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Peritraumatic and Trait Dissociation Differentiate Police Officers With Resilient Versus Symptomatic Trajectories of Posttraumatic Stress Symptoms

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Abstract

Research has consistently demonstrated that stress reactions to potentially traumatic events do not represent a unified phenomenon. Instead, individuals tend to cluster into prototypical response patterns over time including chronic symptoms, recovery, and resilience. We examined heterogeneity in a posttraumatic stress disorder (PTSD) symptom course in a sample of 178 active-duty police officers following exposure to a life-threatening event using latent growth mixture modeling (LGMM). This analysis revealed 3 discrete PTSD symptom trajectories: resilient (88%), distressed–improving (10%), and distressed–worsening (2%). We further examined whether trait and peritraumatic dissociation distinguished these symptom trajectories. Findings indicate that trait and peritraumatic dissociation differentiated the resilient from the distressed–improving trajectory (trait, $p < .05$; peritraumatic, $p < .001$), but only peritraumatic dissociation differentiated the resilient from the distressed–worsening trajectory ($p < .001$). It is essential to explore heterogeneity in symptom course and its predictors among active-duty police officers, a repeatedly exposed group. These findings suggest that police officers may be a highly resilient group overall. Furthermore, though there is abundant evidence that dissociation has a positive linear relationship with PTSD symptoms, this study demonstrates that degree of dissociation can distinguish between resilient and symptomatic groups of individuals.

Police service represents one of the most dangerous jobs available in the civilian sector. Previous research indicates that police officers are often repeatedly exposed to potentially traumatic events (PTEs) in the line of duty, putting them at heightened risk for the development of posttraumatic stress disorder (PTSD; Carlier, Lamberts, & Gersons, 1997; McCaslin et al., 2006). Because police officers are routinely exposed to high rates of PTEs, they are ideally suited for study in prospective longitudinal designs. Despite the high rates of

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exposure, there is consistent evidence that only a minority of active duty officers develop full or subsyndromal PTSD (7–19%; Carlier et al., 1997) indicating strong individual differences in stress responses.

The study of longitudinal patterns of response to PTEs has greatly improved our understanding of the course and outcome of PTSD and stress- related symptoms. These studies have demonstrated that in situations as varied as terrorists attacks (Bonanno, Rennicke, & Dekel, 2005), and disease epidemics (Bonanno et al., 2008), people tend to cluster into prototypical patterns of response over time. The most common observed response patterns are relatively stable low symptom levels (resilience), acute elevation in symptoms with a gradual return to baseline (recovery), and a delayed pattern of subthreshold pathology that worsens over time (Buckley, Blanchard, & Hickling, 1996; deRoon-Cassini, Mancini, Rusch, & Bonanno, 2010).

Longitudinal studies of PTSD symptomatology have utilized statistical techniques uniquely suited for the study of longitudinal heterogeneity, specifically latent growth mixture modeling (LGMM), which allows for the empirical exploration of the underlying heterogeneity of the data that would otherwise be treated as error (Del Boca, Darkes, Greenbaum, & Goldman, 2004). Such studies have revealed common outcome patterns in response to PTEs. For example, following traumatic injury (deRoon-Cassini et al., 2010), exposure during combat (Orcutt, Erickson, & Wolf, 2004), and continued exposure to family violence among children (Nugent, Saunders, & Williams, 2009), at least two classes of people have consistently emerged; one resilient and the other with high levels of symptoms of PTSD. Latent growth mixture modeling may be the ideal methodology for the study of heterogeneity in stress responses as it is uniquely suited for identifying multiple unobserved trajectories and predictors of that heterogeneity as it extends conventional latent trajectory approaches by allowing for the exploration of the effects of key covariates on parameters such as class membership (Curran & Hussong, 2003).

Dissociative phenomena, which include alterations in consciousness, memory, awareness, and identity, have long been theorized to be linked to trauma and stress (Janet, 1889, 1907). Dissociative tendencies are common in the general population (Kihlstrom et al., 1994) and are thought to reflect a dimension of normal personality (Bernstein & Putnam, 1986). Research has shown that individuals with PTSD have significantly higher levels of trait-based dissociative tendencies than individuals exposed to trauma without PTSD (Bernstein & Putnam, 1986; Bremner et al., 1992; Bremner & Brett, 1997), suggesting that high levels of dissociative tendencies may represent a vulnerability for PTSD. Peritraumatic dissociation, on the other hand, refers to acute dissociative experiences that occur during or immediately after a PTE. In a meta-analysis of multiple risk factors associated with PTSD, Ozer, Best, Lipsey, and Weiss (2003) found that peritraumatic dissociation was the single strongest predictor of PTSD. The most common explanation for this link is that dissociation at the time of trauma interferes with normal encoding and processing of traumatic memories, which then increases the likelihood of PTSD (van der Kolk & van der Hart, 1989).

To date, no study we are aware of has examined heterogeneous trajectories of response among this frequently exposed population, or whether trait and peritraumatic dissociation predict PTSD symptom patterns over time following traumatic events. We predicted that both trait and peritraumatic dissociation would differentiate those with resilient from those with symptomatic profiles.

METHOD

Participants and Procedure

Academy trainees from four police departments (New York City, NY, and San Francisco, Oakland, and San Jose, CA) were introduced to the study through a presentation by study personnel during academy training classes, letters from the commissioner or police chief, and informational flyers posted at the academies. Trainees who had previously served in the military, law enforcement, or emergency services were excluded. Procedures were approved by the University of California, San Francisco Institutional Review Board and a Federal Certificate of Confidentiality was obtained. Participants were evaluated at baseline (academy training), and 6, 12, 24, and 36 months after commencement of training. Prior to the initial assessment, study procedures were described in detail and written informed consent was obtained. For a full description of recruitment procedures, see McCaslin et al. (2008).

This study utilized a subsample of officers who were exposed to life-threatening events (N = 178) extracted from a larger cohort of 400 police officers followed longitudinally from academy training. The data reported here were collected as part of a larger self-report packet completed either online or if on paper then mailed to the study coordinators. All participants were given a unique identification number so that data completed online or mailed could be linked with the correct participant. The subsample of 178 reported being exposed at least once to a life-threatening event while on duty such as having been shot at or attacked. In a binary logistic regression, we compared 174 of these officers to 216 of those not exposed because were missing data on key variables (age, gender, educational attainment). Results indicate nonsignificant differences between the groups, χ^2 (3, 390) = 3.57, p = .31; and that subjects did not differ in age, *Wald* = 0.06, p = .82; gender, *Wald* = −2.45, p = .12; or level of education, *Wald* = 1.13, p = .29.

The PTSD symptom levels were assessed at each time point (6, 12, 18, 24, and 36 months into active duty) all with respect to the worst baseline PTE using the PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993). Peritraumatic dissociation was assessed at each time point and also keyed to the worst baseline PTE using the Peritraumatic Dissociative Experiences Questionnaire (PDEQ; Marmar, Metzler, & Otte, 2004). At baseline trait dissociation was assessed using the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986).

Measures

The PTSD symptoms were measured using the PTSD Checklist-Military Version (PCL-M) modified to assess PTSD symptoms related to police service rather than military service. The PCL-M is a 17-item self-report measure that maps onto the 17 symptoms of PTSD according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV;* American Psychiatric Association, 1994). Each item is measured on a 5-point Likert scale (1 = *not at all true* to 5 = *extremely true*) (Weathers, Litz, Husk, & Keane, 1994). Scores are then summed across the 17 items. Responses were for the last month. This measure demonstrated interitem reliability at 12 months in this sample (α = .89).

Peritraumatic dissociation was measured using the PDEQ. PDEQ scores following first exposure were utilized in the analysis. The PDEQ is a 10-item measure in which participants rate items in reference to their most disturbing traumatic event on a 5-point Likert scale from (1 = *not at all true* to 5 = *extremely true*). A total score is calculated by taking the mean of the 10-item responses (Marmar et al., 2004). The PDEQ was completed in reference to each

officers' self-identified most distressing critical incident. The PDEQ demonstrated high interitem reliability in this sample at 12 months (α = .86).

Trait dissociation was measured using the Dissociative Experiences Scale (DES). The DES is a 28-item self-report measure. For each item, participants rate the degree to which they experience each symptom from 0–100% in 10% increments. The DES has been found to have good internal consistency (Bernstein & Putnam, 1986) and has demonstrated good test-retest reliability and internal consistency in clinical samples (Dubester & Braun, 1995). The DES was completed during the baseline data collection and demonstrated high interitem reliability in this sample (α = .93).

The Critical Incident History Questionnaire (CIHQ) is a 39-item self-report measure designed to assess PTSD Criterion A events typically encountered by police officers in the line of duty (see Maguen et al., 2009; Weiss et al., 2010). Of the 39 items, 14 assess exposure to life-threatening events in the line of duty such as being shot at, attacked, or being seriously injured in the line of duty. The current study only utilized the 14 items assessing exposure to life-threatening events. Participants could endorse a single item multiple times if they were exposed to that event multiple times within the 6-month assessment time frame.

Data Analysis

Using Mplus 6.0, we employed LGMMs to construct trajectories of PTSD symptoms over five time points. We utilized a floating baseline design where time point 1 was centered to officers' first-reported exposure to a life-threatening event on the CIHQ. First, we identified a univariate single-class growth model without covariates to facilitate model specification for the LGMM. Second, we compared progressive nested unconditional LGMMs (no covariates), assessing relative fit with conventional indices, including the Bayesian information criterion (BIC), sample-size adjusted Bayesian information criterion (SSBIC), Akaike information criterion (AIC) indices, the Lo-Mendell-Rubin likelihood test (LRT; Lo, Mendell, & Rubin, 2001), and the Bootstrap Likelihood Ratio Test (BLRT). Model fit was assessed using all of the above measures with the greatest weight placed on the BLRT, reduction in the BIC, and considerations made for parsimony and interpretability consistent with recommendations for choosing the correct number of classes (Nylund, Asparouhov, & Muthe´n, 2007). After finding the best-fitting unconditional model, we regressed class membership as a latent categorical variable on our covariates (trait dissociation, peritraumatic dissociation) in a multinomial logistic regression nested in the LGMM.

Over the five time points, 49 participants were missing data at one time point, 24 at two time points, 17 at three time points, and 12 at four time points. An analysis of variance (ANOVA) revealed that missingness was not associated with baseline scores on the modified PCL-M, F (1, 177) = 0.63, p = .60; the DES, F (1, 177) = 0.54, p = .65; or PDEQ, F (1, 177) = 0.62, p = .60. To address missing data, we employed a robust full-information maximum-likelihood (FIML) estimation procedure for handling missing data. A FIML estimation assumes missing data are unrelated to the outcome variable (i.e., missing at random). The appropriateness of FIML is widely endorsed (Enders, 2001). Simulation studies have demonstrated that maximum-likelihood estimators provide unbiased estimates when data are both missing completely at random—meaning there is no predictable pattern to the missingness—and when data are missing at random—where the missingness may occur with some level of predictability, but where that predictability is not related to the focus of the study (Muthén, 1987). There is strong evidence that even when the assumption of missing at random does not hold, using maximum-likelihood estimators provides more accurate estimates than removing data listwise (Muthén, 1987). In the study of stress responses, PTSD symptomatology represents a challenge to the missing at random assumption. Other

longitudinal studies where attrition may be related to pathology have demonstrated that mixed model approaches like those used here provide stronger estimates when compared to both listwise deletion and single imputation techniques (Heo, 2007). As discussed above, subjects with and without missing data did not differ in initial PTSD symptom scores. As such, we proceeded in our analysis with the assumption that data were missing at random.

RESULTS

Of the 178 subjects, 158 reported their first exposure to a life-threatening event on the CIHQ while on duty within the first 6 months of active duty, 19 reported first exposure between 7 and 12 months, and one subject reported first being exposed at between 13 and 18 months into active duty.

First, we examined intercorrelations between our variables of interest. Results indicated that cumulative life-threatening events and trait dissociation were most highly correlated with Time 1 PTSD symptom scores and that peritraumatic dissociation was highly correlated with PTSD symptom scores for all five time points (Table 1).

Next, we estimated a model designed to capture a single latent growth trajectory of PTSD symptoms over all time points. Using the above criteria to determine fit, we compared models with linear parameters only and then linear and quadratic trends (Akaike, 1987; Schwartz, 1978; Sclove, 1987). After fitting the strongest performing unconditional model with the strongest distinction between classes, as exhibited by consistent decline in the information criteria, strong fit statistics, a sufficiently high level of entropy, as well as regard for parsimony and interpretability, we constructed a model conditional on the dissociation variables.

Unconditional Model

The fit statistics for 1- to 4-class solutions for trajectories of PTSD symptoms are summarized in Table 2. The 2- through 3-class solution exhibited improvements in the information criteria. The LRT performed with mixed results, but the BLRT showed significant χ^2 difference from one to three classes. Although the BLRT demonstrated significance for a 4- versus 3-class solution for linear weights only, consistent results from the information criteria preferred a linear + quadratic nested solution. Furthermore, the addition of a fourth class made the model less parsimonious as it split an existing class into two parallel trajectories with little difference in characteristics between the two. Entropy, a posterior probability of overall membership, remained within a high range consistent with Muthe´n's recommendations (1991, 2001). Though one class was quite small (1.7 %), this class was distinct in its qualities with regard to the slope and intercept. Further, this class served to clarify the other classes. Also, as this class corresponded with known rates of PTSD in the sample and showed uniquely high rates of symptoms, demonstrated markedly higher rates of exposure (Table 2), and is consistent with all other identified trajectory models of PTSD symptomatology, we elected to construct the conditional model based on a 3-class solution with linear + quadratic weights.

PTSD Trajectories

Three distinct trajectories were observed (see Table 3 for means and standard deviations by group). Consistent with the literature, the largest class (88.1%) could best be described as resilient or little or no observable symptoms in response to PTEs (Bonanno, 2004; Bonanno et al., 2008). This is indicated by a distinct intercept that is significantly lower than other classes, intercept *EST* = 20.40, *SE* = 0.59, $p < .001$; a flat slope, slope *EST* = −0.77, *SE* = 0.48, $p = .11$; and no quadratic trend, quadratic *EST* = 0.13, *SE* = 0.09, $p = .12$.

The second largest class, distressed–improving (10.1%), is characterized by a significantly higher intercept, 44.06, *SE* = 3.27, $p < .001$, with a significant negative slope, −7.63, *SE* = 2.70, $p < .01$, and marginally significant positive quadratic trend, 0.77, *SE* = 0.43, $p = .07$. This class is characterized by a moderate level of initial PTSD symptoms immediately following first exposure to a life-threatening event, with slight but significant downward trend over time. This group, however, does not appear to demonstrate full regression to the mean, but may be better understood as subsyndromal but potentially highly reactive to stress.

The smallest class, distressed–worsening (1.7%) is characterized by an intercept that is a nonsignificant difference from the resilient group, 6.69, *SE* = 4.15, $p = .11$, with a significant positive slope, 22.71, *SE* = 5.27, $p < .001$, and significant negative quadratic trend, −3.21, *SE* = 1.28, $p < .05$.

Because of the small *n* in the distressed–worsening and the distressed–improving, we were not able to explore group differences on cumulative exposure reported on the CIHQ without overtaxing the model. A descriptive comparison, however, demonstrates that the former class was exposed to much higher rates of life-threatening events over all five time points (Table 3).

Conditional Model

After establishing the unconditional model that best fit the data, we introduced two covariates as predictors of class membership. Using a multinomial logistic regression with trait and peritraumatic dissociation entered as predictors of class membership, we assessed if members of particular classes were more likely to demonstrate dissociative characteristics. Four subjects were missing data on one or both of these covariates and so were dropped from the analysis. The reduction in sample size resulted in slight variations in the percentages of class membership (resilient = 87.2%; distressed– improving = 10.7%; distressed–worsening = 2.0%), but did not affect the class structure ($n = 174$).

We were able to predict differences between the resilient and the distressed–improving classes. Although the distressed–worsening class is of considerable interest theoretically as they demonstrate consistent growth towards increased PTSD symptoms over time, this class is quite small and we lack the power to predict characteristics of this group (Figure 1). As such, findings which distinguish the resilient from the distressed–worsening classes should be treated as exploratory findings.

Results from the multinomial logistic regression, in which we modeled trait and peritraumatic dissociation together predicting class, indicate that peritraumatic dissociation served as a strong predictor in distinguishing between both the resilient versus the distressed–improving class, *EST* = 2.07, *SE* = 0.46, $p < .001$, and the resilient versus the distressed–worsening class, *EST* = 2.27, *SE* = 0.52, $p < .001$, where the resilient class demonstrated significantly lower scores on peritraumatic dissociation compared to both groups. The distressed–improving and the distressed–worsening groups did not differ significantly from each other in observed scores on peritraumatic dissociation, *EST* = 0.19, *SE* = 0.44, $p = .66$.

Trait dissociation was a significant predictor in distinguishing between the resilient and the distressed–improving classes, *EST* = 0.06, *SE* = 0.03, $p < .05$. Trait dissociation was a nonsignificant predictor in distinguishing between the resilient and the distressed–worsening class, *EST* = 0.05, *SE* = 0.05, $p = .40$. As we can observe from the estimates, the magnitude of these variables in predicting class membership is much smaller in the case of

trait dissociation. There was no difference between the two distressed classes, *EST* = −0.01, *SE* = 0.05, *p* = .80.

Post Hoc Analyses

Because of the relatively small samples per class, we did not want to overwhelm the model with covariates. As previous literature, however, has demonstrated group differences related to demographic variables including gender, age, ethnicity, and level of education (Bonanno, Galea, Bucciarelli, & Vlahov, 2007), we felt it was necessary to assess possible differences by class membership. We did this outside of the model by treating most likely class assignment as the dependant measure with gender and ethnicity set as fixed factors, and age and level of education as covariates. The likelihood ratio test revealed no significant differences by class membership: gender, χ^2 (2, 176) = 1.80; *p* = .41; ethnicity χ^2 (30, 148) = 23.65, *p* = .79; age χ^2(2, 176) = 1.82, *p* = .40; and education χ^2(2, 176) = 0.10, *p* = .95.

DISCUSSION

In this article, we explored heterogeneity in the course of PTSD symptoms following first exposure to a life-threatening event among a sample of 178 active-duty police officers by mapping longitudinal trajectories over 3 years of active-duty service. The vast majority of our sample reported their first exposure in their first 6 months of active duty (*n* = 158). Although correlations between the modified PCL-M across time points were significant, the coefficients were lower than would be expected. As two of the three trajectories demonstrated significant quadratic trends over time, the relatively low coefficients may not capture the association between variables as correlations test for linear associations.

Our study revealed three distinct patterns of response among police officers, the most common pattern of response being resilience. Of our sample, 88.1% revealed no substantive change in their observed levels of PTSD symptoms from the initial observation to 2 years following exposure. This pattern has been repeatedly identified in the literature (Ho, Ho, Bonanno, Chu, & Chan, 2010; Kaltman & Bonanno, 2003; Mancini & Bonanno, 2006; deRoon-Cassini et al., 2010). They are characterized by their ability to adapt despite highly aversive events in which others develop stress-related symptoms. This model is unique, as the trajectories do not only represent response patterns to a single discrete event. Although PTSD symptom data were centered on officer's first exposure to a life-threatening event in the line of duty, active-duty officers are regularly exposed to such events.

This sample displayed unusually high rates of resilience compared to other samples. This may be due to a number of factors including the high level of social and institutional support police officers receive, as well as the commonplace nature of encounters with PTEs, which may help to prepare officers for the inevitable. Additionally, there are self-selection and institutional selection factors that shape who enters police work, which may contribute to the relative resiliency of this group.

Two other distinct trajectories of PTSD symptoms were observed. Both fell in the subsyndromal range, though it must be stated that each trajectory represents estimated means and as such, it would be in error to conclude that no subjects met full criteria for PTSD. Furthermore, there is strong evidence that individuals with subsyndromal PTSD often present with significant psychosocial and occupational impairment (Kulka et al., 1990; Stein, Walker, Hazen, & Forde, 1997; Weiss et al., 1992). We described the second largest class as distressed–improving (10.7%). This class is of particular interest as they represent a group who presented initially with high rates of PTSD symptoms and slowly decreased over time. Because preexposure PTSD symptoms at baseline were unavailable, we cannot conclude that these initial high rates were due to exposure during the initial 6 months. This

class may be of particular interest because they initially respond to first exposure with a spike in PTSD symptoms, which abates somewhat over time. The course and rates of observed symptoms may be consistent with the previously observed “recovery” class in the literature (Buckley et al., 1996; deRoon-Cassini et al, 2010). In these previous studies, however, individuals were exposed to a single discrete event whereas our subjects are regularly exposed, and they never appear to fully recover. As such, this class may present more of a concern as they may be particularly vulnerable, but also may go unnoticed as they are less acutely symptomatic.

Finally, we observed a small class (2.0%) who showed consistent increase in PTSD symptoms over the 3 years assessed in this study. The trajectory observed in this class may indicate that among individuals who are repeatedly exposed, PTEs may have a compounding effect on symptom levels. Though we did not have sufficient power to explore this hypothesis statistically, a comparison of mean exposure rates by class demonstrates this class was both exposed to a greater number of cumulative PTEs and a far greater number at each time point, adding credence to this hypothesis.

Trait dissociation and peritraumatic dissociation, when examined together, both positively predicted PTSD symptoms. Evidence that both predict trajectories of PTSD symptoms indicate that they contribute uniquely as both remained significant when analyzed in conjunction despite being highly correlated. Peritraumatic dissociation predicted PTSD symptoms more strongly than did trait dissociation. McCaslin and colleagues (2008) found that both peritraumatic and trait dissociation were associated with the development of PTSD symptoms in this subset of the 400 officers.

The findings from the current study add to the literature on dissociation in PTSD by examining trait dissociation and peritraumatic dissociation as predictors of discrete patterns of response in PTSD symptoms. Further, differences by class on trait and peritraumatic dissociation also support the notion that resilient individuals are not simply best understood by the absence of long-term disruption in functioning and long-term symptom elevation. Consistent evidence has demonstrated that resilient individuals differ from the nonresilient on a number of cognitive and sociocontextual factors including self-evaluation (Bauer & Bonanno, 2001), attentional patterns related to the potentially traumatic event (Coifman, Bonanno, Ray, & Gross, 2007), degree of exposure, gender, age, ethnicity, level of education, and social support (Bonanno et al., 2007). Our findings indicated that both individual dissociative characteristics both unrelated and related to the potentially traumatic event contribute uniquely to symptom outcomes following exposure.

Strengths and Limitations

This was the first study we know of examine patterns of PTSD symptoms following exposure to PTEs in police. Few studies have employed LGMM to characterize individual differences in responses to stressful events over time. Using this method, we were able to construct meaningfully distinct symptom profiles following PTEs, particularly with regard to the two distressed classes. Caution should be taken in extending the current findings to other populations. This sample of police is unusual in terms of the level of resilience. The resilient response profile, however, may be more common than we previously have understood it to be, and advanced statistical procedures like LGMM are well suited to quantifying resiliency as well as risk. The symptom profiles found in the current study may not generalize to populations who are exposed to single PTEs rather than multiple PTEs, and who are not trained to face PTEs in the course of their daily lives or work.

There are other limitations beyond the generalizability of the sample. The use of self-report measures, especially with regard to the use of a modified PCL-M may be problematic. As

PTSD is a multidimensional diagnosis requiring symptoms in multiple domains, it is not clear that this scale is adequate to capture PTSD phenomenology. Furthermore, self-report symptom measures lack the clinical nuance necessary to properly assess symptoms as they are left to the subject's interpretation without clarification and without assessment of impairment. Furthermore, though we used a strict criterion of only life-threatening events on the CIHQ, the types of events may not represent a unified phenomenon as we lump together events as drastic as being taken hostage with more possibly mundane events such as being attacked by a dog. Although these represent the extreme ends of the spectrum, it is worth noting that they may be distinct both in their nature and the resulting implications for pathology. This represents a serious limitation of this study. Furthermore, this study only looks at trajectories of PTSD symptomatology. This may not adequately capture positive growth in officers. Other symptoms such as depression and variables associated with functioning as well as positive growth should be explored in future studies.

CONCLUSION

Overall, findings from the current study support the idea that responses to PTEs are heterogeneous. Police may be a group that is particularly resilient to trauma, as most individuals never developed PTSD symptoms despite high levels of trauma exposure. In the current study, group membership in symptomatic versus non-symptomatic trajectories was predicted by well-established risk factors for PTSD. The convergence of this finding with previous research using correlational approaches supports the utility of LGMM in extracting meaningful trajectories of symptom response. Because the current sample was highly resilient and the symptomatic groups were relatively small, we were unable to determine whether our predictors were distinctly associated with either of the symptomatic groups. Future studies of symptom response to PTEs using LGMM will aid in providing a more-nuanced understanding of differing responses to trauma and predictors of these differing responses.

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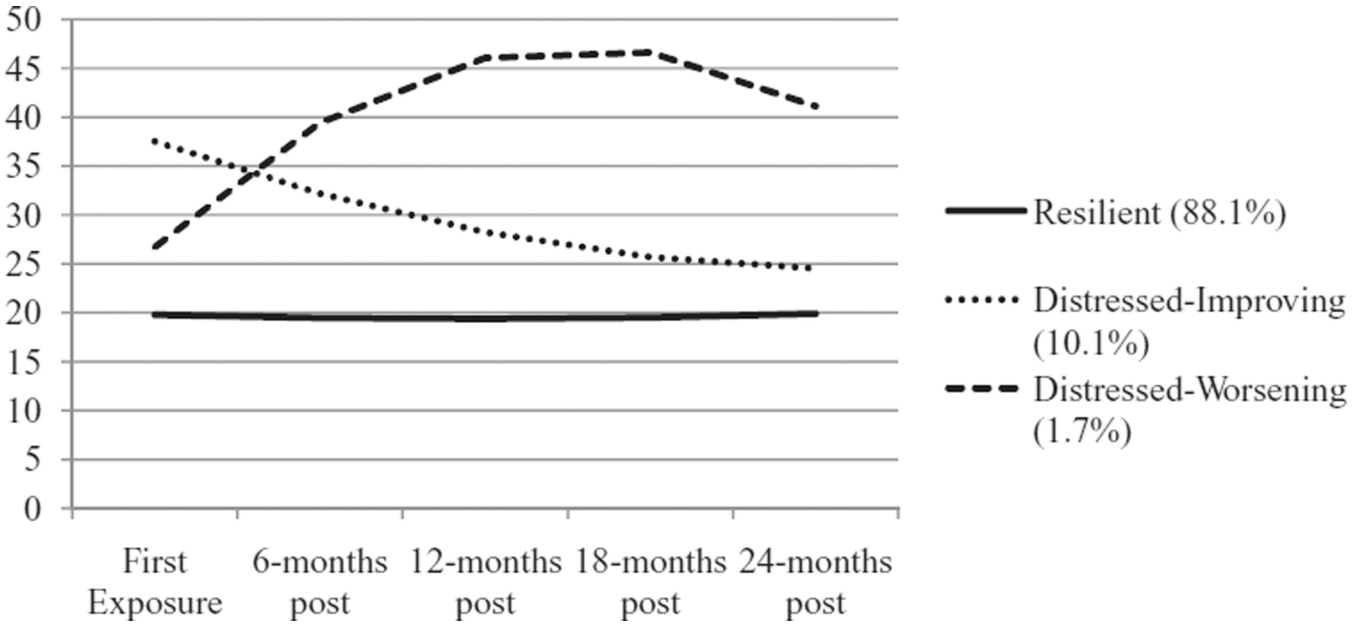

Figure 1.
A 3-class unconditional model for modified PTSD Checklist (PCL-M) scores for 178 police officers exposed to life threat.

Table 1

Descriptive Statistics and Correlations for All Study Variables

Measures	*M*	*SD*	1	2	3	4	5	6	7	8
1. Events	3.52	4.86	–							
2. DES	6.03	6.85	.04	–						
3. PDEQ T1	1.50	0.59	.17**	.06	–					
Modified PCL-M										
4. Baseline	21.62	6.55	.22***	.16**	.49***	–				
5. 6 months	21.06	7.00	.10	.13	.37***	.54***	–			
6. 12 months	20.82	6.46	.20**	.08	.31***	.47***	.37***	–		
7. 18 months	19.97	4.57	.17**	.20**	.47***	.49***	.48***	.71***	–	
8. 24 months	21.28	6.67	−.02	−.05	.20**	.30***	.37***	.67***	.42***	–

Note. *N* = 178. Events = Critical Incident History Questionnaire cumulative line of duty life threatening events at floating baseline T1; DES = Dissociative Experiences Scale; PDEQ = Peritraumatic Dissociative Experiences Questionnaire Time 1; PCL-M = PTSD Checklist Military Version.

** $p \leq .01$.

*** $p \leq .001$.

Table 2

Fit Indices for 1- to 4-Class Unconditional Growth Mixture Models of PTSD Symptoms

	Growth mixture model							
	Linear weights only				Linear + quadratic weights			
Fit indices	**1 Class**	**2 Class**	**3 Class**	**4 Class**	**1 Class**	**2 Class**	**3 Class**	**4 Class**
AIC	4304.46	4182.91	4130.07	4066.68	4257.46	4187.66	4116.73	4066.68
BIC	4329.92	4205.18	4174.61	4141.51	4292.46	4222.67	4177.01	4139.89
SSBIC	4304.58	4183.01	4130.28	4087.67	4257.62	4187.82	4117.01	4067.02
Entropy	–	.97	.97	.96	–	.96	.98	.99
LRT	–	$p = .07$	$p = .46$	$p = .16$	–	$p = .49$	$p = .14$	$p = .18$
BLRT	–	$p < .001$	$p < .001$	$p < .001$	–	$p < .001$	$p < .001$	$p = .15$

Note: N = 178. PTSD = Posttraumatic stress disorder; AIC = Akaike information criterion; BIC= Bayesian information criterion; SSBIC = sample size adjusted Bayesian information criterion; LRT = Lo-Mendell-Rubin test; BLRT = bootstrap likelihood ratio test.

Table 3

Mean PTSD Symptoms and Rate of Life-Threatening Exposures as a Function of Class Membership

	Class					
	Resilient (*n* = 157)		Distressed–improving (*n* = 18)		Distressed–worsening (*n* = 3)	
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***
Modified PCL-M	19.69	3.30	37.17	6.70	27.33	2.89
Baseline						
6 months	19.43	3.87	33.21	12.83	34.33	6.65
12 months	19.61	3.82	26.30	6.15	56.00	1.41
18 months	19.12	3.28	24.64	7.02	38.09	1.28
24 months	20.41	5.46	24.81	5.40	45.00	19.80
CIHQ						
Baseline	3.34	4.10	5.94	6.28	12.00	14.18
6 months	2.38	3.84	2.11	4.10	13.00	10.54
12 months	3.43	6.29	1.17	1.98	30.00	49.30
18 months	2.76	5.15	1.30	2.06	11.33	19.63
24 months	3.48	6.64	1.06	4.45	11.33	19.63
Cumulative	15.39	17.18	12.67	9.27	81.33	64.66

Note: PCL-M = PTSD Checklist-Military Version; CIHQ = Critical Incident History Questionnaire; Baseline = first reported exposure on active duty; Exposure = reported incidents of exposure to 14 possible life-threatening events experienced in the line of duty endorsed on the CIHQ; Cumulative = cumulative exposure to 14 possible life-threatening events as reported on the CIHQ.