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Psychosocial Resiliency is Associated with Lower Emotional Distress among Dyads of Patients and their Informal Caregivers in the Neuroscience Intensive Care Unit

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Abstract

Purpose: To examine the associations of patients' and their informal caregivers' psychosocial resiliency factors with their own and their partners' emotion domains (distress, anxiety, depression, anger) following admission to the Neuroscience Intensive Care Unit (Neuro-ICU).

Materials and Methods: 83 dyads of patients (total N=87) and their informal caregivers (total N=99) participated in this observational, cross-sectional study by self-reporting demographics and measures of resiliency factors (mindfulness [CAMS-R], coping [MOCS-A], intimate bond [IBM], self-efficacy [patients: GSE; caregivers: CSES-R]) and emotion domains (ET4) within 2 weeks of Neuro-ICU admission.

Results: There were no differences between patients' and caregivers' levels of psychosocial resiliency, distress, or anxiety. Patients reported greater depression and anger relative to their caregivers. Overall, roughly half of patients (50.6%) and caregivers (42.4%) reported clinically significant emotional distress. Patients' and caregivers' own psychosocial resiliency factors were associated with their own, but not their partner's, emotion domains.

Conclusions: Findings of high distress among both patients and caregivers at admission emphasize the importance of attending to the mental health of both patients and caregivers in the Neuro-ICU. As modifiable psychosocial resiliency factors were associated with emotion domains for both patients and caregivers, interventions to enhance these factors may ameliorate emotional distress among these vulnerable populations.

Keywords

Neuroscience ICU; anxiety; depression; anger; resilience; informal caregiver

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INTRODUCTION

Admission to the Neuroscience Intensive Care Unit (Neuro-ICU) is traumatic for patients and their family members and friends who provide assistance critical to their recovery (i.e., informal caregivers). Estimates suggest between one-quarter to one-half of patients admitted to an ICU and their informal caregivers suffer from clinically significant psychiatric symptoms like anxiety and depression [1–4], with these symptoms tending to persist from hospital admission through months or years later [5, 6]. Following acute neurological injury (ANI), high emotional distress (e.g., greater distress, anxiety, depression, anger) is related to patients' poor medical adherence [7], slower functional recovery [5, 7, 8], and higher all-cause mortality [5, 9]. Moreover, patients with high emotional distress require more caregiving assistance [2], which may negatively impact caregivers' mental health [8, 10]. Caregivers' mental health is important because their own greater emotional distress increases both the risk for their own morbidity [11, 12] and mortality [13], as well as interferes with their ability to provide high-quality care to the patients [4, 14].

Resiliency, or the ability to adapt effectively under significant adversity [15], provides a framework for understanding why some patients and caregivers experience significant emotional distress and others do not following similar medical traumas. Although resiliency is a multidisciplinary construct with environmental, genetic, epigenetic, and neural mechanisms that evolve through an individual's lifetime [15], research has identified several modifiable psychosocial factors that promote successful adaptation to stress. Resiliency factors associated with psychological well-being after trauma for both patients and caregivers include: *mindfulness* – the ability to stay present and defer judgment in the face of adversity [16]; *coping* – the arsenal and application of one's behavioral, cognitive, and emotional strategies to manage stress [17]; *social support* – empathetic interpersonal interactions that meet one's emotional and functional needs [18]; and *self-efficacy* – one's perceived resourcefulness to adapt under adversity [19]. Caregivers' perceived ability to manage caregiving responsibilities for their loved one, or *caregiving self-efficacy*, has been associated with their positive mental and physical health outcomes [20].

Prior literature has primarily assessed patient and caregiver factors after hospitalization, with the majority of studies conducted several months after discharge. Moreover, few studies have examined patients and their caregivers together simultaneously (e.g., dyads), which is important as literature from other medical illnesses clearly shows that both psychological resilience and distress following illness are significantly interrelated within dyads [21, 22]. Hence, this study aims to fill this gap in the literature and provide a more comprehensive picture of patients' and their informal caregivers' psychosocial resiliency and emotion domains (distress, anxiety, depression, anger) immediately after admission to the Neuro-ICU.

The purpose of this cross-sectional study is three-fold. First, we characterize the psychosocial resiliency (i.e., mindfulness, coping, intimate bond, self-efficacy) and emotion domains (i.e., distress, anxiety, depression, anger) in dyads of patients recently (within 2 weeks) admitted to the Neuro-ICU and their primary informal caregivers. Second, we compare psychosocial resiliency and emotion domains between patients and their caregivers.

Last, we examine the associations of patients' and caregivers' psychosocial resiliency factors with their own and their partners' emotion domains. We hypothesize that, early in the Neuro-ICU admission, greater patient and caregiver psychosocial resiliency will be associated with lower overall emotional distress among dyads.

MATERIAL AND METHODS

Design and Setting

This cross-sectional, observational data comes from an ongoing prospective natural history study of dyads of patients admitted to the Neuro-ICU within the past 1–2 weeks and their informal caregivers, at a major medical hospital in Boston, Massachusetts from between June 2015 and February 2016. Detailed information on recruitment and procedures have been published elsewhere [23], and are briefly reviewed below. The study was approved by the hospital's institutional review board, and was therefore performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. All participants provided informed consent prior to any study related procedures.

Participants

To enroll, patients had to be 18 years or older, fluent in English, admitted to the Neuro-ICU within the past 2 weeks, and medically cleared for participation by the medical team. Patients who, based on the clinical judgment of the medical team, were not able to participate, were excluded (e.g., those anticipated to die within the ICU, on comfort measures only, with aphasia, or who lacked decision-making capacity as determined by the clinical team). Informal caregivers had to be 18 years or older, fluent in English, and identified as a patient's primary caregiver (i.e., family member or close friend providing the majority of unpaid emotional or instrumental care for the patient). Only the patient's single primary informal caregiver was eligible to enroll. Although there was a 2 week enrollment window, most participants (85%) were recruited and completed questionnaires within 2 days of admission.

Procedures

A research assistant identified dyads of patients and their caregivers, determined eligibility with the patient's medical team, and then approached eligible and medically cleared patients and their caregiver to discuss the study. Enrollment, inclusionary criteria review, and questionnaire completion occurred at the bedside in the single-patient Neuro-ICU rooms. Both the patient and caregiver were approached together in the patient's room. In some cases ($N = 6$), the patient was never able to complete the questionnaire, so only the caregiver provided data. We collected demographic and psychological data directly from patients and caregivers using the HIPAA-compliant REDCap dsata system [24] and clinical data from patients' electronic medical records. Participants were educated as part of the informed consent process that their data were de-identified and were encouraged to complete questionnaires individually, to minimize reporting bias.

Measures

Psychosocial Resiliency Factors—The Cognitive and Affective Mindfulness Scale Revised (CAMS-R) [25] was used to assess the degree to which participants experience their thoughts and feelings in the present moment. The 12 items are scored using a 4-point Likert scale with responses ranging from 1 (“Rarely/Not at all”) to 4 (“Almost always”). The total mindfulness score is the sum of all items and ranges from 12 to 48, with higher scores reflecting greater mindfulness. This instrument was developed using two samples of healthy subjects where higher mindfulness scores were significantly correlated with lower distress scores, suggesting good validity [25].

The Measure of Coping Status-A (MOCS-A) [26] was used to assess participants’ perceived coping ability using skills such as relaxation, awareness of stress, assertiveness, and disputing maladaptive thoughts. The 13 items are scored using a 5-point Likert scale with responses ranging from 0 (“I cannot do this at all”) to 4 (“I can do this extremely well”). The total coping skill score is the sum of all items and ranges from 0 to 52, with higher scores indicating higher perceived ability to cope effectively with stress. This instrument has been validated among other medically ill populations [27].

The Intimate Bond Measure (IBM) [28] was used to assess participants’ perceptions about the quality of their interactions with the caregiver or patient, respectively. The 24 items assessed the dimensions of perceived care and control by one’s partner on a 4-point Likert scale with responses ranging from 0 (“Not at all true”) to 3 (“Very true”). Perceived control by partner items are reverse-scored and then summed with all care items, with the total intimate bond score ranging from 0 to 36. Higher scores indicate higher perceived care and lower partner controlling. This instrument has been validated among other populations of persons with medical conditions and their partners [29].

Only patients completed the General Self-Efficacy Scale (GSE) [30] to assess their perception of own resourcefulness to manage challenging situations. The 10 items are scored on a 4-point Likert scale with responses ranging from 1 (“Not at all true”) to 4 (“Exactly true”). The total self-efficacy score is the sum of all items and ranges from 10 to 40, with higher scores indicating higher perceived resourcefulness. This instrument has been widely validated among healthy persons [31] and persons with medical illness [32].

Only caregivers completed the Revised Caregiver Self-Efficacy Scale (CSES-R) [33] to assess their perception of own ability to ask for functional support from family and friends, respond to patient’s needs, and manage own upsetting thoughts about the caregiving process. The 15 items are scored on a 100-point scale with responses ranging from 0 (“Cannot do at all”) to 100 (“Certain can do”). The total caregiving self-efficacy score is the average of all items and ranges 0 to 100, with higher scores indicating greater perceived ability to provide assistance effectively. This instrument has been validated among caregivers of frail elders [34].

Emotion Domains—Emotion thermometers (ET4) [35, 36] were used to assess participants’ symptoms of distress, anxiety, depression, and anger. The 4 domains are assessed using a visual analog scale with responses ranging from 0 (“None”) to 10

("Extreme"), with higher scores indicating higher intensity emotion. An overall emotional distress composite score is also calculated by summing the participant's responses to the 4 thermometers – a composite score of 15 or greater indicates clinically significant symptoms. These economical, easy-to-use instruments have shown strong relations with other validated, more comprehensive self-report mental health measures and structured psychiatric interviews among both patients with neurological conditions [37] and caregivers of patients with medical illness [38].

Statistical Analyses

Continuous variables were summarized with means and standard deviations; categorical variables were summarized with proportions. Repeated measures analyses of variance (ANOVA) using Bonferroni correction were used to compare within-subjects levels of emotion domains within patient and caregiver samples. Paired sample *t*-tests were used to test the mean difference between patients' and their caregivers' continuous variables; contingency tables and chi square tests were used to test differences in proportions of categorical variables between the patient and caregiver samples. Independent samples *t*-tests were used to test the mean differences between the patient and caregiver samples' scores on the emotion thermometers to those from a previous validation study with patients actively undergoing cancer treatment [39]. Cohen's *d*, a standardized measure of average difference between two samples [40], was computed as a measure of effect size for the mean differences between patients' and caregivers' data and between Neuro-ICU data and data from the patients undergoing cancer treatment. Bivariate correlations between patients' and their caregivers' continuous variables were tested using Pearson's *r*. Small, medium, and large effect sizes are distinguished by Cohen's *d* values of 0.20, 0.50, and 0.80 and Pearson's *r* values of ±.10, ±.30, and ±.50, respectively [40]. Missing data patterns were examined for psychosocial resiliency factors and emotion domains. All statistical tests were two-tailed, and an alpha level of .01 was used to determine statistical significance. Analyses were completed using SPSS version 20 (IBM Corp, 2011).

RESULTS

Neuro-ICU medical staff referred 203 total patients to study staff; 74 of these were unable to be approached for eligibility screening (e.g., discharged or passed away prior to screen). Of 132 eligible patients who were approached, 100 patients (75.7%) and 110 of their primary caregivers (83.3%) consented to participate. The majority (86%) of those choosing not to participate listed the reason as "not a good time/not ready." Of those consented, 87 patients (87.0%) and 99 caregivers (90.0%) completed questionnaires, forming 83 intact patient-caregiver dyads. No study variables differed between dyads with complete data versus those with only one partner participating, nor did effects differ when only complete dyads were analyzed. Therefore, data from all participants was included in the current study to enhance generalizability. Regarding missing data, 84% of patients and 80% of caregivers had complete data, and less than 5% of data were missing from the emotion domain outcomes of interest across the sample.

Patient and caregiver samples were comparable demographically. The samples consisted of primarily middle-aged, non-Hispanic white, highly educated, and married participants, and samples were approximately half female. Patients' presenting diagnoses at hospitalization were most frequently stroke/hemorrhage (36.8%) and tumor (29.9%). Most patients were intubated during the course of their hospitalization (77.0%) and were discharged to their home (70%). Two-thirds of primary caregivers were the patients' intimate partner (see Table 1).

Among patients, those who were discharged to a rehabilitation facility reported greater anger ($t(81)= 3.22$, $M_{\text{diff}}= 2.31$, $p= .002$, $d= 0.72$, medium-to-large effect) than patients who were discharged to home. Among caregivers, those with a high school education or less reported more caregiving self-efficacy ($t(92)= 2.50$, $M_{\text{diff}}= 10.07$, $p= .01$, $d= 0.52$, medium effect) than caregivers with some college education or higher, and female caregivers reported greater distress ($t(92)= 3.21$, $M_{\text{diff}}= 2.09$, $p= .002$, $d= 0.67$, medium-to-large effect) than male caregivers. There were no other significant associations between demographic and medical characteristics (including admission diagnosis type, i.e., cerebrovascular, structural, other) with psychosocial resiliency factors or emotion domains among patients and caregivers.

Psychosocial Resiliency Factors and Emotion Domains Among Patients and Caregivers

We summarize participants' continuous levels of psychosocial resiliency factors and emotion domains in Table 2. While patients and their caregivers reported comparable levels of resiliency factors, these levels were not related between patients and their caregivers. Regarding emotion domains, patients reported significantly higher distress and anxiety than depression and anger. Caregivers also reported significantly higher distress and anxiety than depression, and significantly less anger than depression. Patients and their caregivers reported comparable levels of distress and anxiety, but patients reported greater levels of depression and anger than their caregivers (ds= 0.27, 0.46, respectively, small-to-medium effects). Intensity of symptoms across emotion domains were not related between patients and their caregivers. Approximately one-half of patients and two-fifths of caregivers reported clinically significant symptoms across the four emotion domains; these prevalence rates did not differ significantly across the patient and caregiver samples.

Compared to patients undergoing treatment for cancer [40], the current sample of ANI patients reported greater distress ($t(215)= 4.23$, $M_{\text{diff}}= 1.81$, $p< .001$, $d= 0.58$) and depression ($t(215)= 2.74$, $M_{\text{diff}}= 1.06$, $p= .01$, $d= 0.37$), while reporting comparable levels of anxiety and anger ($|t\text{s}|(215)< 1.01$, $p\text{s}> .06$). Comparing the same sample of cancer patients to the current sample of caregivers, our caregivers reported greater distress ($t(217)= 3.83$, $M_{\text{diff}}= 1.57$, $p< .001$, $d= 0.52$) and comparable levels of anxiety, depression, and anger ($|t\text{s}|(217)< 1.21$, $p\text{s}> .23$).

Correlations Between own Psychosocial Resiliency Factors and Emotion Domains

We summarize bivariate associations between own psychosocial resiliency factors and emotion domains in Table 3a. Among patients, greater mindfulness was associated with lower intensity of symptoms for all emotion domains ($r\text{s}< -.35$; medium-to-large effects);

greater coping was associated with lower depression and anger (rs= −.30, −.31, respectively; medium effects); greater bond with the caregiver was associated with lower anger (r= −.36; medium effect); and greater general self-efficacy was associated with lower distress and depression (rs= −.30, −.30; medium effects). Patients reporting clinically significant symptoms across emotion domains reported significantly lower mindfulness (t= 4.05, d= 0.94; large effect) and coping (t= 2.62, d= 0.62; medium effect) relative to patients not meeting the clinical cut-off.

Among caregivers, greater mindfulness was associated with lower depression and anger (rs= −.28, −.28; small-to-medium effects); greater coping was associated with lower anxiety, depression, and anger (rs< −.36; medium effects); and greater caregiving self-efficacy was associated with lower distress, anxiety, and anger (rs< −.27; medium effects). Caregivers' perceived bond with the care recipient was not associated with caregivers' emotion domains. Caregivers reporting clinically significant symptoms across emotion domains reported significantly lower coping and caregiving self-efficacy (ts= 3.32, 3.47; ds= 0.72, 0.74; medium-to-large effects) relative to caregivers not meeting the clinical cut-off.

Correlations Between Own Psychosocial Resiliency Factors and Partner Emotion Domains

We also summarize bivariate associations between own psychosocial resiliency factors with one's dyad partner's emotion domains in Table 3b. Patients' psychosocial resiliency factors were unrelated to their caregivers' emotion domains. Similarly, caregivers' psychosocial resiliency factors were unrelated to their patients' emotion domains.

DISCUSSION

In this descriptive, cross-sectional data analysis of patients recently admitted to the Neuro-ICU with ANI and their informal caregivers, approximately 1 of every 2 patients and caregivers reported clinically significant overall emotional distress. Levels of psychosocial resiliency factors, distress, and anxiety were comparable between patients and their informal caregivers, while patients reported greater depression and anger compared to their caregivers. Notably, though, both patients and caregivers reported higher levels of distress and anxiety relative to depression and anger. Greater psychosocial resiliency factors of mindfulness, coping, and self-efficacy were significantly associated with one's own lower symptoms across emotion domains. However, there was no cross-over of one's own psychosocial resiliency factors relating to one's partner's emotions, either from patients to caregivers or vice versa from caregivers to patients this early in the recovery process. Findings reinforce the importance of assessing and addressing emotional distress among both patients and caregivers in the Neuro-ICU and hold implication for psychosocial intervention development among these vulnerable populations.

Patients and caregivers reported clinically elevated symptoms across emotion domains to an equal degree, with roughly half of both samples meeting clinical cutoff criteria on the emotion thermometers. Relative to a sample of patients undergoing treatment for cancer [40], the ANI patients we sampled from the Neuro-ICU reported comparable levels of anxiety and anger and moderately greater levels of distress and depression. Our caregiver sample, too, reported comparable levels of anxiety, depression, and anger to the cancer patient sample and moderately greater levels of distress. Attention to patients' mental health during hospitalization has become a standard of clinical care for many illnesses; however, the mental health of patients' family members and friends is rarely acknowledged, despite expecting these persons to contribute heavily to patients' recovery. Findings reinforce the importance of assessing and addressing the health and well-being of both patients with ANI and their informal caregivers early in the Neuro-ICU hospitalization.

Perceived ability to cope with one's own stress using skills such as relaxation, assertiveness, and seeking social support was associated with lower overall emotional distress for both patients and caregivers. These findings are consisted with prior reports in other medical populations: brief psychosocial interventions like Cognitive Behavioral Therapy or mindfulness-based programs that teach resiliency and stress management skills have been found to improve psychological distress and quality of life in cancer and HIV [27, 41]. Coping ability has also not only been associated with subjective psychological distress, but also with physiological markers of stress that may lead to disease progression [42]. Findings suggest the importance of developing brief, skills-based stress management interventions for patients with ANI and their caregivers, and testing the extent to which they effectively attenuate the subjective and physiological burden of the Neuro-ICU experience.

Patients and caregivers also showed unique associations between resiliency factors and their emotions. Among patients, ability to stay present and defer judgment in the face of adversity was strongly associated with their lower overall emotional distress. Brief cognitive-behavioral interventions have also been shown to improve mindfulness among patients with serious medical illness, which not only reduced patients' emotional distress, but also their physiological markers of stress [43, 44]. For caregivers, perceived ability to manage stresses of care responsibilities was more closely associated with their lower overall emotional distress. Psychosocial interventions among caregivers for persons cognitive impairment [45, 46] have been effective in increasing caregivers' caregiving self-efficacy, which in turn improved caregivers' stress coping behaviors [45] and psychiatric symptoms [46]. Further study is warranted to ascertain the extent to which tailoring skills-based resiliency-oriented interventions for patients and caregivers may enhance their longer-term mental health and clinical outcomes.

Limitations and Future Directions

Data were collected from self-report measures, which can affect findings both in terms of positive response bias or negative recall bias. Reporting bias was limited through de-identifying data and having participants completing forms privately. Generalizability of results is limited to the broader Neuro-ICU population due to exclusion criteria of patients' disease severity and cognitive impairment. However, findings from this paper represent an important building block for future planned psychosocial intervention study: inclusion and exclusion criteria for the current study were selected to identify a population capable and appropriate for psychosocial skills training intervention. Data were also cross-sectional, and therefore it is important to note that causality and directionality cannot be ascertained from the current analyses. Future studies should track associations between patient and caregiver resiliency and emotions prospectively following hospitalization in the Neuro-ICU, given that research among patients and caregivers affected by other medical diagnoses suggests that dyads' resiliency and distress align over the course of the illness trajectory [21, 22]. Understanding how psychosocial resiliency factors at Neuro-ICU hospitalization relate to patients' and caregivers' concurrent and long-term emotional distress will be critical to building targeted interventions effective in preventing poor clinical outcomes among these vulnerable populations.

Conclusions

The current study reports the first data of psychosocial resiliency factors and their associations with emotion domains among patients recently hospitalized in the Neuro-ICU and their informal caregivers. Patients and caregivers reported clinically elevated symptoms across emotion domains in equal frequency, with roughly 1 in 2 patients and caregivers reporting significant symptoms. Distress and anxiety were most prominently reported by both patients and caregivers relative to depression and anger. Greater perceived coping ability was related to lower overall emotional distress among both patients and caregivers; patients' lower overall emotional distress was also related to their stronger mindfulness skills, whereas caregivers' lower overall emotional distress was also related to their greater perceived ability to cope with caregiving responsibilities. Given the associations between ANI patients' and their caregivers' psychosocial resiliency factors with their symptoms across emotion domains, future research warrants examining the extent to which interventions enhancing psychosocial resiliency may attenuate the burden of the Neuro-ICU experience among these vulnerable populations.

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Table 1.

Demographic and Medical Characteristics of Neuro-ICU Patients (N= 87) and their Informal Caregivers (N= 99)

	Patients	**Caregivers**		
	***N* (%)**	***N* (%)**	***t* or χ^2**	***df***
Age (M [SD])	51.95 (16.46)	52.53 (14.06)	−0.91	81
Gender (male)	45 (51.7%)	38 (38.4%)	3.41	1
Race/Ethnicity (non-Hispanic white)	71 (81.6%)	85 (85.9%)	1.21	1
Education (some college or more)	65 (74.7%)	79 (79.8%)	0.62	1
Marital status (married/cohabitating)	61 (70.1%)	80 (80.8%)	3.21	1
Diagnosis				
Cerebrovascular				
Stroke/Hemorrhage	32 (36.8%)	–	–	–
Brain aneurysm	3 (3.4%)	–	–	–
Structural				
Tumor	26 (29.9%)	–	–	–
Lesion/Brain mass	9 (10.3%)	–	–	–
Other				
Traumatic brain injury	5 (5.7%)	–	–	–
Seizures	3 (3.4%)	–	–	–
Other/More than 1 diagnosis	9 (10.3%)	–	–	–
Discharge status				
Discharge to home	61 (70.1%)			
Discharge to rehabilitation facility	26 (29.9%)			
Intubated (yes)	67 (77.0%)	–	–	–
Relationship to patient				
Spouse/partner	–	66 (66.7%)	–	–
Parent	–	15 (15.2%)	–	–
Child	–	14 (14.1%)	–	–
Sibling	–	4 (4.0%)	–	–

Note. All p-values for t- and χ^2 tests > .05

Table 2.

Psychosocial Resiliency and Emotion Domains of Neuro-ICU Patients and their Informal Caregivers

	Patients			Caregivers			Comparison		
	M (SD)	N_{missing}	Range	*M* (SD)	N_{missing}	Range	*t*	*df*	*r*
Resiliency Factors									
Mindfulness	33.90 (5.47)	10	19 – 45	34.01 (5.12)	12	20 – 43	0.19	70	.02
Coping	32.53 (9.20)	12	11 – 52	32.86 (8.92)	12	14 – 51	−0.14	69	.14
Intimate Bond	40.49 (9.82)	13	0 – 64	38.64 (7.23)	15	21 – 59	−1.27	68	.21
General Self-Efficacy	32.88 (5.27)	3	17 – 40	–	–	–	–	–	–
Caregiving Self-Efficacy	–	–	–	83.68 (15.45)	5	37.33 – 100	–	–	–
Emotion Domains									
Distress	4.70 (3.28)^a	4	0 – 10	4.46 (3.22)^a	5	0 – 10	1.42	77	.12
Anxiety	5.07 (3.39)^a	4	0 – 10	5.19 (3.09)^a	5	0 – 10	0.25	77	.05
Depression	3.40 (3.02)^b	4	0 – 10	2.62 (2.85)^b	4	0 – 10	2.83*	78	.15
Anger	2.81 (3.09)^b	4	0 – 10	1.60 (2.14)^c	4	0 – 8	3.59**	78	.08
% Meeting Clinical Cut-Off	*N*	%	–	*N*	%	–	χ^2	*df*	–
ET4 Total ≥ 15	44	50.6		42	42.4		1.37	1	

* $p < .01$

** $p < .001$

Note. Resiliency factors include: Mindfulness = CAMS-R, Coping = MOCS-A, Intimate Bond = IBM, General Self-Efficacy = GSES, Caregiving Self-Efficacy = CSES-R; Emotion Domains include: Distress, Anxiety, Depression, and Anger = Emotion Thermometers (ET4). Emotion domain means that do not share the same superscripts differ from each other at $p < .01$ within patient and caregiver sample.

Table 3a.

Bivariate Associations of Neuro-ICU Patient and Informal Caregiver Psychosocial Resiliency Factors with own Emotion Domains

		Own Emotion Domains (*r*)				Meet Clinical Cut-Off (*t*)
		Distress	**Anxiety**	**Depression**	**Anger**	
Patients’ Resiliency Factors	Mindfulness	$-.35^{*}$	$-.45^{**}$	$-.49^{**}$	$-.45^{**}$	4.05^{**}
	Coping	−.25	−.27	$-.30^{*}$	$-.31^{*}$	2.62^{*}
	Intimate Bond	−.13	−.10	−.22	$-.36^{*}$	1.67
	General Self-Efficacy	$-.30^{*}$	−.26	$-.30^{*}$	−.11	2.40
Caregivers’ Resiliency Factors	Mindfulness	−.22	−.23	$-.28^{*}$	$-.28^{*}$	2.31
	Coping	−.16	$-.39^{**}$	$-.36^{**}$	$-.36^{**}$	3.32^{*}
	Intimate Bond	.02	.08	−.07	−.15	0.93
	Caregiving Self-Efficacy	$-.27^{*}$	$-.27^{*}$	−.25	$-.37^{**}$	3.47^{**}

$^{*}p < .01$

$^{**}p < .001$

Note. Resiliency factors include: Mindfulness = CAMS-R, Coping = MOCS-A, Intimate Bond = IBM, General Self-Efficacy = GSES, Caregiving Self-Efficacy = CSES-R; Emotion Domains include: Distress, Anxiety, Depression, and Anger = Emotion Thermometers (ET4), Clinical Cut-Off = ET4 total ≥ 15. Positive *t*-values indicate resiliency factor lower for those with clinically elevated ET4 versus those not meeting cut-off.

Table 3b.

Bivariate Associations of Neuro-ICU Patient and Informal Caregiver Psychosocial Resiliency Factors with Partner Emotion Domains

		Partner Emotion Domains (*r*)				Meet Clinical Cut-Off (*t*)
		Distress	**Anxiety**	**Depression**	**Anger**	
Patients’ Resiliency Factors	Mindfulness	0	.07	−.22	−.23	1.13
	Coping	.14	.07	−.11	−.14	0.43
	Intimate Bond	.13	0	.11	−.07	−0.97
	General Self-Efficacy	.16	.10	−.05	−.10	0.26
Caregivers’ Resiliency Factors	Mindfulness	.07	.08	.11	.21	−0.35
	Coping	.02	.03	−.02	.12	0.5
	Intimate Bond	−.13	−.10	−.12	−.20	1.46
	Caregiving Self-Efficacy	−.10	−.10	−.16	−.12	1.37

Note. Resiliency factors include: Mindfulness = CAMS-R, Coping = MOCS-A, Intimate Bond = IBM, General Self-Efficacy = GSES, Caregiving Self-Efficacy = CSES-R; Emotion Domains include: Distress, Anxiety, Depression, and Anger = Emotion Thermometers (ET4), Clinical Cut-Off = ET4 total ≥ 15. Positive *t*-values indicate resiliency factor lower for those with clinically elevated ET4 versus those not meeting cut-off.