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Comorbid panic attacks among individuals with posttraumatic stress disorder: Associations with traumatic event exposure history, symptoms, and impairment

Jesse R. Cougle [a,*], Matthew T. Feldner [b], Meghan E. Keough [a], Kirsten A. Hawkins [a], Kristin E. Fitch [a]

[a] Department of Psychology, Florida State University, United States
[b] Department of Psychology, University of Arkansas, United States

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ABSTRACT

Little is known about the prevalence of panic attacks in PTSD and their influence on symptom severity and disability. Utilizing the National Comorbidity Survey-Replication data, respondents meeting DSM-IV criteria for past year PTSD ($n = 203$) with and without comorbid panic attacks were compared across various dimensions. Past year panic attacks were found among 35% of the sample and were associated with greater PTSD-related disability and less time spent at work. Panic attacks were also associated with greater prevalence of comorbid depression, substance abuse/dependence, medically unexplained chronic pain, number of anxiety disorders and lifetime traumatic events, PTSD reexperiencing and avoidance/numbing symptoms, and treatment-seeking related to traumatic stress reactions. Multivariate analyses revealed that panic attacks were one of the only unique predictors of severe PTSD-related disability. Overall, findings suggest that panic attacks are common among individuals with PTSD; therapeutic strategies targeting panic in this population may be of significant benefit.

Over the past several years, significant progress has been made in psychological treatments for posttraumatic stress disorder (PTSD). However, a significant portion of individuals who undergo traumatic event-focused therapies remains symptomatic following treatment. For example, approximately half of treatment completers retained their PTSD diagnosis in a recent clinical trial comparing two well-established therapies (Resick, Nishith, Weaver, Astin, & Feuer, 2002). Recently, investigators have turned their attention to comorbid panic attacks and panicogenic processes in PTSD. For example, Falsetti, Resnick, and Davis (2005) and Falsetti, Resnick, and Davis (2008) have presented preliminary evidence for efficacy of a treatment designed specifically for individuals with PTSD and comorbid panic that combines elements of cognitive processing therapy (Resick & Schnicke, 1993) and panic control treatment (Barlow & Craske, 1994). Hinton et al. (2005a) have presented data demonstrating efficacy of culturally adapted cognitive-behavioral therapy for Vietnamese refugees with PTSD and comorbid neck-focused and orthostatic-cued panic attacks. In addition, Wald and Taylor (2005, 2007) have conducted pilot work to test the effectiveness of interoceptive exposure, a key psychological treatment component for panic disorder, in combination with trauma-focused exposure therapy among individuals with PTSD. These developments continue to advance understanding of how to treat comorbid panic and PTSD. However, relatively little work has examined what types of additional problems panic attacks may mark among people with PTSD.

A comprehensive account of the relationship between panic and PTSD was recently proposed by Hinton et al. (2005a) and Hinton, Hofmann, Pitman, Pollack, and Barlow (2008). According to their model, panic attacks may be triggered when certain sensations (e.g., neck tension) activate: trauma memory networks, catastrophic cognitions, metaphoric associations that may be culture-specific (e.g., negative connotations of dizziness found among Cambodian refugees), or interoceptive conditioning that has occurred in relation to specific fear sensations. If activation of any of these four networks results in escalating anxiety, a panic attack is a likely result. They also argue that such panic attacks will worsen PTSD severity through activation of traumatic event-related fear networks and increasing arousal.

Empirical work has supported models of panic and PTSD comorbidity. Among rape victims, 90% of the sample reported four or more panic attack symptoms within 72 h of the assault (Resnick, Falsetti, Kilpatrick, & Foy, 1994). Panic attacks during exposure to a traumatic event have also been linked to acute stress reactions (Bryant & Panasetis, 2001) and PTSD (Galea et al., 2002). History of traumatic suffocation is reported to be more common among individuals with panic disorder and to be linked with respiratory concerns (Bouwer & Stein, 1997). In a treatment study, changes in

* Corresponding author at: Department of Psychology, Florida State University, P.O. Box 3064301, Tallahassee, FL 32306, United States. Tel.: +1 850 645 8729; fax: +1 850 644 7739.
E-mail address: cougle@psy.fsu.edu (J.R. Cougle).

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panic attack symptom severity were found to partially mediate changes in PTSD symptoms (Hinton et al., 2008). In addition, there are now several studies linking heightened anxiety sensitivity and fearful reactivity to bodily arousal, core features of panic disorder, to PTSD (Fedoroff, Taylor, Asmundson, & Koch, 2000; Feldner, Vujanovic, Gibson, & Zvolensky, 2008a; Feldner, Zvolensky, Schmidt, & Smith, 2008b; Leen-Feldner, Feldner, Reardon, Babson, & Dixon, 2008; Taylor, 2003; Taylor, Koch, & McNally, 1992).

Studies also have examined prevalence of comorbid panic spectrum problems (including panic attacks and panic disorder) among individuals with PTSD. Nationally representative samples suggest lifetime prevalence of both panic attacks and panic disorder is elevated among people with compared to without PTSD. Specifically, panic disorder estimates range from 7.3% to 18.6% among men and 12.6–17.5% among women (Feldner et al., 2009; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Estimates of lifetime prevalence of panic attacks suggest people with PTSD are significantly more likely to endorse a positive lifetime history of panic attacks, even after accounting for variance associated with sex, education level, socioeconomic status, race, and diagnoses of drug, alcohol, and nicotine dependence; approximately 53% of men and 62% of women with PTSD, compared to 23% of men and 28% of women without PTSD, endorsed a lifetime history of panic attacks (Feldner et al., 2009). In an investigation of 62 treatment-seeking crime victims (most of whom met criteria for PTSD), 69% reported current panic attacks (Falsetti & Resnick, 1997). No significant gender differences or differences in traumatic event history were found among those with versus without panic attacks, though these comparisons were likely underpowered. In a separate investigation of a community sample, researchers found that 18.2% of those with current PTSD reported panic attacks compared to 1.1% of those without current PTSD (Falsetti, Resnick, Dansky, Lydiard, & Kilpatrick, 1995). Lastly, in a survey of treatment-seeking Cambodian refugees, 80% of those with current PTSD reported orthostatic panic attacks, while only 8% of those without PTSD reported such attacks (Hinton, Pollack, Pich, Fama, & Barlow, 2005b).

Research suggests panic attacks could contribute significantly to symptom severity and disability among people with PTSD. In a large epidemiological study, panic attacks were associated with impairment in perceived physical and emotional health, greater health care utilization, psychoactive drug use, and occupational and financial functioning (Klerman, Weissman, Ouellette, Johnson, & Greenwald, 1991). Moreover, these associations were not accounted for by psychiatric comorbidity, including comorbid panic disorder. An additional study found that non-clinical panickers reported more family, work, and social disability than non-panickers (Katon et al., 1995). Such findings raise the possibility that comorbid panic could increase the substantial rates of comorbidity (Kessler et al., 1995) and severe impairment found among those with PTSD (Rapaport, Clary, Fayyad, & Endicott, 2005).

There remains surprisingly little research on the prevalence and consequences of panic attacks among individuals with PTSD. Such research would speak to the importance of panic attacks in this disorder and the potential utility of panic-focused strategies for improving treatment outcome. Data on treatment-seeking, in particular, may also help indicate likelihood of encountering individuals with PTSD with comorbid panic attacks in a clinical setting. Studies on this topic have been rather limited in scope and have been confined mostly to relatively small samples and populations from a narrow demographic. To our knowledge, no published research has compared individuals with PTSD with and without panic attacks in terms of symptom profiles, disability, or treatment-seeking. Accordingly, the goal of the current study was to examine prevalence of comorbid panic attacks among individuals with PTSD in the National Comorbidity Survey-Replication (NCS-R; Kessler et al., 2004), a large, nationally representative survey of adults living in the U.S. Individuals with PTSD with and without comorbid panic attacks were compared across various dimensions, including traumatic event history, disability, psychiatric comorbidity, chronic pain, and treatment-seeking. It was hypothesized that presence of comorbid panic attacks would be associated with greater symptom severity and disability among individuals with PTSD. In addition, given that previous research found no differences in trauma history between trauma victims with and without panic (Falsetti & Resnick, 1997), comparisons of trauma histories between these groups were considered exploratory in nature.

1. Method

1.1. Sample

The NCS-R is composed of a representative sample of English-speaking adults from the contiguous United States. Participants were interviewed in-person at their place of residence between February 2001 and April 2003. A detailed description of the methodology, weighting, and sampling procedures used in the NCS-R has been provided by Kessler, Berglund, Demler, Jin, and Walters (2005).

All respondents completed Part I of the interview ($N = 9282$) which contained a section covering each of the core mental health disorders. Part II included sections on disorders of secondary importance as well as risk factors, consequences, services, and other correlates of mental health disorders. In an effort to reduce respondent burden, Part II was completed only by those who met criteria for a lifetime core diagnosis as well as a probability subsample of those who did not meet criteria. The current investigation was based on data from a subsample of individuals ($N = 5692$) who reported psychiatric history. Specifically, participants from Part II of the NCS-R were included as only the subset of participants who completed this part of the survey completed measures of PTSD. The sample was 53% female with an average age of 45.01 (SD = 17.9). The racial and ethnic representation of the study participants was 72.8% Caucasian, 11.7% African-American, 11.1% Hispanic, and 4.4% from other ethnicities.

1.2. Procedure

Based on the 2000 U.S. Census, a stratified, multistage probability sample was created. Respondents received a letter describing the survey and their potential participation several days before in-person contact was made. Interviews were conducted face-to-face by professional interviewers who had obtained extensive training and were closely supervised by the Institute for Social Research. Consent procedures were approved by the Human Subject Research Committees at Harvard Medical School and the University of Michigan. Respondents received $50 for completing the interview. The overall response rate was 70.9%. Part I was weighted to adjust for discrepancies between the sample and the U.S. Census in terms of geographic and sociodemographic variables. Additional weighting of Part II was conducted to adjust for differential probability of selection from Part I (Kessler et al., 2004).

1.3. Measures

1.3.1. Demographic

The interview included an extensive demographic section that assessed sex, age, education, marital status, and other demographic variables.

1.3.2. Diagnostic assessment

Lifetime anxiety, mood, and substance use disorders were assessed using the World Mental Health Survey Initiative version of the World Health Organization Composite International Diagnostic Interview (WMH-CIDI; Kessler et al., 2004; World Health Organization, 1990). This is a structured diagnostic interview from which DSM-IV Axis I (American Psychiatric Association, 2000) diagnoses are derived. The CIDI has been found to have good validity and reliability (First, Spitzer, Gibbon, & Williams, 2002).

1.3.3. Traumatic event exposure history

The interview included a number of items that assessed respondents' histories of exposure to traumatic events. Both lifetime number of types of traumatic events reported and most bothersome traumatic event were examined in the current primary analyses. In order to have sufficient power for meaningful comparisons between groups, we collapsed the most bothersome target events related to physical assault/abuse and sexual assault in their own categories. Given the high number of cases who reported unexpected death of a loved one as their target event, this trauma was examined on its own. The remaining traumatic events reported by participants were too few and varied to group into appropriate variables for comparisons.

1.3.4. Disability/impairment

The Sheehan Disability Scale (SDS; Leon, Olfson, Portera, Farber, & Sheehan, 1997) was also included in the assessment. This is a standard measure of role impairment that asked respondents to focus on the 1 month during the past year when their reactions to their most bothersome traumatic event was most severe and to indicate the extent to which these reactions interfered with their: (1) home management, (2) ability to work, (3) ability to form and maintain close relationships with people, and (4) social life. Respondents rated this interference in each of the four domains using a 0–10 visual analogue scale: none (0), mild (1–3), moderate (4–6), severe (7–9), or very severe (10). Responses were averaged for a total disability score. In addition, similar to an analytic strategy used by Kessler et al. (2006), we obtained a separate rating of maximum impairment across domains by taking the highest score across the four ratings and collapsing the severe and very severe response categories. This was used to examine highest levels of impairment/disability across the sample using dichotomous variables (e.g., 0 = no severe disability across any domain, 1 = severe disability in at least one domain).

1.3.5. Medically unexplained chronic pain

Participants were asked whether they had experienced any "medically unexplained chronic pain" that lasted 6 months or longer during the past 12 months. This was defined as pain that is "severe enough either to interfere a lot with your normal activities or cause a lot of emotional distress and that a doctor cannot find a physical cause to explain." If they endorsed this item, they were also asked in what part of their body the pain occurred.

1.3.6. Work history

Participants indicated how many weeks in the past 12 months they worked "either for pay or profit, whether part-time or full-time, including time spent on paid vacation" or paid leave and whether they worked at all during the past week.

1.3.7. Treatment-seeking

Respondents indicated whether they received any professional treatment during the past 12 months for reactions to their most bothersome traumatic event.

1.4. Statistical analyses

Only participants reporting 12-month diagnoses of PTSD ($n = 203$) were included in analyses. These individuals were classified as having at least one panic attack ($n = 72$, 35.4%) or no panic attacks ($n = 131$; 64.5%) during the past 12 months. All analyses were conducted adjusting for complex survey design using *Statistical Analysis Software (SAS) version 9.1* and employed the appropriate NCS-R statistical weights. Analyses of dichotomous variables used Rao-Scott chi-square tests, a version of the Pearson chi-square test adjusted for complex designs. Continuous variables were examined using ANOVAs with panic attack history (positive versus negative) as the between-subjects factor. Multivariate logistic regression analyses were also carried out and odds ratios with 95% confidence intervals were presented where appropriate.

2. Results

Table 1 includes demographic characteristics across groups. No demographic differences were noted with the exception that those with panic attacks completed significantly fewer years of education. Table 2 includes group comparisons between respondents on the main study variables. People with panic attacks were significantly more likely to meet criteria for past year substance abuse or dependence and major depressive episode than those without panic attacks. Further, participants with panic attacks met criteria for significantly more anxiety disorders during the past year. Those with comorbid panic attacks also reported significantly more PTSD reexperiencing and avoidance/numbing symptoms than those without panic; no significant differences in hyperarousal symptoms were noted.

Participants reporting panic attacks were also more likely to have experienced medically unexplained pain during the past year compared to people without panic. The cases were too few to examine differences in location of pain between groups. Among the panic group who endorsed this type of pain ($n = 14$), 5 (35.7%) reported the pain was located in their joints (arms, hands, legs, or feet), 2 (14.3%) reported it was in their neck or back, 1 (7.1%) reported it was in his/her stomach or abdomen, and the rest (6; 42.9%) did not specify location. Interestingly, no panickers reported that their pain was located in their chest. Among participants without panic who reported pain ($n = 8$), 2 (25%) reported it was located in their chest, 2 (25%) reported it was in their stomach or abdomen, 1 (12.5%) reported it was in his/her neck or back, and 1 (12.5%) also reported it was in his/her joints (arms, hands, legs, or feet). The rest (2; 25%) did not specify location.

Participants with panic attacks reported more different lifetime traumatic events than those without panic attacks. Further, analysis of most bothersome events revealed that participants with panic attack histories were significantly more likely to report unexpected death of a loved one as their target event, and

Table 1
Demographic characteristics for study sample.

	PTSD without panic ($n = 131$)	PTSD with panic ($n = 72$)
Female	75.6% (99)	77.8% (56)
Age	40.68 (13.8)	40.98 (13.1)
Household income	52783.68 (45693.71)	44537.46 (51207.10)
White	73.5% (97)	66.7% (48)
African-American	12.1% (16)	12.5% (9)
Hispanic	9.1% (12)	15.3% (11)
Other	5.3% (7)	5.6% (4)
Married/cohabiting	44.3% (58)	43.1% (31)
Education (in years)*	13.20 (2.4)	12.59 (2.2)

* Significant group differences at $p < .05$.

Table 2
Differences between individuals with 12-month PTSD with and without comorbid panic attacks.

	PTSD without panic ($n = 131$)	PTSD with panic ($n = 72$)	χ^2 or F-value	p-Value
Past year depression	27.5% (36)	61.1% (44)	32.51	<.0001
Past year substance abuse/dependence	8.4% (11)	16.4% (12)	4.65	<.04
Past year medically unexplained pain	6.1% (8)	19.4% (14)	9.93	<.002
Past year number of additional anxiety disorders	.71 (.9)	2.07 (1.4)	50.09	<.0001
Most bothersome event: sexual assault	25.8% (34)	20.8% (15)	.73	.39
Most bothersome event: physical assault or abuse	19.1% (25)	8.3% (6)	4.70	<.04
Most bothersome event: unexpected death of a loved one	15.3% (20)	31.5% (23)	6.36	<.02
Total # of traumatic events	5.66 (3.24)	7.06 (4.1)	10.64	<.003
PTSD age of onset	21.83 (13.7)	22.95 (14.8)	.38	.54
PTSD reexperiencing symptoms	3.00 (1.9)	3.51 (1.8)	4.76	<.04
PTSD avoidance/numbing symptoms	3.80 (2.4)	4.39 (2.3)	4.91	<.04
PTSD hyperarousal symptoms	3.02 (1.9)	3.46 (1.9)	2.74	.11
Mean Sheehan Disability Scale scores	4.16 (2.78)	6.15 (2.7)	45.06	<.0001
% reporting severe impairment on one or more dimensions of functioning	47.9% (34)	84.4% (43)	16.16	<.0001
% worked during the past week	68.5% (89)	45.7% (32)	8.27	<.005
# of weeks worked during past year	37.51 (20.8)	28.01 (22.6)	12.60	<.002
Received trauma-related treatment during past year	17.4% (23)	30.6% (22)	19.55	<.0001

Note: Frequencies for percentages and standard deviations for means are reported in parentheses. Some variables have small amounts of missing data.

Table 3
Multivariate logistic regression analysis of predictors of 12-month severe disability.

	Estimate	SE	Wald	OR	95% CI
Total # of traumatic events	.04	.05	.79	1.04	.95, 1.15
Years of education completed	−.14	.07	4.20	.87	.76, .99*
Past year number of additional anxiety disorders	.34	.17	4.29	1.41	1.02, 1.95*
Total PTSD symptoms	−.01	.03	.24	.99	.94, 1.04
Past year substance abuse/dependence	.70	.58	1.44	2.01	.64, 6.28
Past year medically unexplained pain	.31	.46	.46	1.37	.55, 3.38
Past year depression	.58	.33	3.13	1.79	.94, 3.41
Past year panic attack	1.02	.43	5.58	2.77	1.19, 6.45*

Note: OR, odds ratio; CI, confidence interval. Likelihood ratio test, χ^2 (8) = 27.97, $p < .0005$.
* $p < .05$

participants without panic were significantly more likely to report physical assault or abuse as their target event. No difference between groups was noted with regard to occurrence of sexual assault as the target event. Additional analyses of lifetime event history revealed that those with PTSD and panic were more likely to report a history of physical assault or abuse (50/72; 69.4%) than those without panic (75/131; 57.3%; $\chi^2 = 9.66$, $p < .01$). No differences between groups were found in history of sexual assault or unexpected death of a loved one.

Participants with panic attacks also reported greater disability on the SDS. Further, significantly more participants with panic reported severe disability in at least one of four domains of functioning. Lastly, participants with panic reported significantly fewer weeks of work over the past year and were less likely to report having worked during the past week than those without panic attacks.

Multivariate analyses were also conducted to examine whether disability related to panic attacks could be accounted for by additional differences between individuals with versus without panic attacks (see Table 3). A logistic regression model was constructed in which depression, medically unexplained pain, number of anxiety disorder diagnoses, education, substance abuse/dependence, number of traumatic events, and panic attacks were entered as predictors of PTSD-related severe disability. Interestingly, panic attack history, lower education, and number of anxiety disorders were the only unique predictors of severe disability.

We conducted an additional analysis to determine whether the relationship between panic attacks and severe disability could be accounted for by comorbid panic disorder diagnosis rather than panic attacks *per se*. Overall, roughly half of those reporting panic attacks (40/72; 55.6%) also met 12-month diagnosis for panic disorder. We entered both 12-month panic attack and panic disorder variables into a model predicting presence of severe disability. Despite the significant overlap between these variables, both panic attacks (OR = 2.99, 95% CI = 1.26–7.11, $p < .05$) and panic disorder (OR = 3.47, 95% CI = 1.29–9.34, $p < .05$) were unique and significant predictors of severe disability.

3. Discussion

Current results suggest panic attacks mark elevated comorbidity and impairment among people with PTSD. The prevalence of comorbid panic attacks among those with past year PTSD was 35%. However, given the higher prevalence rates of treatment among this population, approximately half (49%) of those who sought treatment for their PTSD during the past year also reported comorbid panic attacks. These findings were more modest than the rate of panic attacks reported by Falsetti and Resnick's (1997) treatment-seeking sample (69%), yet they still suggest that panic attacks are relatively common among individuals with PTSD and clinicians treating traumatic stress reactions may benefit from assessing for their comorbidity.

Perhaps the most profound differences between individuals with PTSD with and without panic attacks relates to reported disability. People with panic attacks reported significantly higher global disability and were much more likely to report severe PTSD-related disability in one of four areas of functioning compared to those without panic attacks (84% versus 48%, respectively). Comorbid panic attacks were also associated with lower likelihood of having worked during the past week and fewer weeks of full or part-time work during the past year. Moreover, multivariate analyses revealed that panic attacks predicted severe disability even after controlling for depression, total PTSD symptoms, number of lifetime traumatic events, additional anxiety disorders,

and other variables. Interestingly, presence of panic attacks but not comorbid depression was uniquely predictive of severe disability. These findings are particularly noteworthy since PTSD is associated with higher rates of severe impairment than other anxiety disorders (Rapaport et al., 2005).

Comorbid panic attacks were also associated with greater psychiatric symptom severity. Specifically, panic attacks were associated with higher prevalence of substance use/dependence and comorbid anxiety disorders, and the prevalence of comorbid depression was over twice as high among those with panic attacks (61%) compared to those without panic (28%). Panic attacks were also associated with a greater number of PTSD reexperiencing and avoidance/numbing symptoms. Panic attacks were not associated with hyperarousal symptoms, which seems to run counter to those predicted by Hinton et al. (2005a, 2008). In sum, these data raise the possibility that comorbid panic attacks may be contributing to the high prevalence of psychiatric comorbidity found among individuals with PTSD. Alternatively, this may reflect the fact that conditions, such as depression, may leave individuals more vulnerable to the experience of panic, as some have argued (Kessler et al., 1998). However, our findings that panic attacks were one of the only categories of psychiatric symptoms associated with PTSD-related disability runs counter to explanations that discount panic attacks as merely a proxy variable for another more serious underlying psychiatric disturbance. Further, our findings that panic attacks and panic disorder were both uniquely associated with severe PTSD-related disability suggest that these associations are not simply due to comorbid panic disorder diagnosis.

Medically unexplained chronic pain was over three times as high among those with panic attacks (19.4%) compared to those without panic (6.1%). Despite research demonstrating associations between panic attacks and chest pain (Fleet et al., 1998), none of the individuals who reported panic said the medically unexplained pain was located in the chest. The most commonly cited pain location among this group was in the joints. These findings may help explain the associations found between PTSD and chronic pain that have emerged over the last several years (Asmundson, Coons, Taylor, & Katz, 2002). The current findings set the stage for future studies to examine possible factors that may lead to this constellation of problems. For example, serious work-related trauma or car accidents combined with avoidant reactions could potentially result in PTSD, panic, chronic pain, and functional disability. This type of research could inform programs aiming to prevent the development of this diagnostic profile and inform assessment protocols employed with people experiencing any implicated traumatic event types.

Participants with comorbid panic attacks also reported a higher number of different types of traumatic events and were more likely to report the unexpected death of a loved one, but less likely to report a physical assault or abuse, as their most bothersome event. Interestingly, an examination of lifetime history of traumatic events revealed that individuals with PTSD with panic were more likely to report a history of physical assault or abuse than those without panic attacks. These findings are consistent with one study that found an especially high prevalence of traumatic events among individuals with both PTSD and panic disorder (Leskin & Sheikh, 2002). They run counter to Falsetti and Resnick's (1997) investigation, which revealed no differences in traumatic event history between traumatic event-exposed individuals with versus without panic attacks. However, their analyses of traumatic event history may have been underpowered. Panic attacks may be a form of severe trauma-related reaction that has an increasing likelihood of occurrence with each additional traumatic event exposure. Indeed, peri-traumatic fear conditioning of interoceptive cues has been postulated as a mechanism leading to comorbid panic and PTSD (Hinton et al., 2008; Jones & Barlow, 1990). Theoretically, repeated traumatic event exposure would result in greater fear of bodily arousal present during the event, thereby increasing the likelihood that panic problems would develop. Thus, the association here may be a parallel finding to the dose relationship found between traumatic event exposure frequency and PTSD symptoms in many other studies (Cougle, Resnick, & Kilpatrick, 2009; Feldner, Lewis, Leen-Feldner, Schnurr, & Zvolensky, 2006; Resnick, Yehuda, Pitman, & Foy, 1995). It is also possible that panic attacks act as a risk factor for subsequent traumatic event exposure or may increase risk for PTSD in response to such events as the unexpected death of a loved one. Analyses to explore such hypotheses, however, were outside the scope of the current investigation.

To summarize, findings from the current study suggest that comorbid panic attacks are particularly common among a nationally representative sample of individuals with PTSD, and they are even more common among those seeking treatment for PTSD. Further, the presence of comorbid panic attacks was associated with severe PTSD-related disability and impairment that surpassed that of comorbid depression and other psychiatric disturbances. In addition, several characteristics emerged distinguishing those with PTSD with panic attacks from those without panic attacks, including higher prevalence of medically unexplained chronic pain, traumatic events, and psychiatric disturbances among those with panic; such characteristics may help guide future research on the role of panic attacks in PTSD. Present findings also provide further evidence for the potential utility of combined treatments incorporating panic-oriented interventions for the treatment of PTSD.

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