% (Nagelkerke $R^2 = 0.479$) of the variance in the past year self-injury. In the final model, seriously considered suicide and attempted suicide were significant. Students who reported seriously considering suicide in the past 12 months were 6.224 times more likely and students who attempted suicide in the past 12 months were 16.281 times more likely to self-injure in the past year compared to students who did not consider or attempt suicide.

## Discussion

The present study found greater than 1 in 20 college students reported intentionally self-injuring in the past 12 months. The most recent national American College Health Association Survey found 8.1% of students self-harmed in the past 12 months [4]. This is slightly higher than the rates found in the present study. The current study examined students at one urban university, which may explain the difference in numbers of students involved in self-injury. This study also included graduate students, which could further explain the small difference in rates.

In the univariate analysis, grade level was significant with freshman and sophomores at elevated risk for the past year self-injury. This is not surprising as self-injury is often associated with younger ages. In fact, research indicates that college freshmen are more likely than college students in other grade levels to self-injure [10]. However, grade level was not significant in the final model. Additional research may be warranted which examines self-injury based on age.

Students who were not in a relationship were at increased odds for self-injury. Although limited research exists on relationship status and self-injury, strong social connections, in general, are considered as protective factors [11]. It is likely that students in a relationship have someone to talk to about life's problems are less likely to turn to self-injury as a coping method. Interventions are needed to address gaps in social connections by positively connecting students to others on campus and in the local community.

In addition to relationship status, past year abuse also increased the odds of self-injury. Students in an emotionally abuse relationship were over 2.5 times more likely to self-injure, students in a physically abusive relationship with over 3.5 times more likely, and students in a sexual relationship were greater than 4.2 times more likely to self-injure. It is very possible that students in abusive relationships use

**Table 2.** Intentionally self-injured based on alcohol use, other drug use, and in abusive relationship.

| Item | Intentionally self-injured past year | | OR | CI | *p* |
|---|---|---|---|---|---|
| | No *N* (%) | Yes *N* (%) | | | |
| Recent alcohol use[a] | | | | | |
| No | 169 (92.3) | 14 (7.7) | 889 | (0.472, 1.674) | 0.716 |
| Yes | 543 (93.1) | 40 (6.9) | | | |
| Recent binge drinking[b] | | | | | |
| No | 313 (93.4) | 22 (6.6) | 1.113 | (0.634, 1.953) | 0.709 |
| Yes | 409 (92.7) | 32 (7.3) | | | |
| Recent cigarette use[a] | | | | | |
| No | 573 (94.2) | 35 (5.8) | 2.183** | (1.225, 3.891) | 0.007 |
| Yes | 150 (88.2) | 20 (11.8) | | | |
| Recent marijuana use[a] | | | | | |
| No | 522 (94.2) | 32 (5.8) | 1.985* | (1.082, 3.318) | 0.023 |
| Yes | 198 (89.6) | 23 (10.4) | | | |
| Recent sedative use[a] | | | | | |
| No | 704 (93.5) | 49 (6.5) | 5.388*** | (2.018, 14.383) | <0.001 |
| Yes | 16 (72.7) | 6 (27.3) | | | |
| Recent opiate use[a] | | | | | |
| No | 715 (93.3) | 51 (6.7) | 9.346*** | (2.556, 34.180) | <0.001 |
| Yes | 6 (60.0) | 4 (4.0) | | | |
| In an emotionally abusive relationship, past year | | | | | 0.006 |
| No | 651 (93.8) | 43 (6,2) | 2.523** | (1.272, 5.004) | |
| Yes | 72 (85.7) | 12 (14.3) | | | |
| In a physically abusive relationship, past year | | | | | 0.005 |
| No | 697 (93.4) | 49 (6.6) | 3.556* | (1.389, 9.107) | |
| Yes | 24 (80.0) | 6 (20.0) | | | |
| In a sexually abusive relationship, past year | | | | | 0.001 |
| No | 702 (93.5) | 49 (6.5) | 4.298** | (1.650, 11.193) | |
| Yes | 20 (76.9) | 6 (23.1) | | | |

*N* = 777.
[a]Use past 30 days; [b]Use past 2 weeks.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

self-injury to cope with the abuse. Previous research identifies childhood abuse, including emotional, physical, or sexual as a risk factor for self-injury [12]. It appears current abuse also places students at risk. University and college health and counseling centers should attempt to identify students by screening them for abusive relationships and self-injury. By identifying these students, appropriate action steps may be taken to assist them.

One possible technique to address these issues may be to train college students on signs and symptoms of self-injury and build student confidence in helping a friend who self-injures. In so doing, friends, roommates, classmates, and important others may be able to identify college students who are struggling with self-injury and refer them to treatment. Research indicates college students are most likely to seek help from a peer for mental health problems [13]. Increasing awareness and confidence in helping a friend with mental health problems such as self-injury may be an important step in prevention and intervention on college campuses.

Recent substance use, specifically cigarette, marijuana, sedative, and opiate use was related to the past year self-injury. Other studies indicate a major purpose for self-harm is to relieve negative emotions [14,15]. Similar motivations have been identified for engaging in substance use [16–19]. Students may be engaging in both substance use and self-injury as a means of coping with negative emotions and life's problems. Previous research found that students reporting self-injury also report problems with coping with stress and dealing with negative emotions [5]. College health professionals may consider developing and implementing programs on campuses aimed at teaching coping skills. Collaborating with campus counseling and psychological services may help to identify students in most need of these types of programs and ensure students in need receive additional assistance.

**Table 3.** Intentionally self-injured in the past year based on past year mental health issues.

| Item | Intentionally self-injured past year | | OR | CI | *p* |
|---|---|---|---|---|---|
| | No *N* (%) | Yes *N* (%) | | | |
| Felt hopeless | | | | | |
| No[a] | 434 (96.7) | 15 (3.3) | 3.991*** | (2.165, 7.358) | <0.001 |
| Yes | 290 (87.9) | 40 (12.1) | | | |
| Felt exhausted | | | | | |
| No[a] | 434 (96.7) | 15 (3.3) | 3.991*** | (2.165, 7.358) | <0.001 |
| Yes | 290 (87.9) | 40 (12.1) | | | |
| Felt overwhelmed | | | | | |
| No[a] | 163 (98.8) | 2 (1.2) | 7.672*** | (1.850, 31.822) | <0.001 |
| Yes | 563 (91.4) | 53 (8.6) | | | |
| Felt very lonely | | | | | |
| No[a] | 350 (98.3) | 6 (1.7) | 7.507*** | (3.173, 17.760) | <0.001 |
| Yes | 373 (88.6) | 48 (11.4) | | | |
| Felt very sad | | | | | |
| No[a] | 330 (98.5) | 5 (1.5) | 8.397*** | (3.310, 21.301) | <0.001 |
| Yes | 393 (88.7) | 50 (11.3) | | | |
| So depressed difficult to function | | | | | |
| No[a] | 540 (97.6) | 13 (2.4) | 9.482*** | (4.979, 18.057) | <0.001 |
| Yes | 184 (81.4) | 42 (18.6) | | | |
| Felt anxiety | | | | | |
| No[a] | 388 (97.7) | 9 (2.3) | 5.774*** | (2.781, 11.986) | <0.001 |
| Yes | 336 (88.2) | 45 (11.8) | | | |
| Felt overwhelming anger | | | | | |
| No[a] | 455 (98.3) | 8 (1.7) | 9.690*** | (4.506, 20.839) | <0.001 |
| Yes | 270 (85.4) | 46 (14.6) | | | |
| Seriously considered suicide | | | | | |
| No[a] | 688 (97.0) | 21 (3.0) | 30.106*** | (15.928, 56.903) | <0.001 |
| Yes | 37 (52.1) | 34 (47.9) | | | |
| Attempted suicide | | | | | |
| No[a] | 717 (95.7) | 32 (4.3) | 64.418*** | (26.747, 155.147) | <0.001 |
| Yes | 8 (25.8) | 23 (74.2) | | | |

*N* = 777.
[a]Referent.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

In both the univariate analysis and in the final model, seriously considered suicide in the past year and attempted suicide in the past year were significant. Research demonstrates an association between self-injury and suicide [20,21] and the present study supports those findings. In the present study, the final model accounted for 19%–48% of the variance in past year self-injury. Students with a history of seriously considering suicide were six times more likely and students ever attempting suicide were 16 times more likely than their counterparts to intentionally self-injure in the past year. Based on this study, it is clear that intervention is needed to identify students with a history of suicidal ideation and attempts and provide support and resources to help those who may be struggling in the college setting. Health professionals may screen for history as study findings indicate this is a high-risk group and ask how students are coping with stress and other problems. It may be important to directly ask about self-injury and refer to counseling and others resources as needed.

In this study, in the final model, only seriously considered suicide in the past year and attempted suicide in the past year were significant. Other studies have found that multiple factors contribute to self-injury among adolescents and young adults [22]. It is possible focusing on lifetime measures of substance abuse and emotional, physical, and sexual abuse would be predictors of self-injury among college students. It may be that recent substance abuse and past year abuse experiences are not factors in self-injury compared to lifetime experiences. Additional research is needed to examine these concepts further.

Transitioning from high school to college can be challenging for some students. In particular, students with mental and emotional health problems

**Table 4.** Final logistic regression model with adjusted odds ratios and confidence intervals for the past year intentional injury.

| Item | OR | (95% CI) | Item | OR | (95% CI) |
|---|---|---|---|---|---|
| Grade level | | | Felt hopeless | | |
| 1st/2nd[a] | 1.0 | | No[a] | 1.0 | |
| 3rd/4th/5th/Grade Student | 2.154 | (0.947, 4.900) | Yes | .546 | (0.198, 1.504) |
| Relationship status | | | Felt very lonely | | |
| Not in a relationship[a] | 1.0 | | No[a] | 1.0 | |
| In a relationship | 2.296 | (0.985, 5.352) | Yes | 1.793 | (0.460, 6.983) |
| Recent cigarette use | | | Felt very sad | | |
| No[a] | 1.0 | | No[a] | 1.0 | |
| Yes | 1.674 | (0.709, 3.951) | Yes | 1.262 | (0.286, 5.574) |
| Recent marijuana use | | | So depressed difficult to function | | |
| No[a] | 1.0 | | No[a] | 1.0 | |
| Yes | 0.936 | (0.390, 2.250) | Yes | 1.893 | (0.613, 5.848) |
| Recent sedative use | | | Felt overwhelming anger | | |
| No[a] | 1.0 | | No[a] | 1.0 | |
| Yes | 3.019 | (0.579, 15.731) | Yes | 2.244 | (0.787, 6.395) |
| Recent opiate use | | | Ever felt overwhelmed | | |
| No[a] | 1.0 | | No[a] | 1.0 | |
| Yes | 4.202 | (0.257, 68.752) | Yes | 2.179 | (0.755, 6.291) |
| In an emotionally abusive relationship past 12 months | | | Seriously considered suicide | | |
| No[a] | 1.0 | | No[a] | 1.0 | |
| Yes | 0.878 | (0.258, 2.984) | Yes | 6.224*** | (2.294, 16.889) |
| In a physically abusive relationship past 12 months | | | Attempted suicide | | |
| No[a] | 1.0 | | No[a] | 1.0 | |
| Yes | 0.378 | (0.033, 4.324) | Yes | 16.281*** | (3.791, 69.918) |
| In a sexually abusive relationship past 12 months | | | | | |
| No[a] | 1.0 | | | | |
| Yes | 0.425 | (0.068, 2.670) | | | |

[a]Indicates referent; ***$p < 0.001$.

A total of 777 cases analyzed and the full model significantly predicted the past year self-injury (omnibus chi-square = 153.111, df = 17, $p < 0.001$). The model accounted for 19%–48% of the variance in the past year self-injury.

report increased difficulty transitioning to the college setting [23,24]. Students lacking positive coping skills may turn to negative behaviors such as self-injury to cope with stress. Perhaps, programs aimed at the first year students and students with a history of mental health problems may be an effective strategy in reducing self-injury. Specifically, teaching positive coping skills and incorporating stress management into programs may be important for students.

A secondary outcome of these programs could also be connecting students to others on campus as well as key campus health and mental health professionals. Students who were not in a relationship were found to be at risk for self-injury. Similarly, first-year students, who may not have built protective relationships on campus, were similarly at risk. Social connectedness, or feelings of belongingness, is critical for positive health and mental health [25]. Encouraging campus communities that are engaging and welcoming to new students and building positive connections among students may also encourage positive behaviors while reducing negative behaviors such as self-injury. Lastly, educating college students on warning signs of self-injury and building confidence in students to refer peers to mental health resources may also be an important step. All such programs should be evaluated for effectiveness.

### *Limitations*

Study limitations should be noted. Due to the self-report nature of the survey, all responses are dependent on the accuracy and honesty of the participants. It is possible some participants responded in a socially desirable manner. In addition, due to the cross-sectional nature of the study, causal relationships cannot be determined. Also, several variables in this study were recoded and dichotomized, which may obscure potential non-linearity in the relationship between the variables and study outcome variables. Future researchers may wish to use continuous variables and employ additional

statistical analyses to examine self-injury among college students. In addition, only two variables were significant in the final model, thus, caution should be exercised when interpreting the model variance in this study due to using the Cox and Snell $R^2$. Future researchers may wish to employ a different measure of variance in future studies.

## Conclusion

The present study found greater than 1 in 20 students reported self-injury in the past 12 months. It appears additional attention on college campuses is warranted to address this negative health behavior. Younger students were found to be at greater risk; thus, programming geared towards incoming freshman and first-year students may prevent or reduce self-injury. In addition, students with previous mental health issues were also at risk. Encouraging all students to utilize on-campus mental health resources may increase the likelihood at-risk students reach out for help rather than using self-injury as a coping skill. In general, increasing awareness on college campuses through prevention and intervention programming is needed.

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