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Psychological Attachment Orientation and Long-Term Posttraumatic Stress Symptoms Among Family Members of ICU Patients

OBJECTIVES: To determine the degree to which an ICU patient's family member having an "anxious" psychologic attachment orientation is a risk factor for developing long-term posttraumatic stress disorder (PTSD) symptoms following patient ICU discharge or death.

DESIGN: Prospective cohort study.

SETTING: Single academic neuroscience ICU from November 2017 to September 2020.

PARTICIPANTS: Consecutively enrolled sample of family members, one for each ICU patient with a minimum length of stay of 24 hours.

INTERVENTIONS: None.

MEASUREMENTS AND MAIN RESULTS: Near time of ICU discharge or patient death, we determined each participant's psychologic attachment orientation as anxious versus nonanxious via a brief standard survey tool, the Relationship Questionnaire, and measured other participant and patient characteristics as potential covariates. Six months after discharge or death, each participant completed the Impact of Events Scale-Revised (IES-R) to measure PTSD symptoms, with a score of greater than 24 indicative of clinically significant symptoms. Among 162 total participants, 10 of 27 participants (37.0%) with an anxious attachment orientation reported 6-month PTSD symptoms, compared with 24 of 135 nonanxious participants (17.8%) (relative risk, 2.08; 95% CI, 1.13–3.84; $p = 0.02$; risk difference 19.2%). In a subsequent univariate analysis of participant and patient covariates, anxious attachment orientation, participant Hispanic ethnicity, prior experience as a care partner of a patient with a disability, and participation in 3 or more formal ICU family meetings were all associated with 6-month PTSD symptoms. In a multiple logistic regression, anxious attachment remained an independent predictor of 6-month PTSD symptoms (odds ratio [OR], 3.64; 95% CI, 1.35–9.77; $p = 0.01$), as did Hispanic ethnicity (OR, 4.72; 95% CI, 1.34–16.6; $p = 0.01$) and participation in three or more ICU family meetings (odds ratio, 2.97; 95% CI, 1.14–7.68; $p = 0.02$).

CONCLUSIONS: An anxious psychologic attachment orientation is associated with double the risk of long-term PTSD symptoms among family members of ICU patients. Future interventions designed to decrease risk of adverse psychologic outcomes among ICU families could be initially tested for efficacy amongst those who fall into this high-risk category.

KEY WORDS: anxiety; caregivers; critical care outcomes; intensive care units; psychosocial care

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DOI: 10.1097/CCE.0000000000000753

Family members of patients admitted to either general or subspecialty ICUs often experience adverse psychologic outcomes in the months following their inpatient admissions (postintensive care syndrome family,

or PICS-F) (1–7). In particular, a sizable percentage of post-ICU family members have reported persistent symptoms of posttraumatic stress disorder (PTSD) (8–14). Multiple interventions have been tested to reduce the proportion of post-ICU family members reporting PTSD symptoms, but few have been successful (15–17). Understanding the factors contributing to and predictors of PTSD symptoms among ICU families after discharge is a critical step in improving the efficacy of future interventions designed to reduce the number of families reporting symptoms (18).

Amongst prior studies of potential factors contributing to PTSD as a manifestation of PICS-F (13, 14, 18), one that has not yet been explored is a family member's psychologic attachment orientation. Attachment theory describes how individuals develop different views of the self and others in the context of close relationships over their lifespan, with particular influence from their primary caregivers in infancy and early childhood and their romantic relationships in adulthood (19, 20). Bartholomew and Horowitz (21) developed a model of adult attachment orientation that in part focuses on attachment "anxiety," the degree to which an individual is afraid of rejection or abandonment and has a deep need to feel close to others. Previous studies have found that individuals with an anxious attachment orientation are hyperreactive to threats, tend to report greater levels of perceived stress, and are also much more likely to ruminate over events (22). Associations between attachment anxiety and PTSD have been found in different populations—ranging from adult survivors of interpersonal trauma (23, 24), high-exposure survivors of terrorism (25), and prisoners of war (26, 27)—but not yet among families of ICU patients.

Understanding high risk factors for the development of PTSD symptoms can help guide future interventions aimed at reducing rates of PICS-F. For instance, being able to effectively screen for families who are at higher risk for post-ICU PTSD could help direct initial future efficacy studies toward enrolling participants who are most likely to benefit (15). We hypothesized that anxious attachment orientation—identified by a brief, validated screening tool—is a significant risk factor for development of clinically significant PTSD symptoms among ICU families 6 months after patient discharge or death. As a secondary analysis, we also explored other relevant independent family and patient predictors of PTSD symptoms among ICU families.

MATERIALS AND METHODS

Study Design and Setting

We conducted a single-center, observational prospective cohort study spanning November 2017 to September 2020 in an academic neuroscience ICU. The neuroscience ICU has 19 beds, is collaboratively managed by neuro-intensivists and neurosurgeons, and takes transfers for the state of Connecticut. Anxious versus nonanxious attachment orientation assessed among family members of patients near time of ICU discharge or death was the risk factor of interest, and report of clinically significant PTSD symptoms 6 months post discharge or death among family members was the study outcome. This study "The Long-Term Impact of Neuro ICU Hospitalizations on Family Members" (no. 2000021774) was approved by the Yale Human Investigation Committee (HIC) on November 16, 2017. Procedures were followed in accordance with the ethical standards of the institutional responsible committee on human experimentation and with the Helsinki Declaration of 1975. Because the study was minimal risk, participants did not have to sign formal written consent and could indicate willingness to participate by agreeing to complete study questionnaires after we provided them written informational material.

Participants

Eligible participants included a single family member for each patient admitted to the ICU for greater than 24 hours, regardless of patient admission diagnosis. All family participants had to be at least 18 years old and able to speak and read English. Participants were able to self-define whether they were family members of the patient. Family members of surviving patients were initially contacted in person within 7 days after patient transfer out of the ICU to another hospital unit. Surrogates of nonsurvivors were initially contacted by mail, with a follow-up phone call, approximately 4 weeks after the patient death or discharge to a hospice facility. The purpose of this recruitment window difference was to respect time needed to cope with a loved one's death (28, 29).

We recruited participants for this study in two separate phases. For Phase 1, from November 2017 to August 2018, we recruited participants from a consecutive sample of family members who had just recently

participated in an in-hospital, cross-sectional study of the relationship between attachment orientation and goals-of-care decision making (30). This previous study had the exact same inclusion criteria and covariates as this study, and the timing of enrolling participants relative to patient ICU discharge or death was the same as this study. One-hundred ten of the family members recruited for the previous study had indicated that they would be open to being contacted for follow-up studies. At 6 months post patient discharge or death (1), we reached out to these family members again, by mail and follow-up phone call, with the information about this study and a request to participate.

For Phase 2 of recruitment, from August 2019 to March 2020, we additionally recruited a prospective, consecutive sample of participants near the time of ICU discharge or death and conducted subsequent follow-up as outlined above. No new care protocols specific to the Neuro ICU were implemented between the two recruitment periods, and there was no attending turnover between the two study periods.

Variables and Data Collection

To define participants' attachment orientation as anxious versus nonanxious, we administered the simple and validated Relationship Questionnaire (RQ), which has been used before in numerous psychologic and healthcare studies (21, 31–37). The RQ consists of four short paragraphs, each briefly describing one of four attachment orientations: “secure,” “dismissing-avoidant,” “fearful-avoidant,” and “preoccupied” (21). The measure simply asks the respondent to 1) rate his or her personal feeling of concordance with each description on a seven-point Likert Scale and 2) select the one paragraph that best describes how he or she generally is in close relationships. The orientation rated with the highest Likert score serves as the participant's categorical definition of attachment orientation. If two or more patterns are rated identically by a participant, the orientation chosen by the participant as best describing how he/she generally is in close relationships is used (34–37). Individuals who are characterized to be secure or dismissing-avoidant are considered non-anxious, whereas individuals who are characterized as fearful-avoidant or preoccupied are considered anxious (21) (**Fig. 1**).

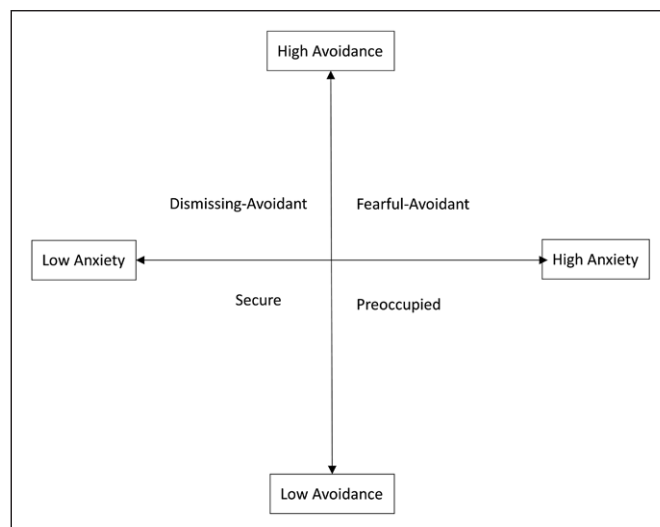


Figure 1. Types of psychological attachment orientation. For this study, individuals who were secure or dismissing-avoidant were considered nonanxious, whereas individuals who were fearful-avoidant or preoccupied were considered anxious.

We also collected the following family covariates via additional direct survey questions: age, sex, race, ethnicity, English as a first language, state of residency, level of education, relationship with patient, religion, frequency of attending religious meetings, past experience as a caregiver of patients with cognitive/physical disabilities, healthcare proxy status, estimated size of family usually visiting the patient, number of formal family meetings participated in during their ICU experience, average hours per day at bedside, and involvement of the patient's primary care doctor in decision-making conversations. Of note, family members were able to self-identify their race. Family members of ICU survivors enrolled in the hospital were given a choice of completing the RQ and demographic questions on a laptop computer or on paper, whereas family members of nonsurvivors submitted their responses on paper by mail. Via medical record review, we collected data on the patients for whom family members were participants: age, sex, race, ethnicity, diagnosis, primary attending (i.e., intensivist vs surgeon), elective versus nonelective admission, ICU length of stay, code status changes, functional outcome as defined by the modified Rankin Scale at time of ICU discharge, and discharge disposition. For patients who were related to eligible family participants not successfully enrolled in the study, but who had not opted out of research participation in the medical record, we obtained data regarding age, sex, race, ethnicity, and comfort measures

only (yes/no) from our institution's data analytics team, for the purposes of assessing nonenrollment bias.

Outcome

To assess respondents' severity of PTSD symptoms, we administered the Impact of Events Scale-Revised (IES-R), a validated and standardized questionnaire (38–40), 6 months after ICU discharge or patient death. All participants were contacted by mail and phone by a research assistant, completed a paper version of the IES-R, and mailed it back to the study team. A validated cut-off score of greater than 24 was indicative of clinically significant PTSD symptoms, consistent with prior literature (41, 42).

Statistical Analysis

Our primary analyses were the calculations of 1) the relative risk of developing clinically significant PTSD symptoms at 6 months for anxious versus nonanxious participants and 2) the risk difference between these groups. A z test was used to determine statistical significance for the relative risk calculation.

Because of the potential challenges of adjusting our relative risk calculation for multiple possible confounding variables, we also directly compared covariates of our PTSD versus no PTSD symptom groups in secondary analyses. First, we performed a univariate exploration of the family and patient covariates for the PTSD versus no PTSD symptom groups, via Pearson's two-tailed chi-square test for categorical variables and the t test for continuous variables. We then performed a multiple logistic regression, which contained those covariates with univariate p values of less than 0.1.

To assess nonenrollment bias, we compared 1) available covariates among patients with family members enrolled against 2) covariates for patients whose families were eligible but not enrolled. We also compared 1) covariate differences between family members who completed the study and 2) those who were initially enrolled but lost to follow-up (during Phase 2 of recruitment). Additionally, we performed a univariate comparison of family covariates among anxious versus nonanxious participants, to assess collinearity. Missing data were excluded from the analyses. All analyses were conducted in R (R Core Team, 2014; R Foundation for Statistical Computing) (43).

Sample Size

We posited that a 15% difference in the proportion of anxious participants in the PTSD versus non-PTSD groups would be a clinically significant difference, based on previously published work (44, 45). With this assumption, our a priori sample size calculation determined a minimum sample size of 120 participants to discover a 15% difference between groups with α equals to 0.05 and power equals to 0.80.

RESULTS

Participant Recruitment and Study Retention

Figure 2 outlines details of study recruitment. During Phase 1, we enrolled 42 of 110 eligible family members (38.2%) at 6 months following their participation in our previous study on attachment orientation (30). During Phase 2, we enrolled 171 of 302 additional eligible family members (56.6%) near time of ICU discharge or death, with 120 of 171 (70.2%) retained at 6-month follow-up.

A comparison of available demographic data for patients whose family members were enrolled versus those whose family members were eligible but not enrolled is listed in **Table SDC1** (Supplemental Digital Content 1, <http://links.lww.com/CCX/B51>). Patients whose family members were eligible but not enrolled were more likely to be a racial minority (31.7% vs 21.4%; $p = 0.03$) and be made comfort measures only (18.6% vs 8.8%; $p = 0.01$).

An additional comparison of demographic data between families who completed the study versus families enrolled but lost to follow-up during Phase 2 is shown in **Table SDC2** (Supplemental Digital Content 2, <http://links.lww.com/CCX/B51>). The 49 family members lost to follow-up were less likely to have previous caretaker experience, compared with family members who completed the study (18.4% vs 38.9%; $p = 0.01$).

Family and Patient Characteristics

Table 1 summarizes characteristics of all family participants, including their personal demographics and characteristics determined during the ICU stay of interest. Of the 162 participants, 27 (16.7%) identified as having an anxious attachment orientation, and 135 (83.3%) identified as nonanxious. No recorded personal characteristics were significantly different

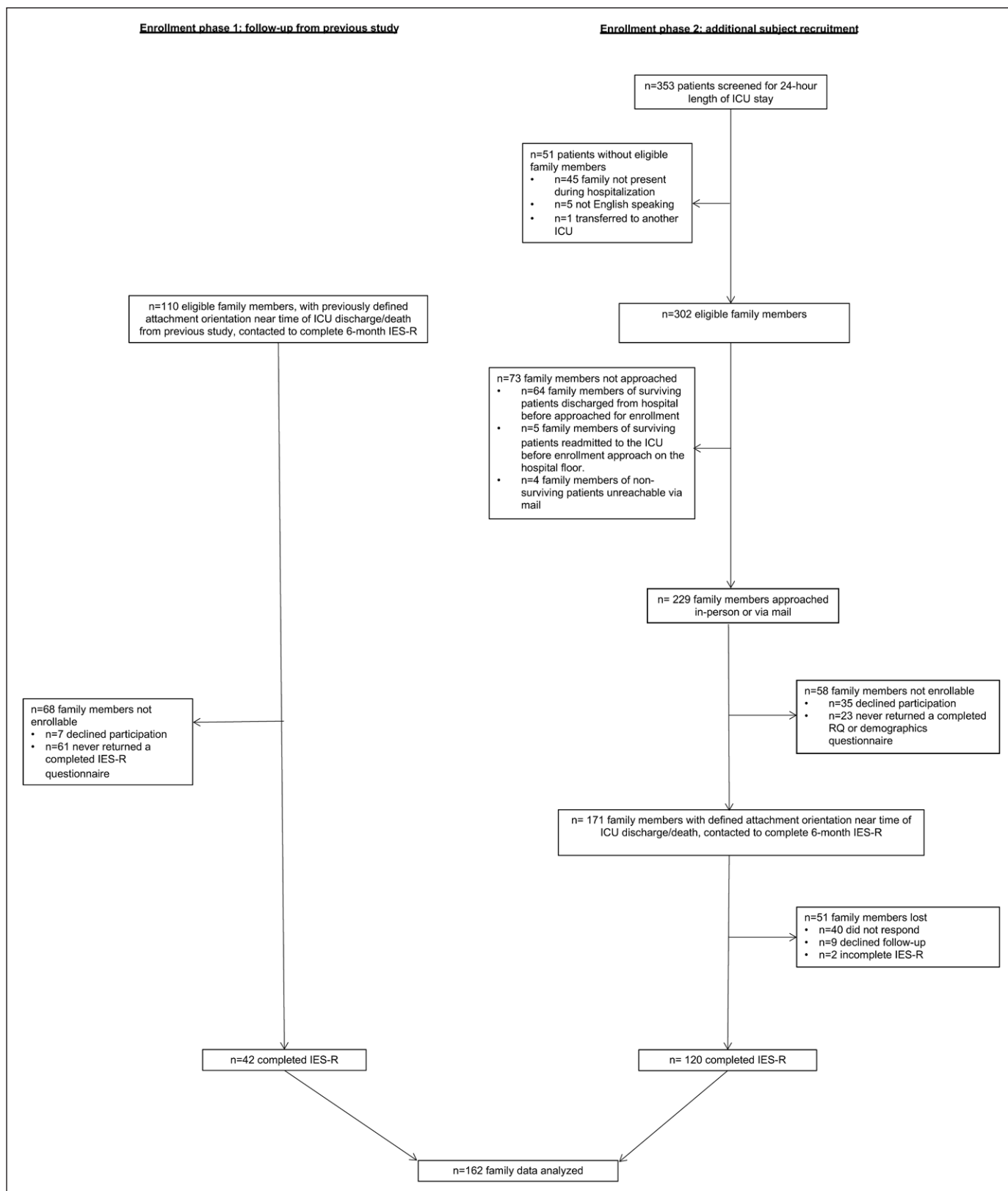


Figure 2. Study enrollment. Enrollment phase 1 was follow-up from a previous study with the exact same inclusion criteria and covariates as this study, as well as the same timing of initial participant enrollment relative to patient ICU discharge or death (30). IES-R = Impact of Events Scale–Revised, RQ = Relationship Questionnaire.

TABLE 1.
Family Participant Characteristics

Variables	Total Cohort (N = 162)
Personal characteristics, <i>n</i> (%)	
Age, mean (SD)	55.8 (14.8)
Male sex	67/159 (42.1)
Racial minority	26/154 (16.9)
Hispanic ethnicity	13/161 (8.1)
Native English speaker	154/162 (95.1)
Healthcare proxy	120/161 (74.5)
Relationship to patient	
Spouse	64/162 (39.5)
Son/daughter/child	46/162 (28.4)
Parent	25/162 (15.4)
Sibling/other	27/162 (16.7)
Living in state	140/162 (86.4)
Education level	
High school or less	29/161 (18.0)
College degree or some college	85/161 (52.8)
Professional degree/doctorate	47/161 (29.2)
Religion	
Christian	107/162 (66.0)
Other religion	16/162 (9.9)
No religion	39/162 (24.1)
Frequency of attending religious meetings	
Never	44/162 (27.2)
Once a year or less	28/162 (17.3)
Once a week/mo or more	36/162 (22.2)
A few times a year/mo	47/162 (29.0)
More than a few times a month/wk	7/162 (4.3)
Patient's primary care doctor involved in decision-making conversations	26/161 (16.1)
Past experience as caretaker of patient with cognitive/physical disability	63/162 (38.9)
Anxious attachment orientation	27/162 (16.7)
Characteristics determined during ICU stay, <i>n</i> (%)	
Estimated size of family usually visiting patient in the ICU	
1–3 visitors	103/162 (63.6)
> 3	59/162 (36.4)
Number of formal family meetings reported during ICU stay	
0–2 meetings	130/161 (80.7)
3 or more meetings	31/161 (19.3)
Average hours per day spent at bedside with patient	
3 hr or less	38/162 (23.5)
> 3 hr	124/162 (76.5)

between the anxious and nonanxious participants (**Table SDC3**, Supplemental Digital Content 3, <http://links.lww.com/CCX/B51>).

Table SDC4 (Supplemental Digital Content 4, <http://links.lww.com/CCX/B51>) summarizes characteristics of the 159 patients who had a family member participate in the study and who had not opted-out of clinical research participation in the medical chart (**Table SDC4**, Supplemental Digital Content 4, <http://links.lww.com/CCX/B51>). The average length of patient stay was 7.2 days (SD 29.2).

Relative Risk and Risk Difference

Of the 27 family participants with an anxious attachment orientation, 10 (37.0%) reported clinically significant PTSD symptoms at 6 months, compared with 24 of 135 (17.8%) of those with nonanxious attachment. The relative risk of participants with anxious attachment developing PTSD was 2.08 (95% CI, 1.13–3.84; $p = 0.02$). The risk difference between groups was 19.2% (95% CI, 0–38.5%).

Univariate Analyses by PTSD Outcome

Of the 162 participants, 34 (21.0%) had clinically significant symptoms of PTSD at 6 months, whereas 128 (79.0%) did not. **Table 2** summarizes a univariate comparison of those participants who reported versus did not report clinically significant 6-month PTSD symptoms. In addition to being more likely to have an anxious attachment orientation (29.4% vs 13.3%; $p = 0.04$), participants who reported 6-month PTSD symptoms were more likely to identify as being of Hispanic ethnicity (17.6% vs 5.5%; $p = 0.05$), report past experience as a caretaker of a patient with a cognitive or physical disability (55.9% vs 34.4%; $p = 0.04$), and report participating in three or more formal family meetings (vs 0–2 meetings) with the medical team during the patient's ICU admission (32.4% vs 15.7%; $p = 0.05$).

Table SDC5 (Supplemental Digital Content 5, <http://links.lww.com/CCX/B51>) summarizes a univariate comparison of characteristics among patients whose family members participated in the study and whose family members did or did not report 6-month PTSD (**Table SDC5**, Supplemental Digital Content 5, <http://links.lww.com/CCX/B51>). No significant differences were seen between outcome groups, including

the proportion of patients who died or were made comfort measures.

Multiple Logistic Regression

Table 3 summarizes the results of a multiple logistic regression that included family variables possibly relevant to clinically significant 6-month PTSD symptoms. Attachment anxiety was an independent predictor of PTSD (OR, 3.64; 95% CI, 1.35–9.77; $p = 0.01$), along with Hispanic ethnicity (OR, 4.72, 95% CI, 1.34–16.6; $p = 0.01$), and report of participating in three or more formal family meetings with the ICU team (OR, 2.97; 95% CI, 1.14–7.68; $p = 0.02$).

DISCUSSION

Although the overall prevalence of clinically significant symptoms of PTSD at 6 months in our cohort of ICU families (21%) is similar to prior published data, (9) we found that family members with an anxious psychologic attachment orientation as defined by the RQ were twice as likely as those with a non-anxious orientation to develop significant 6-month PTSD symptoms. There was an absolute risk approaching 40% and a risk difference of nearly 20%. We also found that, in addition to anxious attachment, Hispanic ethnicity and report of greater than three formal family meetings with the medical team during ICU stay were independent predictors of long-term PTSD symptoms.

To our knowledge, this is the first report of the degree to which an ICU family member's psychologic attachment orientation is a risk factor for PTSD symptoms. Prior research on risk factors for PTSD symptoms in ICU families has demonstrated other characteristics—including female gender (13, 14, 46), prior psychiatric history (most commonly major depressive disorder) (47–50), and younger age (46, 50, 51)—to be associated with higher levels of post-ICU PTSD. In addition to attachment orientation, actual clinical symptoms of anxiety reported by patients' families at the time of ICU admission (52, 53) have also been associated with their subsequent report of post-ICU PTSD symptoms. Of note, these studies have mostly used the Hospital Anxiety and Depression Scale (54) to measure clinical symptoms of anxiety, a survey instrument with more items than the RQ that we used in this study for attachment orientation assessment. Given the strength of anxious attachment orientation as a predictor and

TABLE 2.
Univariate Analysis With Family Variables by Outcome

Family Variables	PTSD (N = 34)	No PTSD (N = 128)	p
Personal characteristics, n (%)			
Age, mean (sd)	54.4 (16.4)	56.3 (14.4)	0.41
Male sex	13/32 (40.6)	54/127 (42.5)	1.00
Racial minority	6/32 (18.8)	20/122 (16.4)	0.96
Hispanic ethnicity	6/34 (17.6)	7/127 (5.5)	0.05
Native English speaker	30/34 (88.2)	124/128 (96.9)	0.10
Healthcare proxy	25/34 (73.5)	95/127 (74.8)	1.00
Relationship to patient			0.71
Spouse	13/34 (38.2)	51/128 (39.8)	
Son/daughter/child	10/34 (29.4)	36/128 (28.1)	
Parent	7/34 (20.6)	18/128 (14.1)	
Sibling/other	4/34 (11.8)	23/128 (18.0)	
Living in state	27/34 (79.4)	113/128 (88.3)	0.29
Education level			0.43
High school or less	4/34 (11.8)	25/127 (19.7)	
College degree or some college	21/34 (61.8)	64/127 (50.4)	
Professional degree/doctorate	9/34 (26.5)	38/127 (29.9)	
Religion			0.23
Christian	21/34 (61.8)	86/128 (67.2)	
Other religion	6/34 (17.6)	10/128 (7.8)	
No religion	7/34 (20.6)	32/128 (25.0)	
Frequency of attending religious meetings			0.93
Never	10/34 (29.4)	34/128 (26.6)	
Once a year or less	6/34 (17.6)	22/128 (17.2)	
Once a week/mo or more	6/34 (17.6)	30/128 (23.4)	
A few times a year/mo	11/34 (32.4)	36/128 (28.1)	
More than a few times a month/wk	1/34 (2.9)	6/128 (4.7)	
Past experience as caretaker of patient with cognitive/ physical disability	19/34 (55.9)	44/128 (34.4)	0.04
Anxious attachment orientation	10/34 (29.4)	17/128 (13.3)	0.04
Characteristics determined during ICU stay, n (%)			
Family doctor involved in decision-making	4/34 (11.8)	22/127 (17.3)	0.60
Estimated size of family usually visiting patient in the ICU			0.40
1–3 visitors	19/34 (55.9)	84/128 (65.6)	
> 3	15/34 (44.1)	44/128 (34.4)	
Number of formal family meetings reported during ICU stay			0.05
0–2 meetings	23/34 (67.6)	107/127 (84.3)	
3 or more meetings	11/34 (32.4)	20/127 (15.7)	
Average hours per day spent at bedside with patient			0.30
3 hr or less	5/34 (14.7)	33/128 (25.8)	
> 3 hr	29/34 (85.3)	95/128 (74.2)	

PTSD = posttraumatic stress disorder.

TABLE 3.
Multiple Logistic Regression of Possible Family Variables Predicting Clinically Significant 6-Month Posttraumatic Stress Symptoms

Family Variables	OR	95% CI	<i>p</i>
Anxious attachment orientation	3.64	1.35–9.77	0.01
Hispanic ethnicity	4.72	1.34–16.6	0.01
Past experience as caretaker of patient with cognitive/physical disability	2.22	0.98–5.06	0.06
Number of formal family meetings reported during ICU stay			0.02
0–2 meetings			
3 or more meetings	2.97	1.14–7.68	

OR = odds ratio.

the relative ease of using the RQ as a screening tool, we could envision clinicians and researchers administering the RQ to patients' families during ICU admissions to help identify those at high risk for PTSD symptoms after ICU discharge.

The two other independent predictors we found—Hispanic ethnicity and number of formal family meetings during the ICU stay—have rarely been explored previously in literature specifically on family PTSD symptoms following ICU experiences (11, 28). Some Hispanic caregivers may have increased language-related barriers to service use and lack of accessibility to services, including therapy and other psychologic support (55). We speculate whether these contributing factors could have played a role in our finding that there was a higher proportion of Hispanic families in the cohort of families who reported post-ICU PTSD symptoms. Regarding the association of family meetings and PTSD, we hypothesize that a family member having more formal family meetings with the ICU team could be an indicator of experiencing a more eventful ICU admission in and of itself, which in turn may have influenced subsequent development of PTSD symptoms. That is, meetings between the clinical team and family members are often more frequent for ICU patients that require more difficult shared decision-making regarding their care. Prior studies have suggested that such decision-making may be associated with post-ICU PTSD (13, 56).

Our study has limitations. Generalizability may be limited by the fact that we conducted a single-center study in a subspecialty ICU. However, the overall proportion of families in our study with post-ICU PTSD symptoms was similar to those of prior general ICU studies (57–59), and we adequately powered our study

to detect a meaningful difference in PTSD symptoms between our anxious versus nonanxious groups. Our study enrollment was conducted in two distinct phases, although both phases were prospective, and the first phase simply leveraged participants we had recruited for a prior study which already had the same exact inclusion criteria and initial enrollment window in the ICU (30). Biases associated with subject nonenrollment and loss to follow-up are always a concern (60). We have presented analyses of covariate data available regarding 1) the patients associated with eligible families who were not enrolled and 2) families who were lost to follow-up for requisite comparison.

Additionally, this study did rely on self-reported measures. However, both the RQ and IES-R are reliable and have been validated in many populations prior, and the IES-R is the most common measure of PTSD symptoms in ICU studies (1, 33, 38). Furthermore, we did not collect GCS scores to assess the level of engagement of intensity between the patient and family members, which could be an important covariate that influences the risk of developing PTSD. However, we did collect patient code status and modified Rankin Scale at time of discharge that assess for patient capacity to a certain extent, and neither were significant covariates. Last, regarding establishing a direct connection between anxious attachment orientation and post-ICU PTSD symptoms, confounding is a possibility, especially since we did not assess baseline symptoms of clinical anxiety, depression, and PTSD among our participants.

Despite these limitations, we believe that our findings nevertheless have possible practical applications. Families at risk for PTSD symptoms need to be identified early during the ICU stay to participate

in support interventions. Using the RQ for assessing family attachment orientation during the ICU admission is likely more practical than the more extensive screening necessary for formally diagnosing clinical anxiety, depression, and/or PTSD at the time of ICU admission.

CONCLUSIONS

We found that reporting an anxious attachment orientation on the brief RQ instrument doubles the risk that an ICU family member will report possible PTSD symptoms 6 months after patient discharge. We also found that Hispanic ethnicity and experiencing three or more family meetings in the ICU are independent predictors of 6-month PTSD symptoms. The RQ for attachment anxiety screening may be a useful, practical tool early during ICU admission for identifying family members at a particularly high risk for subsequent PTSD, especially for enrollment in early efficacy studies of psychologic interventions. However, these future interventions to mitigate PICS-F will need to be careful in their eventual implementation phase to include all family members at risk for potential longer-term PTSD, given its high prevalence among all ICU families.⁽⁹⁾

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Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's website (<http://journals.lww.com/ccejournal>).

Supported, in part, by the Yale Division of Neurocritical Care and Emergency Neurology Research Fund.

Dr. Vranceanu has received funding from the National Institutes of Health (1K24AT001760-01). The remaining authors have disclosed that they do not have any potential conflicts of interest.

This work was performed at Yale School of Medicine, New Haven, CT.

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