



Short communication

Emotion regulation difficulties are associated with nightmares and suicide attempts in an adult psychiatric inpatient sample

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ABSTRACT

Although many studies have examined potential moderators of the relation between nightmares and suicide, few have examined emotion regulation, particularly utilizing severe populations such as psychiatric inpatients. The present study sought to investigate whether emotion regulation difficulties are associated with nightmares and suicide attempts in an inpatient sample. We included 2,683 psychiatric inpatients ranging from 18 to 81 years ($M = 34.35$, $SD = 14.70$). Nightmare frequency, emotion regulation difficulties, and their interaction predicted previous suicide attempts. Limitations include the homogeneity and cross-sectional nature of the sample. Suggestions for future study are discussed.

1. Introduction

Myriad factors are related to suicide and suicide attempts. Two crucial factors have begun receiving more concentrated and rigorous research attention in recent years: sleep disturbances and emotion regulation processes. First, sleep disturbances - including issues such as nightmares and insomnia - have been repeatedly linked to increased suicide risk (Nadorff et al., 2014; M.R. Nadorff et al., 2013; Ward-Ciesielski et al., 2018; Winsler et al., 2015) and death by suicide. (Bernert et al., 2014; Kodaka et al., 2014; M.L. Perlis et al., 2016; M.L. Perlis et al., 2016) In particular, research linking nightmares to current (Marinova et al., 2014; Sjöström et al., 2007) and future (Hochard et al., 2015; Sjöström et al., 2009) suicidal thoughts and behaviors is growing. Second, emotion regulation - broadly involving awareness of emotions as well as managing and responding to emotional experiences - has well-documented links to suicidal behavior within a range of psychological disorders (Chesney et al., 2014; Neece et al., 2013; Rajappa et al., 2012) and in individuals with previous suicide attempt histories. (Hazlett et al., 2016; Vasudeva and Singh, 2017) In acknowledgement of this relation, several new (Ghahramanlou-Holloway et al., 2012) and established (Linehan, 1993) suicide-focused treatments target increasing emotion regulation capabilities.

Notably, the relation between emotion regulation and suicidal

behavior is not a foregone conclusion. For instance, in a recent large-scale study of outpatients, (Harris et al., 2018) emotion regulation (as measured by the Difficulties in Emotion Regulation Scale (Gratz and Roemer, 2004)) was not significantly associated with suicide attempts after controlling for 11 psychiatric diagnoses. While this study raises doubts about the independent contribution of emotion regulation to suicidal behaviors, above and beyond diagnosis, their sample limited prediction to suicide attempt history and only 16.6% of participants had this history. Therefore, additional research is needed to further clarify the possible link between emotion regulation and suicide.

Recently, studies have sought to understand the combined and interactional effects of sleep disturbance and emotion regulation. In fact, recent findings suggest poor sleep quality negatively affects subsequent performance on emotion regulation tasks. (Baum et al., 2014; Mauss et al., 2013; Sandru and Voinescu, 2014) For instance, in an adult sample, “poor sleepers” (i.e., those suffering from insomnia) reported significantly greater emotion regulation difficulties than “good sleepers,” and “poor sleepers” had particular difficulty controlling impulses when experiencing negative emotions. (Sandru and Voinescu, 2014) Furthermore, emotion regulation difficulties and difficulty managing emotional reactivity are implicated in the maintenance of sleep disturbance. (Baglioni et al., 2010) In combination, sleep disturbance and emotion regulation appear to contribute to a range of psychological problems from depression and anxiety

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(Markarian et al., 2013) to suicide. (Littlewood et al., 2017; Winsper and Tang, 2014) It appears that sleep and emotion regulation processes interact and that simultaneous disruptions create a particularly high-risk context for potentially lethal behaviors.

Recent meta-analytic efforts to identify robust predictors of suicidal behaviors reveal that decades of research have shed limited light on this process. (Franklin et al., 2017) Such demoralizing aggregated findings suggest a need for more empirical attention, with acknowledgement of limitations of the past. Notably, most previous research on risk factors for suicide has relied on examining relations between single, isolated variables and suicide-related outcomes. More complex models are needed to determine whether constellations of variables might provide more explanatory power. Therefore, examining the interplay between sleep disturbances and emotion regulation processes, especially in high-risk and relevant populations of psychiatric inpatients, provides one attempt to expand the literature toward more transactional explanations of suicide risk. Thus, the present study sought to investigate whether emotion regulation difficulties are associated with nightmares, a common sleep disorder, and suicide attempts in an inpatient sample. Specifically, we hypothesize that emotion regulation will significantly impact the relationship between nightmares and prior suicide attempts.

2. Method

2.1. Participants

The present sample included 2683 psychiatric inpatients ranging in age from 18 to 81 ($M = 34.35$, $SD = 14.70$). These patients typically manifest multiple comorbid conditions, prominently mood, anxiety, substance-related, and personality disorders. Most are referred following unsatisfactory response to prior medical and/or psychological treatments. The sample was slightly skewed female (52.5%) and a large majority (90.5%) was Caucasian. Average length of hospitalization was 43.42 days ($SD = 21.18$).

2.2. Procedures

As part of an ongoing standard outcomes battery beginning in July 2012, patients completed an assessment protocol. All patients admitted to the hospital were approached on their unit, and those electing to participate completed study instruments at admission via an existing computer-based assessment system, with the aid of a trained research assistant. This study was approved by the Institutional Review Board of Baylor College of Medicine.

2.3. Measures

2.3.1. Emotion regulation difficulties

The Difficulties in Emotion Regulation Scale (DERS (Hayes, 2013)) is a self-report measure assessing emotion regulation difficulties. The 36 items load onto six factors: Nonacceptance of Emotional Responses, Difficulties Engaging in Goal-Directed Behavior, Impulse Control Difficulties, Lack of Emotional Awareness, Limited Access to Emotion Regulation Strategies, and Lack of Emotional Clarity. (Gratz and Roemer, 2004) The DERS has high internal consistency and strong predictive validity. Normative data for individual subscales are available for both student (Gratz and Roemer, 2004; Salsman and Linehan, 2012) and inpatient (Fowler et al., 2014) samples. Internal consistency for the total score in the present sample was excellent (Cronbach's alpha = 0.95).

2.3.2. Lifetime number of suicide attempts

Participants were asked if they had made a suicide attempt in their lifetime. Participants indicating a previous suicide attempt were asked to report the total number of previous attempts. The number of reported previous suicide attempts ranged from 0 to 20 ($M = 0.71$,

$SD = 1.61$).

2.3.3. Frightening dreams or nightmares

Participants were asked to report the number of times they experienced a frightening dream or nightmare each of the past two weeks. The number of reported nightmares ranged from zero to 65 ($M = 1.29$, $SD = 3.24$).

2.4. Data analysis

All analyses were conducted using SPSS Version 24; moderation analyses were calculated using Model 1 of the Process Macro. (Hayes, 2013) The predictor variable was number of nightmares, the outcome variable was number of previous suicide attempts, and emotion regulation difficulties (DERS total) was the moderator. Subsequent analyses were conducted using each DERS subscale as a moderator.

3. Results

Results examining emotion regulation difficulties as a moderator of the relationship between nightmare frequency and previous suicide attempts ($R^2 = 0.04$, $F(3,1287) = 18.95$, $p < .001$) revealed that emotion regulation difficulties ($b = 0.01$, $p < .001$), nightmare frequency ($b = 0.05$, $p < 0.001$), and their interaction ($p = .013$) were significantly related to previous suicide attempts. The interaction between emotion regulation difficulties and nightmare frequency ($\Delta R^2 = 0.01$) was significant at mean ($b = 0.05$, $p < .001$) and high ($b = 0.07$, $p < .001$) levels of emotion regulation difficulties but not at low levels ($b = 0.03$, $p = .065$), indicating the association between nightmare frequency and suicide attempts was strongest at high levels of emotion regulation difficulties.

Next, the analysis was replicated substituting each DERS subscale as the moderator. The interaction of nightmare frequency and DERS scale was significant for each subscale *except* difficulties engaging in goal-directed behavior. As seen in Table 1, the pattern of interaction was consistent across DERS subscales, such that the interaction between each subscale assessing emotion regulation difficulties and nightmare frequency was significant at mean and high levels of the DERS subscales, but not at low levels. The only exception was the lack of emotional awareness subscale, as the interaction was significant at all three levels of the moderator.

4. Discussion

The present study sought to examine associations between nightmare frequency, emotion regulation difficulties, and previous suicide attempts using a psychiatric inpatient sample. Despite previous research linking nightmare frequency (M.R. Nadorff et al., 2013) and emotion regulation difficulties (Hazlett et al., 2016; Vasudeva and Singh, 2017) with suicidal behavior (e.g., ideations, attempts), the need remains for studies to investigate the interplay between such variables to better understand the complexities of suicidal behavior, as well as to improve interventions aimed to reduce risk.

The relationship between emotion regulation difficulties and

Table 1
Effects of the predictor at low, mean, and high levels of the moderator.

	Low		Mean		High	
	b (SE)	p	b (SE)	p	b (SE)	p
Non-acceptance	.02 (0.02)	.365	.05 (0.01)	<0.001	.08 (0.01)	<0.001
Impulse	.03 (0.02)	.118	.05 (0.01)	<0.001	.07 (0.01)	<0.001
Awareness	.03 (0.02)	.035	.06 (0.01)	<0.001	.08 (0.01)	<0.001
Strategies	.03 (0.02)	.139	.05 (0.01)	<0.001	.07 (0.01)	<0.001
Clarity	.03 (0.02)	.126	.05 (0.01)	<0.001	.07 (0.01)	<0.001

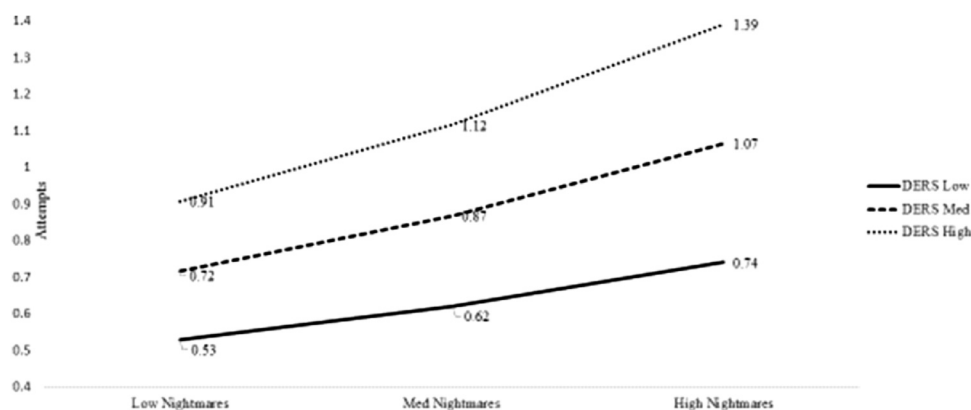


Fig. 1. Results of the moderation model.

previous suicide attempts was significant in the model. Furthermore, the interaction between emotion regulation difficulties and nightmare frequency was also significant in predicting previous suicide attempts. Despite some inconsistent recent findings related to the independent role of emotion regulation (Harris et al., 2018) and a lack of differences in emotion regulation between individuals with and without a history of suicide attempts, (Pisetsky et al., 2017) these results provide additional evidence for the important link between emotion regulation and suicidal behavior in a more high-risk sample of inpatients. Alongside previous research, (Chesney et al., 2014; Hazlett et al., 2016; Vasudeva and Singh, 2017) this finding highlights the clinical significance of emotion regulation difficulties as a risk factor for suicidal behavior.

Last, we found the association between nightmare frequency and suicide attempts was strongest at higher levels of emotion regulation difficulties. This suggests one's ability to regulate their emotions does, in fact, play a role in the relation between nightmares and suicidal behavior, which was consistent through several facets of emotion regulation. Consistent with previous reviews, (Littlewood et al., 2017; Winsper and Tang, 2014) the present study supported the notion that disturbed sleep (e.g., nightmares) and emotion regulation difficulties are likely influenced by one another in relation to suicide risk. This has important implications for practice, as both emotion regulation and nightmares can be targeted in treatment. This is of particular import for the lack of emotional awareness subscale - the only subscale for which results were also significant at low levels - suggesting even at low levels of difficulty recognizing emotions, when combined with nightmares, patients are more likely to attempt suicide. However, with the correct treatment tools, patients can learn emotion regulation strategies and reduce suicide risk.

Some limitations bear consideration. First, our sample consisted of psychiatric inpatients only, was recruited from one psychiatric facility, and was predominantly Caucasian. These factors limit generalizability, most notably among community-dwelling and minority populations. That said, given suicidal behavior is a notable concern for psychiatric inpatients, the sample is very appropriate for the present investigation. Additionally, single-item measures were used to assess suicide attempts and nightmare frequency. These limitations notwithstanding, the present study supplemented previous suicide-related studies that used samples from different populations such as undergraduate students (M.R. Nadorff et al., 2013) or from online platforms. (Ward-Ciesielski et al., 2018; Golding et al., 2015) Therefore, our findings augment growing evidence that sleep problems and emotion regulation difficulties are associated with previous suicide attempts. Future studies should attempt to replicate our findings using diagnostically and demographically diverse populations to improve generalizability. Likewise, future studies would benefit from using other, validated measures to replicate these findings. Additionally, future studies should seek to

extrapolate the current findings to independent but related sleep problems such as insomnia, and alternative suicide measurement like ideation.

Fig. 1.

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