

Insomnia Symptoms, Nightmares, and Suicidal Ideation in a College Student Sample

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Study Objectives: The purpose of this study was to investigate whether insomnia symptoms and nightmares are related to suicidal ideation independent of one another and independent of the symptoms of anxiety, depression, and posttraumatic stress disorder (PTSD).

Design: The study consisted of questionnaires examining insomnia symptoms and nightmares, and symptoms of depression, anxiety, and PTSD. The questionnaires were administered online.

Setting: University.

Patients or Participants: 583 undergraduate students at a large, public university in southeastern United States.

Interventions: N/A.

Measurements and Results: Results indicated that both nightmares and insomnia symptoms were related to suicidal ideation, independent of one another. Nightmares, but not insomnia symptoms, were related to suicidal ideation after controlling for the symptoms of anxiety, depression, and PTSD.

Conclusions: Nightmares may be more than a marker of PTSD and hence may be important in the identification of suicidal ideation.

Keywords: Nightmares, insomnia symptoms, suicidal ideation

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SUICIDE IS A SIGNIFICANT PROBLEM IN THE UNITED STATES. HERON ET AL.¹ REPORT THAT SUICIDE WAS THE 11TH LEADING CAUSE OF DEATH IN THE UNITED STATES in 2006, accounting for 33,300 deaths. Although the etiology of suicidal behavior appears to be complex, steps toward understanding it can be made through the identification of suicide risk factors. Although over 90% of individuals who die by suicide have a mental disorder at the time of their death,² the vast majority of people with mental disorders do not die by suicide. Thus, identifying risk factors beyond mental disorders may help in determining who is at the highest risk of suicidal behavior.

A growing empirical literature has examined insomnia symptoms as a possible risk factor for a range of suicidal behavior, including suicidal ideation,³ suicide attempts,⁴ and death by suicide.⁵⁻⁷ Several studies have also found a relation between nightmares and suicidal behaviors.⁸⁻¹⁰ However, few studies have examined whether nightmares or insomnia symptoms are related to suicidal ideation and behaviors independent of psychiatric illness.

Cukrowicz and colleagues⁸ examined if nightmares and insomnia symptoms were related to suicidal ideation independent of depressive symptoms in a sample of 222 college students. They found that nightmares and insomnia symptoms were both related to increased risk of suicidal ideation in college students; multiple regression revealed that nightmares, but not insomnia symptoms, were related to suicidal ideation independent of depressive symptoms.⁸ However, this study did not control for anxiety or Post-Traumatic Stress Disorder (PTSD) symp-

toms that might explain this relation. Sjöström et al.⁹ examined whether insomnia symptoms and nightmares were related to suicide risk independent of Diagnostic and Statistical Manual of Mental Disorders (DSM) Axis I disorders in a sample of suicide attempters.⁹ Their sample included 165 patients who had been admitted to a hospital following a medically serious suicide attempt. Onset insomnia, terminal insomnia, and nightmares were all significantly associated with higher scores on the Suicide Assessment Scale (SUAS). Nightmares, but not insomnia, were significantly related to high scores on the suicidality subscale of the SUAS, and remained so after controlling for DSM Axis I disorders (including major depression, other depression, psychotic disorders, alcohol/substance use disorders, anxiety disorders, and PTSD), depressive symptom intensity, and anxiety symptom intensity. Although Sjöström et al. demonstrated that nightmares were associated with a greater degree of suicidality among people who are suicidal, the question remains whether nightmares differentiate people who are suicidal from people who are not. Therefore, more research investigating the relation between nightmares and suicidal behavior is needed.

Taken together, these initial studies indicate that nightmares appear to be a potential risk factor for suicidal behaviors, but further research is needed, particularly to determine whether the relation between nightmares and suicidal ideation is explained by PTSD symptoms. Nightmares are not only highly comorbid with PTSD, but are also a defining feature of PTSD, which has been shown to be related to suicide.¹¹ The present study aimed to characterize the relation between insomnia symptoms, nightmares, and suicidal ideation. The study tested whether insomnia symptoms and nightmares were statistical correlates of suicidal ideation. Further, it evaluated whether insomnia symptoms and nightmares were significantly related to suicidal ideation independent of one another and independent of symptoms of psychopathology.

This study sought to extend the findings of prior investigators in this area in important ways. Whereas Cukrowicz et al.⁸

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found that nightmares were related to suicidal ideation independent of depressive symptoms, but did not statistically control for anxiety or PTSD symptoms, the current study controlled for the symptoms of depression, anxiety, and PTSD. The current study also sought to extend the work of Sjöström et al.⁹ by utilizing a different population (college students vs. suicide attempters), in a different location (U.S. vs. Sweden), and using a different measure of suicidality (SBQ vs. SUAS).

Based on prior published findings, we hypothesized that both insomnia symptoms and nightmares would be significantly related to suicidal ideation. We anticipated that nightmares would be related to suicidal ideation independent of insomnia symptoms. We also predicted that nightmares would be significantly related to suicidal ideation when symptoms of insomnia, depression, anxiety, and PTSD were controlled.

METHODS

Participants and Procedure

Participants consisted of 583 individuals from a large public university in the southeastern United States. Data were collected from November to December 2008 using the SONA online survey system. SONA is a web-based survey management system that allows individuals to take part in studies online and receive extra course credit. The study was advertised in undergraduate psychology classes that offered extra credit for taking part in research. Participants logged onto the SONA system and selected the study. The participants were asked to read a cover sheet informing them of the purpose of the project and their rights prior to completing the survey. Participants were required to complete the survey in a single sitting. At the conclusion of the survey (or upon withdrawing from the study), participants were shown a referral sheet with contact information for local mental health services, should they desire counseling following the study. All participants received extra course credit. Participants younger than age 18 or over the age of 30 were excluded from the present study. The study was IRB approved, and the research was conducted in accordance with the IRB protocol.

The sample consisted of 451 females and 132 males, with an age range of 18-29 years (mean age 19.4 years, SD 1.7 years). Although the class breakdown was not asked, the age frequencies suggest that most of the participants were likely freshmen or sophomores. In keeping with the characteristics of the region, most participants (96.1%) were Caucasian.

Measures

Insomnia symptoms

The *Insomnia Severity Index (ISI)*¹² is a 7-item self-report scale that assesses the individual's subjective report of current (last 2 weeks) insomnia symptoms. Each item is scored on a 0-4 scale, with total scores ranging from 0-28. Scores of 0-7 are considered to be no insomnia, 8-14 are indicative of subthreshold insomnia, 15-21 are considered an indicator of moderate insomnia, and 22-28 are considered to indicate severe insomnia. The ISI has been shown to have adequate test-retest reliability over 3 months and concurrent validity with sleep diaries and polysomnography and has been used in previous research as a measure of insomnia severity.^{12,13} The ISI has also been used to

determine the presence or absence of clinically significant insomnia symptoms using a cutoff of 15.^{14,15} In the current sample the mean was 8.84 (SD 4.69) with acceptable inter-item consistency ($\alpha = 0.84$). It should be noted that although the mean for the current study is indicative of sub-threshold insomnia, it is only slightly higher than the mean found in other research involving college students (e.g., M 7.13, SD 5.10).⁸

Nightmares

The *Disturbing Dreams and Nightmares Severity Index (DDNSI)*¹⁶ is a revised version of the Nightmare Frequency Questionnaire¹⁷ and was used to measure current nightmare (or disturbing dream) severity and frequency. It measures the number of nights with nightmares per week (0-7 nights) and number of total nightmares per week. The DDNSI also measures the severity and intensity of the nightmares on a Likert-type scale ranging from no problem (0) to extremely severe problem (6), as well as how often nightmares result in awakenings ranging from never/rarely (0) to always (4). The index score is calculated by adding the number of nightmares per week (up to 14), number of nights with nightmares per week, and ratings of the severity of the nightmares, the intensity of the nightmares, and the frequency of nightmare-related awakenings. A score > 10 may indicate the presence of a nightmare disorder.¹⁶ In the current sample, the mean was 3.78 (SD 4.96) with acceptable inter-item consistency ($\alpha = 0.87$). Some investigators define nightmares as bad dreams that awaken the sleeper,¹⁸ but research on suicidal behavior has not differentiated between nightmares and disturbing dreams. We use the term "nightmare" more broadly in this paper to refer to bad dreams, nightmares or both to be consistent with the literature examining nightmares and suicidal behavior.

Depressive symptoms

The *Center for Epidemiological Studies - Depression Scale (CES-D)* is a 20-item, self-report measure designed to assess levels of depressive symptoms during the past week.¹⁹ The CES-D is scored on a 4-point scale (0-3), with scores ranging from 0-60 and ≥ 16 being a common cutoff for clinical referral. It has high internal consistency for both the general ($\alpha = 0.85$) and clinical ($\alpha = 0.90$) populations.¹⁹ It has been demonstrated to be a valid screening measure for detecting depressive symptoms.²⁰ The CES-D was used in the current study as a measure of the severity of depressive symptoms. In the current sample the mean was 16.38 (SD 9.88) with acceptable inter-item consistency ($\alpha = 0.90$).

PTSD symptoms

The *PTSD Checklist-Civilian Version (PCL)* is a measure of posttraumatic stress disorder symptom severity in the past month.²¹ It consists of 17 questions in which participants are asked if they are bothered by each symptom on a scale ranging from 1 (not at all) to 5 (extremely), with total scores ranging from 17 to 85. There is no single agreed-upon cutoff for the PCL, but 44 and 50 have each been used as cutoff scores in prior research.²² The PCL has high internal consistency ($\alpha = 0.94$) and has been shown to be valid when compared to a clinician-administered PTSD scale.²³ In the current sample the mean was 34.30 (SD 11.81) with acceptable inter-item consistency ($\alpha = 0.92$).

Anxiety symptoms

The *Zung Self-Rating Anxiety Scale* (SAS) is a 20-item measure of current anxiety symptoms.²⁴ Participants are asked to mark the option that corresponds with how they have felt or behaved in the last several days. Each item is rated on a 4-point Likert-type scale. In the current study, response options ranged from 1 (a little of the time) to 4 (most of the time). It should be noted that in the original SAS, 1 corresponded to “none or a little of the time.”²⁴ This difference, which was due to administrative error in the current study, may have resulted in participants skipping items if they did not experience certain anxiety symptoms in the last several days. The proportion of the sample with missing data on this scale (16%) was larger than for the other measures. Nonetheless, we used multiple imputation to handle the missing data (as detailed below) and determined that it was still appropriate to use the measure, as any bias introduced through this imputation would most likely be conservative (that is, anxiety scores might be slightly inflated, making it less likely to detect effects of sleep difficulties independent of anxiety symptoms). The total score ranges from 20 to 80 with scores ≥ 50 indicating clinically significant anxiety symptoms.²⁵ The SAS has been shown to discriminate between a normal adult sample and those with anxiety disorders. In the current sample the mean was 36.83 (SD 8.31) with acceptable inter-item consistency ($\alpha = 0.85$).

Suicidal ideation

The *Suicidal Behaviors Questionnaire* (SBQ),²⁶ shortened by Cole,²⁷ is a 4-item, self-report measure designed to assess levels of suicidal thoughts and behaviors. The 4 items are summed to create a score ranging from 0 to 16. The 4 test items are: Have you ever thought about or attempted to kill yourself in your lifetime?; How often have you thought about killing yourself in the last year?; Have you ever told someone that you were going to commit suicide, or that you might do it in your lifetime?; and How likely is it that you will attempt suicide in your lifetime? Thus, the SBQ has questions about past and future suicidal ideation and behaviors. Factor analysis suggests that these questions comprise a single factor,²⁷ which can be conceptualized broadly as the person’s current rating of their suicide risk. The SBQ has moderate internal consistency with an α of 0.75 in a clinical sample and 0.80 in a non-clinical sample. It has been validated as a measure of suicidal ideation.²⁸ In the current sample, the mean was 1.71 (SD 2.74) with acceptable inter-item consistency ($\alpha = 0.84$). To date, a clinical cutoff has not been established for the SBQ. The scores on the SBQ for the current study spanned from 0-15, suggesting that our sample includes participants with elevated levels of suicidality.

Analyses

Because data were collected via an online survey, special steps were taken to check data quality prior to conducting analyses. Specifically, participants who took ≤ 9 minutes to complete the survey (duration M 19.7, SD 10.4) were carefully reviewed for inconsistencies in responding. Of the original 614 participants in the dataset, 31 (5%) were removed from the dataset due to potentially biased response set, missing data for the dependent variable, etc., resulting in data from 583 individuals being used for the analyses.

T-tests demonstrated that missingness on each of the independent variables was not significantly related to the SBQ, the dependent variable. Therefore, data for all of the independent variables met the assumptions of missing at random, so multiple imputation was used. In total, only 4.2% of all data points were missing and were therefore imputed. Missing values were not imputed for the SBQ, as it is the dependent variable in all of the analyses. The data were imputed 5 times, then combined to yield the imputed results. R^2 and standardized beta values were determined by averaging their values across the 5 imputations.²⁹ Variables were centered before testing interaction terms.

Due to high correlations among the symptoms of depression, anxiety, and PTSD, raising a question of multicollinearity, separate regression analyses were run testing nightmares as a predictor of suicidal ideation controlling for each of those variables (results not shown). Results of these analyses were similar to the multivariate results, suggesting that findings cannot be explained by multicollinearity. Thus, we report only the multivariate results. Similarly, analyses were conducted after removing the insomnia and nightmare questions from the CES-D, SAS, and PCL (results not shown). These analyses yielded the same pattern of significant findings as in the analyses that included the overlapping items.

The analyses consisted of simple and multiple linear regressions and analysis of variance (ANOVA). Preliminary analyses were run to ensure normality, homoscedasticity, and linearity. The Suicidal Behaviors Questionnaire significantly deviated from normality (skew = 2.2, kurtosis = 5.4). Since many of the values for the Suicidal Behaviors Questionnaire were 0, a square-root transformation was employed to restore normality. Following the transformation, both the skew and kurtosis were less than |1| (skew = 0.87, kurtosis = -0.28), indicating that the transformed data do not deviate significantly from normality. All subsequent analyses with the SBQ employed square-root transformed data.

An ANOVA was utilized to test for effects of sex. It was determined that sex was not significantly related to suicidal ideation, $F_{1,581} = 0.98$, $P = 0.32$, and hence sex was not controlled for in the analyses. All analyses were conducted using standard statistical software.³⁰

RESULTS

Means of study variables, along with the proportion exceeding clinical cutoff, are provided in Table 1. Overall, scores on the CES-D were high, with 44% of participants scoring at or above the cutoff score of 16, but consistent with other studies using college student samples.³¹⁻³³ Correlations are found in Table 2.

In order to test the first hypothesis, that insomnia symptoms would be significantly related to suicidal ideation, a simple linear regression analysis was performed. Insomnia symptoms were significantly related to suicidal ideation, $B = 0.045$ ($SE = 0.009$), $P < 0.01$, $d = 0.43$, $R^2 = 0.05$ and explained a small but significant amount of the variance in suicidal ideation. Therefore, the first hypothesis was supported.

A simple linear regression was performed to test the second hypothesis that nightmares would be significantly related to suicidal ideation. Nightmares were significantly related to suicidal ideation, $B = 0.054$ ($SE = 0.008$), $P < 0.01$, $d = 0.56$, $R^2 = 0.07$. Therefore, the second hypothesis was also supported.

Table 1—Descriptive statistics and the proportion of the sample over the clinical cutoff

Measure	N	Mean	SD	Clinical cutoff	% over clinical cutoff
Insomnia Symptoms	581	8.84	4.69	15	13.1%
Nightmares	579	3.78	4.96	11	10.2%
Depressive Symptoms	571	16.38	9.88	16	44.4%
PTSD Symptoms	577	34.30	11.81	50	12.1%
Anxiety Symptoms	497	36.83	8.31	50	7.8%
Suicidal Ideation	583	1.71	2.74	N/A	N/A

Based on sample before imputation of missing data. Insomnia symptoms were measured using the Insomnia Severity Index (ISI), nightmares were measured using the Disturbing Dreams and Nightmares Severity Index (DDNSI), depressive symptoms were measured using the Center for Epidemiological Studies Depression Scale (CESD), PTSD symptoms were measured using the PTSD Checklist-Civilian Version (PCL), anxiety symptoms were measured using the Zung Self-Rating Anxiety Scale (SAS), and suicidal ideation was measured using the Suicidal Behaviors Questionnaire (SBQ).

Table 2—Correlations of study variables

Variable	1	2	3	4	5	6
1. Suicidal Ideation	-	0.27*	0.21*	0.41*	0.37*	0.44*
2. Nightmares		-	0.21*	0.28*	0.37*	0.42*
3. Insomnia Symptoms			-	0.53*	0.60*	0.53*
4. Depressive Symptoms				-	0.79*	0.68*
5. Anxiety Symptoms					-	0.74*
6. PTSD Symptoms						-

N = 583 with slight variation due to missing data on individual measures. For anxiety symptoms, n = 495. *P < 0.001

To test the third hypothesis—that nightmares would be related to suicidal ideation independent of insomnia symptoms—multiple linear regression was utilized, with insomnia symptoms entered in step one and nightmares in step two (see Table 3). Both insomnia symptoms and nightmares were significantly associated with suicidal ideation, with small to moderate effect sizes ($d = 0.32$ and $d = 0.47$, respectively). Step 2 explained a significant amount of variance in suicidal ideation, with an increase in R^2 of 0.05, $F_{1,582} = 33.7$, $P < 0.01$. Therefore, the third hypothesis was supported.

In order to test the fourth hypothesis, that nightmares would be significantly related to suicidal ideation when symptoms of insomnia, depression, anxiety, and PTSD are controlled, a multiple linear regression was utilized (see Table 4). Depressive symptoms, anxiety symptoms, and PTSD symptoms were added in the first step of the regression. The second step consisted of insomnia symptoms and the third step of the regression consisted of nightmares. In step 1, depressive symptoms and PTSD symptoms were significantly related to suicidal ideation, whereas anxiety symptoms were not related to suicidal ideation. In step 2, when insomnia symptoms were added to the regression, depressive symptoms and PTSD

Table 3—Insomnia symptoms and nightmares predicting suicidal ideation

Predictors	R ²	B	SE	t	P
Step 1:	0.045				< 0.01
Insomnia		0.045	0.009	5.23	< 0.01
Step 2:	0.097				< 0.01
Insomnia		0.035	0.009	4.07	< 0.01
Nightmares		0.047	0.008	5.80	< 0.01

Table 4—Insomnia symptoms and nightmares predicting suicidal ideation, controlling for other psychopathology

Predictors	R ²	B	SE	t	P
Step 1:	0.217				
Depression		0.024	0.007	3.63	< 0.01
Anxiety		-0.006	0.009	-0.62	0.54
PTSD		0.027	0.005	5.49	< 0.01
Step 2:	0.221				
Depression		0.025	0.007	3.77	< 0.01
Anxiety		-0.002	0.009	-0.20	0.84
PTSD		0.028	0.005	5.74	< 0.01
Insomnia		-0.018	0.010	-1.78	0.07
Step 3:	0.230				
Depression		0.026	0.007	3.94	< 0.01
Anxiety		-0.005	0.010	-0.53	0.60
PTSD		0.025	0.005	5.00	< 0.01
Insomnia		-0.016	0.010	-1.63	0.10
Nightmares		0.021	0.008	2.53	0.01

symptoms remained significantly related to suicidal ideation, but insomnia symptoms were not significantly related to suicidal ideation. When nightmares were added to the regression in step 3, depressive symptoms, PTSD symptoms, and nightmares were significantly related to suicidal ideation, whereas anxiety symptoms and insomnia symptoms were not. The R^2 change between the second and third step was significant, R^2 change = 0.01, $F_{1,582} = 6.52$, $P < 0.05$. Therefore, the fourth hypothesis was supported.

DISCUSSION

The results of this study indicate that insomnia symptoms and nightmares are related to suicidal ideation independent of one another. Further, when symptoms of depression, anxiety, and PTSD are controlled, nightmares, but not insomnia symptoms, are related to suicidal ideation. These findings suggest that nightmares may be an independent risk factor for suicidal ideation.

Given that nightmares are a core symptom of PTSD,³⁴ it is notable that nightmares are associated with suicidal ideation independent of PTSD. This finding is consistent with results reported by Sjöström et al.⁹ and extends their work by demonstrating the effect in a nonclinical sample that also differs from their sample geographically and demographically. The current findings suggest that having nightmares, regardless of whether an individual has PTSD or other psychopathology, may increase the likelihood of experiencing suicidal ideation.

Further research is needed to determine why nightmares are independently related to suicidal ideation. It is possible that

nightmares predict suicidal ideation independently because they are distressing, are not easily controlled, and are unpredictable, which may lead to hopelessness. The presence of nightmares may add distress above and beyond symptoms of insomnia, depression, anxiety, and PTSD and the additional distress may result in higher suicidal ideation. Nightmares may also be a by-product of REM disruption, which has been shown to be related to suicidal behavior in depressed individuals.³⁵ The finding that nightmares are independently related to suicidal ideation is significant as it has implications for identification of those at risk of suicide. Those who have nightmares and a mental disorder may be at higher risk of suicidal ideation than those with only a mental disorder. Although these findings are demonstrated for suicidal ideation, further research is needed to extend these findings to death by suicide. Since efficacious therapies for nightmares exist,³⁶ this finding also presents an opportunity for intervention with those who may be at higher risk of suicidal behavior.

The current study also found that insomnia symptoms were associated with suicidal ideation independent of nightmares. This finding contrasts with those reported by Cukrowicz et al.,⁸ who found that insomnia symptoms were not significantly related to suicidal ideation after controlling for nightmares. This difference may be attributable to the large sample size in the current study, which enabled the detection of even relatively small effects.

Insomnia symptoms are often present in major depressive disorder, posttraumatic stress disorder, and generalized anxiety disorder.³⁴ Given these relations, it is important to determine whether insomnia symptoms are independently associated with suicidal ideation, or if the relation may be explained by these disorders. In the current study, we found that the relation between insomnia symptoms and suicidal ideation is completely mediated by symptoms of depression, anxiety, and PTSD. Although symptoms of insomnia were not significantly related to suicidal ideation after controlling for symptoms of depression, anxiety, and PTSD, they remain important because of their relation to mental disorders such as depression. Research has demonstrated that insomnia is not only a symptom but is also a risk factor for both new onset and recurrence of major depressive disorder.³⁷ Even though insomnia symptoms may not explain suicidal ideation beyond symptoms of depression, anxiety, and PTSD, they may play a role in the development of depression, and hence be an important variable for suicide research.

Limitations

There are several limitations of the current study. First, the use of a college population is a limitation as suicidal behavior differs by age and education level. The population in this study was between 18 and 29, was mostly female, and had at least a high school education. Therefore, these findings may not generalize to other populations. Nonetheless, it is an important population to study as suicide is the third leading cause of death for college-age individuals.¹ Second, since the SBQ is a broad measure of suicidal thoughts and behaviors, it may be less sensitive than other measures to recent changes in suicidal ideation. However, the SBQ is a commonly used, validated measure of suicidal ideation. In the current study, the nightmare scale measured current nightmare symptoms, whereas the suicidal ideation measure included current and past suicidal

thoughts. Although this difference may present interpretive complexity, we believe it introduces a conservative bias. That is, the fact that the scales differ should reduce the correlation between nightmares and suicidal thoughts, making significant results harder to obtain. Thus, the fact that our study yielded significant findings despite this conservative bias only strengthens our confidence in the findings. Third, using symptoms of disorders instead of diagnoses can be viewed as a limitation of the current study. However, the current study employed validated instruments that have been shown to be highly related to diagnoses of those disorders. Fourth, the use of a cross-sectional design is a further limitation of this study as it is impossible to determine whether insomnia symptoms or nightmares predict changes in suicidal ideation or changes in suicidal ideation predict changes in sleep. Lastly, the sample was mostly Caucasian and, therefore, results may not generalize to more diverse populations. Nonetheless, the findings from the current study, that nightmares are related to suicidal ideation after controlling for symptoms of insomnia, depression, anxiety, and PTSD, provide an avenue for future work.

Conclusions and Future Directions

The goal of the current research was to lay the groundwork to determine whether insomnia symptoms or nightmares may be risk factors for suicide. This study shows that nightmares are related to suicidal ideation independent of symptoms of insomnia, depression, anxiety, and PTSD. Nonetheless, much work is left to determine the relation between nightmares and suicide. Future studies should examine the relation between insomnia symptoms, nightmares, and suicidal ideation in different age groups, especially older adults, to determine whether these findings generalize beyond a college-age sample. Prospective research would also be valuable to determine whether changes in insomnia symptoms or nightmares predict changes in suicidal ideation. Although measuring symptoms of disorders, as done in the current study, may be a good proxy for the disorder, future research utilizing diagnoses should be conducted. Similarly, research utilizing medically serious suicide attempts or death by suicide instead of suicidal ideation is needed to determine whether nightmares are a risk factor for suicide.

The current study is the first study to demonstrate that nightmares are associated with suicidal ideation while controlling for symptoms of insomnia, depression, anxiety, and PTSD in a nonclinical sample. Combined with the findings of Sjöstrom et al.,⁹ the current study demonstrates the need to further investigate the relation between nightmares and suicidal ideation, medically serious suicide attempts, and death by suicide. Through further investigation, it can be determined whether nightmares are a risk factor for suicide. If so, this knowledge may enhance our ability to assess and treat suicidal individuals.

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