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Original Research

Emotional Responses to Psychiatric Hospitalization among Inpatients Admitted With and Without Suicidality

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***Abstract*:** Although commonly used to stabilize individuals reporting suicide risk, psychiatric hospitalization can heighten suicidality following discharge, and unpleasant emotions elicited by hospitalization could contribute to increased risk for suicidal behaviors. However, limited research has examined the relation between suicidality and emotional responses to psychiatric hospitalization. This preliminary investigation examined differences in emotional responses to psychiatric hospitalization both during hospitalization and post-discharge among 21 inpatients admitted with and without suicidality. Participants reported levels of trait emotions and state emotional responses to hospitalization at intake (retrospectively), on-unit, and at 1-2 weeks post-discharge. Results indicated that hospitalization elicited more varied unpleasant emotions for inpatients with versus without suicidality. Additionally, inpatients with suicidality reported a post-discharge rebound in hospitalization-related anger and minimal alleviation of hospitalization-related guilt. Results suggest that more direct means of targeting these emotions during and shortly after hospitalization may be beneficial for patients admitted with suicidality.

***Keywords*:** Emotion, Suicide, Suicidality, Inpatient, Hospitalization

Suicide is the second leading cause of death for Americans aged 10-34 and remains a major health concern throughout the lifespan (Centers for Disease Control, 2014). Brief psychiatric hospitalization is commonly used for crisis management for acutely suicidal individuals and can promote short-term stabilization (Mellesdal, Mehlum, Wentzel-Larsen, Kroken, & Arild Jørgensen, 2010). Yet, despite potential benefits, evidence suggests that patients may be at elevated risk for suicide following inpatient psychiatric hospitalization. Specifically, in a population-based study, Goldacre, Seagroatt, and Hawton (1993) found that the suicide rate was approximately 7 and 3 times higher for male and female patients, respectively, in the first 28 days following discharge from inpatient psychiatric care, relative to the remaining 48 weeks of the first year post-discharge. Moreover, at least within some patient populations (i.e., patients with borderline personality disorder), there is evidence that the use of inpatient psychiatric hospitalization and crisis services is associated with increased risk for suicide attempts (Coyle, Shaver, & Linehan, 2018; see also Paris, 2004).

One understudied factor that may potentially contribute to heightened post-discharge suicide risk is the emotionally evocative and sometimes stigmatizing nature of psychiatric hospitalization itself (Link, 1987; Moses, 2011; Paris, 2004). Psychiatric hospitalization may elicit unpleasant emotions that are themselves associated with suicidality (including suicidal ideation, plans, or

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Suicidology Online
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attempts), including self-conscious emotions (e.g., guilt, shame; Hendin & Haas, 1991) and high-arousal unpleasant emotions (e.g., anger, anxiety; Hendin, Maltsberger, Haas, Szanto, & Rabinowicz, 2004). This may be especially true for patients admitted with suicidality, given demonstrated associations between suicidal thoughts and behaviors and both heightened emotional reactivity (Nock, Wedig, Holmberg, & Hooley, 2008) and the tendency to experience anger, guilt, and shame (Brezo, Paris, & Turecki, 2006; Kelley et al., 1996). Thus, in addition to having a recent history of suicidality, this subset of patients may be prone to hospitalization-related unpleasant emotions that further exacerbate suicide risk. Unfortunately, research has yet to explore psychiatric hospitalization-related emotions or their persistence post-discharge among patients with and without suicidality.

The goal of this study was to conduct an initial investigation comparing emotional responses to psychiatric hospitalization among two groups of patients: those admitted for suicidality (including suicidal ideation, plans, and/or attempts) and those admitted for reasons unrelated to suicide. We also examined changes in emotions over time during hospitalization and post-discharge, hypothesizing that psychiatric hospitalization would prompt more intense self-conscious and high-arousal unpleasant emotions for patients admitted with versus without suicidality. Further, we predicted that unpleasant hospitalization-related emotions would be more persistent (i.e., remain higher post-discharge) among patients admitted with suicidality. Given the dearth of research in this area, it was our hope that this study would provide preliminary data that could aid in the development of hypotheses for future research.

Method

Participants

Twenty-four patients (61.9% female; mean age = 38.9±12.3) were recruited from an inpatient psychiatric unit in the southern United States. Patients identified by unit nursing staff as not having experienced symptoms of psychosis in the last 24 hours were approached by study personnel. All 24 patients who were approached and participated were also screened for the presence of psychosis in the past 24-hours by study personnel; no patients screened positive for those symptoms. Two patients were excluded for random responding (i.e., selecting numbers at random on the measures without reading the items). A third patient withdrew during the initial assessment, resulting in a final sample of 21. Included participants were 66.7% White and 33.3% African-American. Although 61.9% completed at least some college/technical school, participants were predominantly unemployed (61.9%) and low-income (66.6% earning <$19,999/year).

Based on chart review, 13 participants were admitted for suicidal ideation/intent/attempts (Suicidality Group) and 8 participants were admitted for other reasons and denied suicidality at admission (Non-suicidality Group). Additional documented reasons for admission in both groups included depression, mania, substance misuse, and psychosis at the time of admission (see Table 1), though, as detailed above, individuals reporting active psychosis in the past 24 hours were excluded.

Table 1. Diagnoses within Suicidality vs. Non-Suicidality Groups.

Diagnosis	Suicidality Group N = 13; n (%)	Non-Suicidality Group N = 8; n (%)
Unipolar Depression	7 (53.8%)	3 (37.5%)
Any Anxiety Disorder	5 (38.5%)	0 (0.0%)
Bipolar Spectrum Disorder	4 (30.8%)	2 (25.0%)
Substance Use Disorder	4 (30.8%)	3 (37.5%)
Posttraumatic Stress Disorder	2 (15.4%)	0 (0.0%)
Schizophrenia	1 (7.7%)	2 (25.0%)
Borderline Personality Disorder	1 (7.7%)	0 (0.0%)

Note: Diagnoses obtained from information available in participants' hospital charts. Percentages do not add up to 100% due to comorbid diagnoses.

Measures

Trait emotions. The negative affect subscale of the Positive and Negative Affect Schedule (PANAS-NA; Watson, Tellegen, & Clark, 1988), supplemented with 6 additional items (indicated in italics below), was used to assess trait unpleasant emotions. In order to include trait emotions as covariates in analyses, composites were created (c.f. Schoenleber et al., 2016) assessing trait anger (hostile, irritable; α=.58), anxiety (nervous, scared, afraid; α=.66), guilt (*blameworthy*, guilty about my actions; α=.46), sadness (*sad*), and shame (*worthless, inadequate, flawed, dissatisfied with myself*, ashamed of myself; α=.63).

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State hospitalization-related emotions. The Topic-Related Emotion Examination (T-REX) was used to assess state hospitalization-related emotions of anger (αs=.47-.54), anxiety (α=.58-.82), guilt (α=.31-.62), sadness (α=.68-.74), and shame (α=.58-.86). The T-REX is a modified version of the state emotion questionnaire used to assess emotional responding during a test of pain pressure perception, which demonstrated acceptable internal consistency (Schoenleber, Berenbaum, & Motl, 2014). Each emotion was assessed via 3 items capturing the subjective, cognitive, and behavioral components of the emotion. All items were rated on a 0 (*not at all*) to 4 (*extremely*) scale, with the middle of the scale (a rating of 2) corresponding to a moderate level of the reported emotion. Different stems were used to assess emotions retrospectively at intake (i.e., "during or shortly after being hospitalized") and currently while residing on the unit and 1-2 weeks after being discharged (i.e., "currently, when thinking about being hospitalized"). The on-unit assessment was conducted a mean of 3.7 days (range = 1-10) following admission to the hospital. A mean of 1.5 days (range = 0-6) passed between the on-unit assessment and participants' discharge date.

Procedures

All procedures were approved by the medical center's Institutional Review Board. Participants were recruited during their inpatient stay. Following eligibility screening and after providing written informed consent, participants completed relevant questionnaires, including both the retrospective and current versions of the T-REX (assessing state emotions at intake and currently on the unit, respectively). Finally, participants were contacted by phone 1-2 weeks post-discharge to re-administer the current version of the T-REX to assess state hospitalization-related emotions following discharge.

Data Analytic Plan

One-way analyses of variance (ANOVAs) examined between-group differences in each emotion at each time-point, and paired-sample t-tests examined within-group emotion changes. Moreover, a set of 2 X 2 (Time X Group) mixed repeated-measures analyses of covariance (ANCOVAs) examined between-group differences in emotion trajectories, accounting for trait levels of the emotion. ANCOVAs were conducted for each pair of time points (i.e., intake to on-unit, on-unit to follow-up), separately, to preserve limited power. Given the small sample size, effect sizes for all analyses are reported in Table 2 (intake to on-unit) and Table 3 (on-unit to follow-up).

Results

All participants (13 patients in the Suicidality Group and 8 patients in the Non-suicidality group) completed the assessments of emotional responding to hospitalization at intake and while on the unit. Post-discharge, response rates for the follow-up assessment were 54% (n=7) and 63% (n=5) for the Suicidality and Non-suicidality Groups, respectively. As expected, psychiatric hospitalization elicited emotional distress for all patients, although more so for patients admitted with suicidality. Suicidality Group participants reported moderate levels (approximately 2.0 on the T-REX) of all emotions at intake, whereas those in the Non-suicidality Group reported moderate levels of guilt and anxiety only (Table 2).

Table 2. Within- and Between-Group Differences in Emotion over Time, Admission to On-unit

			Within-Group Changes		Between-Group Differences	
	Intake Mean (SD)	**On-Unit** Mean (SD)	$t_{\text{Intake-Unit}}$	*d*	F_{Intake}	F_{Unit}
Suicidality Group (N = 13)						
Anger	1.90 (0.97)	1.00 (0.92)	-3.35**	0.95	5.65*	5.01*
Anxiety	2.53 (1.00)	2.13 (1.04)	-1.99^{t}	0.39	0.47	2.61
Guilt	2.46 (0.94)	2.00 (1.28)	-1.92^{t}	0.41	0.16	2.60
Sadness	2.03 (1.28)	1.31 (1.20)	-2.33*	0.58	0.72	0.97
Shame	2.13 (1.24)	0.92 (1.33)	-3.70**	0.94	1.99	1.86
Non-Suicidality Group (N = 8)						
Anger	0.88 (0.94)	0.21 (0.47)	-1.87	0.90		
Anxiety	2.17 (1.39)	1.21 (1.58)	-2.21^{t}	0.64		
Guilt	2.25 (1.47)	1.17 (0.89)	-3.39*	0.89		
Sadness	1.50 (1.53)	0.79 (1.11)	-1.79	0.53		
Shame	1.29 (1.44)	0.25 (0.50)	-2.24^{t}	0.97		

Note: SD= Standard Deviation, Intake = Intake assessment, Unit = On-unit assessment. ^{t}p<.10, *p<.05, **p<.01

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Suicidality Group participants reported greater anger at each time-point than those in the Non-suicidality group. Although both groups reported large effect-sized reductions in anger from intake to the on-unit assessment (Non-Suicidality d=.90; Suicidality d=.95), these reductions were statistically significant for only the Suicidality Group (Table 2), likely due to the larger sample size of this group. Furthermore, the Time X Group interaction capturing between-group differences in changes in anger from the on-unit assessment to the post-discharge assessment, albeit not statistically significant, was associated with a large effect size (F[1, 9]=4.16, *p*=.072, η_p^2=.32).[1] Specifically, whereas participants in the Non-suicidality Group reported a small-sized decrease in anger (d=.11), those in the Suicidality Group reported a medium-sized increase in anger after discharge (d=.59).

The Time X Group interaction capturing between-group differences in changes in guilt from intake to the on-unit assessment was also associated with a large effect size (F[1, 18]=3.74, *p*=.069, η_p^2=.17), suggesting potential differences in the trajectories of guilt between groups. Whereas Non-suicidality Group participants reported a significant decrease in guilt between intake and on-unit assessments, associated with a large effect size (*t*[7]=-3.39; *p*=.012, d=.89), the reduction in guilt reported by Suicidality Group participants was not significant and was associated with only a small effect size (*t*[12]=-1.92; *p*=.079; d=.41). Neither group reported any significant changes in guilt from the on-unit assessment to the post-discharge assessment (Suicidality Group d=.04; Non-Suicidality Group d=.24). Thus, by post-discharge, participants in the Suicidality Group reported significantly greater guilt than those in the Non-Suicidality Group (see Table 3).

Table 3. Within- and Between-Group Differences in Emotion over Time, On-unit to Follow-up

			Within-Group Changes		Between-Group Differences	
	On-Unit Mean (SD)	**Follow-up** Mean (SD)	$t_{Unit\text{-}f/u}$	**d**	F_{Unit}	$F_{f/u}$
Suicidality Group (N = 7)						
Anger	0.81 (0.42)	1.52 (0.86)	2.12^t	0.59	2.74	7.90*
Anxiety	1.81 (0.79)	1.57 (1.03)	-0.62	0.54	0.01	0.03
Guilt	2.14 (1.43)	2.05 (0.78)	-0.16	0.04	1.94	5.67*
Sadness	0.86 (1.00)	1.19 (0.94)	0.96	0.11	0.01	0.01
Shame	0.57 (0.85)	1.24 (1.00)	1.15	0.27	0.47	1.62
Non-Suicidality Group (N = 5)						
Anger	0.33 (0.58)	0.27 (0.60)	-1.00	0.11		
Anxiety	1.73 (1.82)	1.47 (1.28)	-0.75	0.18		
Guilt	1.07 (1.14)	0.97 (0.77)	-0.16	0.24		
Sadness	0.93 (1.28)	1.27 (1.74)	0.54	0.33		
Shame	0.27 (0.60)	0.53 (0.87)	1.63	0.40		

Note: SD = Standard Deviation, Unit = On-unit assessment; f/u = post-discharge follow-up. ^{t}p<.10, *p<.05, **p<.01

Unlike anger and guilt, there were no notable between-group differences in anxiety, sadness, or shame at any time point, or in their changes over time. However, within-group analyses revealed significant decreases in sadness and shame (associated with medium- and large-sized effects, d=.58 and d=.94, respectively) between the intake and on-unit assessments for Suicidality Group participants only.

Discussion

The goal of this study was to provide an initial examination of emotional responses to psychiatric hospitalization among inpatients admitted with and without suicidality, with the goal of motivating future research in this area. Prior to interpreting our findings, it is important to recognize the preliminary nature of this study. Given the limited number of assessments utilized and the small sample in which analyses were conducted, results must be interpreted with caution. The interpretations that

[1] Repeating the analysis in the sample of participants who completed assessments at all timepoints yielded the same pattern of results for anger, as well as anxiety, sadness, and shame. The smaller sample size (n = 7 for Suicidality Group, n = 5 for Non-Suicidality Group) reduced the significance of the Time x Group interaction for guilt to *p* = .272.

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we provide below are merely speculative, and replication of our findings is needed in larger samples before any definitive conclusions can be drawn.

Results support the relevance of emotional reactions of anger and guilt, in particular, to psychiatric hospitalization among inpatients with suicidality. Specifically, among Suicidality Group participants, hospitalization-related anger increased after discharge, and hospitalization-related guilt persisted at moderate levels (Mean=2.0 on a 0 to 4 scale). The rebound in hospitalization-related anger may be related to the nature of involuntary commitments, which may be more common among those at risk for imminent suicide. For example, research indicates that involuntary commitments engender more lingering unpleasant emotions (Kallert, Glockner, & Schutzwohl, 2008). Given that individuals committed under such circumstances may experience a loss of personal control, anger may be prominent among the emotions experienced in relation to hospitalization. The persistence of hospitalization-related guilt, on the other hand, may reflect the perceived impact of the individual's psychiatric hospitalization on loved ones. Individuals with elevated suicidality may be prone to self-blame and heightened perceived burdensomeness (e.g., Van Orden et al., 2010; Yen & Siegler, 2003). These perceptions may prevent the abatement of guilt during or after hospitalization.

That said, the lack of between-group differences in anxiety, sadness, and shame highlights another important future direction for research on hospitalization-related emotions. Although we expected group differences in these emotions, it is possible that other emotions would better distinguish between individuals admitted with and without suicidality. Specifically, psychiatric hospitalization may negatively reinforce suicidality by reducing patient contact with external stressors (Coyle et al., 2018; Linehan, 1993). In this event, individuals admitted for suicidality may report differential trajectories for positive emotional experiences, such as hospitalization-related relief or gratitude.

Although the present findings add to the small body of research in this area, several limitations warrant consideration. First, as stated previously, the very small sample size limits both the generalizability and statistical conclusion validity of the results; thus, the presented findings must be interpreted with caution and replication is needed in larger samples. That said, our findings may provide a starting point for future research by lending insight into the emotional experiences of a vulnerable and difficult-to-recruit population. Second, the low response rate for the post-discharge follow-up assessments further decreased our statistical power and the generalizability of the findings, raising concerns about self-selection effects (e.g., suicidal patients who were more angry about their experience may have been more willing to complete a follow-up assessment in order to voice concerns). Third, our study relied on new or modified measures of emotional responses for which thorough data on their psychometric properties are not yet available. However, the T-REX differs from a previously used measure only in its context (i.e., assessing emotions related to a specific event, see Schoenleber, Berenbaum, & Motl, 2014). Moreover, we utilized a limited number of assessments, preventing the exploration of alternative explanations for our findings (e.g., psychiatric comorbidity, personality characteristics, number of past suicide attempts, number of past psychiatric hospitalizations or use of psychiatric crisis services). Thus, studies utilizing a more extensive battery of assessments are needed. Finally, multiple factors could have influenced participants' ability to recall the emotions that they experienced during intake, including medication use or acute distress. Future research may benefit from the use of ecological momentary assessment or daily diaries to better capture the likely complex and frequently changing emotional experiences associated with hospitalization.

The results of this study also highlight other important directions for future work on hospitalization-related emotional responses. First, it will be important to investigate potential mechanisms through which hospitalization contributes to ongoing unpleasant emotions, particularly other patient-related, hospital-related, and/or home-related factors that might maintain anger and guilt even weeks after discharge. Second, future studies would also benefit from examining whether certain patient populations characterized by increased suicidality and emotional reactivity (e.g., borderline personality disorder; Links et al., 2007) may be at particularly high risk for suicide following discharge from inpatient psychiatric care, suggesting the need for more specialized interventions. Relatedly, work is needed to determine the most effective interventions for hospitalization-related emotional distress during hospitalization and/or post-discharge. Finally, research will need to consider how lingering emotions influence patient willingness to engage in follow-up treatment. The persistence of anger and guilt may unfortunately discourage patients from seeking further treatment, including readmission to psychiatric hospitals in the short- or long-term if suicidality reemerges.

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