A Pilot Study of a Trauma Resiliency Protocol for Law Enforcement Officers With Posttraumatic Stress Disorder Symptoms

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Objective: The aim of the study is to test the efficacy of the 22ZERO Trauma Resiliency Protocol (TR-P) on posttraumatic stress disorder (PTSD) symptom severity among current and former law enforcement officers. **Methods:** The study used a retrospective, pre/post intervention design to test the effects of the TR-P on measures of self-reported symptom severity. **Results:** One hundred twenty-eight current and former law enforcement officers were exposed to the TR-P treatment. All participants were administered the PTSD Checklist for DSM-5 PTSD Checklist and other psychological assessments before and after exposure. Participants experienced a significant reduction in symptom severity, suggesting that exposure to the TR-P reduced the effects of PTSD in this sample of law enforcement officers. **Conclusions:** The 22ZERO TR-P may be an efficacious mechanism for reducing PTSD symptom severity among current and former law enforcement officers. It should be tested using a randomized trial and a longer follow-up period.

Keywords: occupational health, posttraumatic stress disorder, trauma, law enforcement, police, first responders

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LEARNING OUTCOMES

- Law enforcement officers have elevated PTSD levels relative to the general population.
- A free treatment initiative provided by 22ZERO, a nonprofit entity, reduced PTSD symptom severity in a sample of current and former law enforcement officers.

Posttraumatic stress disorder (PTSD) represents a serious health risk for certain occupations with routine exposure to traumatic events. It is known to be particularly prominent among certain high-risk groups, including first responders and military combat personnel.[1–3] Historically, leaders and managers within these occupations have not taken PTSD and its effects on frontline employees seriously.[4,5] That has begun to change in recent years, due in part to the effects of suicides among current and former first responders and military personnel suffering from PTSD due to job-related trauma.[6–8]

A growing body of scientific research evidence has emerged on the etiology, prevalence, and effects of PTSD within these high-risk occupations. One consistent finding across multiple studies is that military combat personnel and first responders have elevated PTSD rates compared to the general population. For example, a meta-analysis based on data from more than 300,000 study participants in five continents found substantially higher PTSD rates among military personnel and firefighters relative to reported rates in the general population.[9] A meta-analysis based on data from more than 20,000 rescue personnel from 14 countries on all continents found PTSD rates of approximately 9.2–10.5% depending on the diagnostic criterion used.[10] A meta-analysis based on data from more than 30,000 ambulance personnel found a PTSD rate of 11%.[11] Another meta-analysis based on 270,000 law enforcement officers from 24 nations found a PTSD prevalence rate of 14.2%.[12] These elevated PTSD rates raise important questions about what types of services are available to members of these occupations to prevent and treat this serious psychiatric disorder.

Fortunately, a growing body of research evidence has accumulated on the effectiveness of interventions intended to reduce the frequency and severity of PTSD symptoms in these high-risk occupations. For example, a recent meta-analysis identified 10 rigorous studies that tested the effects of psychological interventions on PTSD symptoms among first responders.[13] Nine of the 10 studies found that the interventions reduced PTSD symptoms among participants and the overall meta-analysis results showed a statistically significant reduction in PTSD. The authors found clear evidence "that psychological interventions are effective in helping to treat PTSD in first responders."[13]

The literature on clinical interventions directed at these high-risk occupations has focused primarily on trauma-based therapies.[14,15] Different modalities of cognitive-behavioral therapy (CBT) present the most robust evidence for effectively treating PTSD in first responders.[2] For example, a randomized trial found that combining CBT with imagery rehearsal therapy reduced PTSD-related sleep disturbance symptoms in a sample of military veterans.[16] A study investigating a prolonged exposure therapy protocol found a clinical reduction in chronic PTSD symptoms in a sample of veterans after exposure to the intervention.[17] A randomized trial found that eye movement desensitization and reprocessing (EMDR) reduced acute PTSD symptoms in a sample of first responders in Mexico.[18] A later systematic review concluded that EMDR is an effective mechanism for preventing and treating workplace trauma exposure among first responders.[19] Research has also found that compassion-focused therapy[20] was effective in reducing PTSD symptoms in a sample of veterans. These various trauma-based therapies focus on consciously revisiting and reshaping the deleterious beliefs, thoughts, and feelings that developed as a consequence of exposure to trauma.[21]

In spite of their many successes, trauma-based therapies have certain limitations. They are contraindicated for some clients, including those who have substance dependence issues or who are experiencing suicidal or homicidal ideation. One study concluded that for certain patients, it may be necessary to adopt a phased treatment approach that involves "an initial period of stabilization or skills training prior to undertaking trauma-focused processing."[15] Another criticism of CBT and EMDR treatments for PTSD is that they have high nonresponse and dropout rates. As a result, some clinicians are hesitant to use these treatments for PTSD patients.[22,23] Another consideration is that treatments like CBT and EMDR require clinicians to undergo highly specialized

training, thus making them less available or accessible to some clinicians and their patients.[21]

Alternative nontrauma-based approaches to PTSD treatment include the trauma resiliency (TRM) and the community resiliency (CRM) models. These treatment protocols focus on helping people improve their resilience capacity by teaching them how to regulate their physiological responses to trauma rather than processing the specific traumatic events directly.[21,24–28] Empirical research on these treatment protocols is scarce but promising. For example, one randomized trial found that two sessions of TRM lowered PTSD-related symptoms among social services staff in the aftermath of Hurricanes Katrina and Rita.[27] A pre-post study found that CRM was effective in increasing wellness indicators in a diverse sample of people with "a history of complex/cumulative traumas and untreated posttraumatic stress" in San Bernardino County.[29] A randomized controlled trial involving registered nurses concluded that CRM was effective in improving well-being and resilience and reducing traumatic stress.[30] To our knowledge, however, there have not yet been any evaluations testing the efficacy of TRM or CRM treatments on first responders. The present study seeks to fill that gap in the literature by examining the efficacy of a TRM approach to PTSD in a sample of current and former law enforcement officers.

METHODS

Study Design and Participants

This study complies with STROBE (STrengthening the Reporting of OBservational studies in Epidemiology) guidelines for reporting the results from observational studies[31] (Supplemental Digital Content, http://links.lww.com/JOM/B593). This is a pilot study that relies on a single-sample, pre-post design to examine the efficacy of the Trauma Resiliency Protocol (TR-P) on self-reported PTSD symptoms. The TR-P was developed by a nonprofit organization called 22ZERO to reduce the frequency and severity of PTSD symptoms among military and first responder populations. 22ZERO provides free treatment services to current or former military service members, first responders, and their families. All treatment recipients contacted 22ZERO voluntarily to seek out these services. The present study focuses only on law enforcement officers. All current and former law enforcement officers who participated in the TR-P treatment and who completed a standardized instrument to measure PTSD symptoms before and after the treatment were included in this study (n = 128).

Table 1 presents a profile of study participants. At pretest, participants ranged in age from 20 to 72 years old, with a mean and median of approximately 45. More males (71.2%) than females (28.8%) participated in the treatment. In terms of race and ethnicity, most participants (90.5%) were White, with the remainder identifying as Hispanic (3.2%), mixed (3.2%), and a handful of other racial and ethnic categories. Most participants were current law enforcement officers (82.8%). Nearly one in six participants indicated that they were retired at the time of the pretest (16.4%), and a handful of others were former law enforcement officers who had not retired from the job. Nearly one

TABLE 1. Participant Profile at Pretest (N = 128)

Description	Min	Max	Mean	Median
Age	20	72	45.3	45
Sex (1 = male, female = 0)	0	1	0.712	1
Race (1 = White, else = 0)	0	1	0.887	1
Current LEO (1 = yes)	0	1	0.828	1
Retired LEO (1 = yes)	0	1	0.164	0
Military experience (1 = yes)	0	1	0.188	0

in five had served in the US military at some point in their career (18.8%).

Intervention

The TR-P is grounded on rapport-building between the individual exhibiting posttraumatic stress symptomology and a 22ZERO treatment provider. The one-on-one sessions start and end with a debriefing, and they can last between 15 and 90 minutes, depending on the level of trauma or number of traumatic incidents that a participant has been exposed to. During these sessions, participants are instructed to make themselves as comfortable as possible in an imaginary safe place. They are not asked to share any details relating to their trauma. Instead, they are asked to see themselves from a third-person point of view and observe the emotions that they are experiencing. In this regard, the TR-P differs strongly from other trauma-based or exposure therapy approaches, which require individuals to confront anxiety-inducing experiences directly and repeatedly. The TR-P encourages participants to focus on the emotional responses to trauma rather than the trauma itself.

The treatment, which was developed and refined by the founders of 22ZERO, consists of a series of imagery exercises aimed at activating multiple unconscious triggers (stimuli that promote emotional responses) during each session. The treatments take place online through a telehealth platform. During the sessions, the trainer first directs the participant to visualize distressing, emotionally neutral, and positive experiences and then follows up with specific questions to gauge the participant's emotional state. Participants narrate the scenarios prompted by the trainer as though observing—rather than living or experiencing—them. The trainer guides the participant through those stages, inducing break states that move participants away from reactionary emotions (emotional responses to triggering events) when needed and drawing them back to a more emotionally regulated state. The TR-P intervention is an iterative process, looping through the participants' parasympathetic responses. This element is necessary because PTSD is associated with diminished parasympathetic reactivity, which results in emotional dysregulation and other deleterious outcomes.[32–34] Participants in this study went through one to four TR-P sessions with a mean (2.02) and median (2.00) of approximately two sessions. Only about one in five participants (20.5%) went through three or four sessions.

Assessments

Both before and after treatment, participants completed three self-administered standardized instruments: the PCL-5, the Generalized Anxiety Disorder 7-item (GAD-7), and the Patient Health Questionnaire-9 (PHQ-9). All three instruments were completed online. The PCL-5 is a self-administered online instrument for measuring the presence and severity of PTSD symptoms.[35–37] The instrument consists of 20 items that are aligned with the core symptoms of PTSD in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Those 20 items are each scored from zero (not at all) to four (extremely) and are used to compute a total PTSD symptom severity score that ranges from zero to 80. One study reported that scores of 31–33 represent an approximate cutoff point for a provisional PTSD diagnosis.[36] Among the 20 items in the PCL-5 are four symptom clusters that align with the DSM-5. These include five cluster B items measuring intrusion, two cluster C items measuring avoidance, seven cluster D items measuring changes in mood and cognition, and six cluster E items measuring arousal and reactivity. A provisional PTSD diagnosis that aligns with the elements listed in the *DSM-5* requires scores of two or higher on at least one cluster B symptom, one cluster C symptom, two cluster D symptoms, and two cluster E symptoms within the past month.[35]

The GAD-7 is a standardized, seven-item instrument for measuring generalized anxiety. Its total score can range from zero to 21. Higher scores on the GAD-7 indicate greater generalized anxiety severity.[38] The PHQ-9 is a standardized nine-item instrument for measuring

TABLE 2. Pretest and Posttest PCL-5 Scores for All Participants (*N* = 128)

Description	Pretest	Posttest
Minimum	4	0
Maximum	77	61
Mean	43.4	7.3
Median	43.0	3.0
Std. dev.	16.2	11.2

depression. Its total score can range from zero to 27.[39] Higher scores on the PHQ-9 indicate greater depression severity.

Statistical Analysis

We relied on standard descriptive statistics to provide a profile of study participants and their self-reported PTSD symptoms. We then used paired *t* tests to examine differences in PTSD symptom severity scores from pretest to posttest for all participants. We conducted additional analyses to determine whether the PTSD symptom severity findings differed for participants meeting the *DSM-5* diagnostic criteria (outlined earlier) for PTSD during the pretest.[35] Finally, drawing on two additional instruments, we tested the effects of 22ZERO on measures of generalized anxiety and depression. All analyses that involved inferential statistics relied on two-tailed tests with an alpha value of 0.05.

RESULTS

As shown in Table 2, total PCL-5 symptom severity pretest scores for the 128 participants ranged from 4 to 77, with a mean and median of approximately 43. Posttest scores for the 128 participants ranged from 0 to 61, with a mean of 7.3 and a median of 3. A paired samples *t* test revealed that the difference between pretest and posttest scores was statistically significant ($t = 23.69$, $df = 127$, $P < 0.001$). In terms of effect size, the difference in means of the total PTSD severity scores is associated with a Cohen's *d* estimate of approximately 2.09, which remains unchanged when Hedges' correction is applied.[40,41] To put this in context, one statistician has described effect sizes larger than two as constituting "huge" effects.[42] Furthermore, the total PTSD symptom severity scores decreased for every participant.

Our next step was to repeat this analysis including only those participants whose pretest PCL-5 scores met the *DSM-5* PTSD diagnostic criteria discussed earlier.[35] At pretest, 107 (83.6%) of participants met these criteria. As shown in Table 3, total symptom severity pretest scores for these 107 participants ranged from 16 to 77, with a mean of 46.8 and a median of 46. Posttest scores for these participants ranged from 0 to 61, with a mean of 7.9 and a median of 3. A paired samples *t* test revealed that the difference between pretest and posttest scores was statistically significant ($t = 24.5$, $df = 106$, $P < 0.001$). In terms of effect size, the difference in means of the total PTSD severity scores is associated with a Cohen's *d* estimate of approximately 2.37, which drops minimally to 2.36 when Hedges' correction is applied. Another way of evaluating the efficacy of the TR-P is simply to look at changes in the percentage of participants meeting the PTSD diagnostic criteria from pretest to posttest. At pretest, 107 (83.6%) of participants met these criteria, whereas at posttest, only 25 (19.5%) met them.

The final step in our analysis was to test the effect of the TR-P on measures of generalized anxiety and depression. The difference between the pre/post *generalized anxiety* scores was statistically significant ($t = 20.3$, $df = 117$, $P < 0.001$). In terms of effect size, the difference in means for these scores is associated with a Cohen's *d* estimate of approximately 1.87, which drops minimally to 1.86 when Hedges' correction is applied. The difference between the pre/post *depression* scores was also statistically significant ($t = 13.8$, $df = 81$, $P < 0.001$). In terms of effect size, the difference in means for these scores is associated with

a Cohen's *d* estimate of approximately 1.52 both with and without Hedges' correction.

DISCUSSION

Our study finds that the 22ZERO TR-P is associated with significant reductions in PTSD symptom severity in a sample of current and former law enforcement officers. This is the first study, to our knowledge, to test the effects of a nontrauma-based PTSD treatment approach on first responders. We not only found that the mean symptom severity score dropped for this sample of law enforcement officers, but the individual scores dropped from pretest to posttest for *every* individual who experienced the treatment. These findings suggest that the TR-P is an efficacious treatment option for reducing PTSD symptom severity among current and former law enforcement officers. It is also associated with significant reductions in generalized anxiety and depression. Moreover, subgroup analyses (not shown) revealed that these effects were consistent across sex (male versus female), race (White versus other), and employment status (current versus former LEO).

Although these results are promising, we caution readers to keep in mind the limitations of this study. First, our analysis is based on a convenience sample of law enforcement officers who sought treatment from one specific treatment provider. It is not a random sample, and therefore we are unable to draw inferences to a larger population. Second, because the participants in this study have close interaction with treatment providers, there is a possibility that the symptom severity scores may be influenced by social desirability bias.[43] Third, the study relied on a nonexperimental pre-post design involving a single sample and therefore is unable to control for a variety of threats to internal validity. Now that this initial pilot study has confirmed the efficacy of the TR-P approach in a sample of current and former law enforcement officers, this treatment protocol should be tested using a more rigorous randomized controlled trial with a longer follow-up period.

Future research should build on this initial pilot study and address these methodological issues to help develop a more robust body of research evidence on the effects of PTSD treatment protocols for first responders that do not involve trauma-based or exposure-based treatments. Furthermore, future research should compare the effects of the TR-P and other treatment modalities on samples drawn from occupations whose employees are at high risk for PTSD. Understanding the extent to which the different treatment options may be more or less effective with different types of clients would represent a significant step forward in our knowledge of how to treat people with PTSD.

In conclusion, PTSD represents a major challenge to the health and wellness of law enforcement officers and other employees in high-risk occupations that involve routine exposure to trauma. A key part of addressing this challenge is to develop a strong body of research evidence on the effectiveness of treatment interventions for people experiencing PTSD symptoms. A range of treatment options is available. Understanding which options are best for different high-risk occupations (military combat veterans, police officers, firefighters, emergency medical technicians, etc.) and for patients who have experienced different types and levels of exposure to trauma is essential for developing and providing the best and most particularized treatment

TABLE 3. Pretest and Posttest PCL-5 Scores for Participants Meeting PTSD Diagnostic Criteria (*n* = 107)

Description	Pretest	Posttest
Minimum	16	0
Maximum	77	61
Mean	46.8	7.9
Median	46.0	3.0
Std. dev.	14.4	11.9

options. This study represents a small but meaningful contribution to the development of that body of research.

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