Treating Trauma in Law Enforcement

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Due to the nature of police work, officers are repeatedly exposed to traumatic incidents that may include motor vehicle accidents, armed conflicts, and witnessing violent death; increasing their risk of PTSD (Marmar et al., 2006). In fact, between 7% and 19% of police officers qualify for a diagnosis of PTSD, and approximately 34% experience symptoms of PTSD, but do not meet a full PTSD diagnosis (Carlier, Lamberts, & Gersons, 1997; Gersons, 1989; Robinson, Sigman, & Wilson, 1997). Individuals with PTSD are more likely to suffer from co-occurring psychological conditions such as depression, social phobia, panic attacks, and substance abuse (Gupta, 2013; Sareen et al., 2007) as well as several negative physical health outcomes such as cardiovascular disease (Coughlin, 2011; Violanti et al., 2006), diabetes (Lukaschek et al., 2013), and chronic pain (McWilliams, Cox, & Enns, 2003; Sareen et al., 2007). It is a disorder that is both pervasive and invasive; therefore it is important to effectively treat PTSD.

This chapter briefly reviews treatment modalities such as cognitive behavior therapy, pharmacotherapy, and eye movement desensitization and reprocessing that, in general have been found to reduce PTSD symptoms in independent research studies (Bisson & Andrew, 2009; Cloitre, 2009). There is less evidence supporting the use of assistance animals, somatic psychotherapies, and yoga, but these treatments show promise and are also discussed (Ogden & Minton, 2000; Ogden, Pain, & Fisher, 2006; Streeter, Gerbarg, Saper, Ciraulo, & Brown, 2012; The Trauma Center, 2007).

Treatment of PTSD

The brain is organized in a hierarchical fashion with cortical structures comprising the highest level. These are responsible for reasoning, abstract thought, language, and perception (MacLean, 1985; Ogden & Minton, 2000). The lower-level, which is composed of the more primitive ancient structures like the limbic system and the R-Complex is responsible for involuntary automatic reflexes in response to perceived danger (MacLean, 1985). Due to this hierarchical organization, when information is non-threatening, higher-level processes can generally affect or override lower-level responses or behavior

through intentional thought and reasoning. For example, one can ignore the signals indicating that one is hungry. Cognitive theory refers to this as “top-down processing;” it is initiated by the cortex and involves purposeful action and thought (Ogden & Minton, 2000). Higher-level functioning monitors and directs lower-level functions. Sensorimotor, instinct, and emotion, on the other hand, is referred to as “bottom-up processing.” The lower level is intimately linked to the higher level and vice versa; both influence the other. This has important implications for treating trauma. For example, pharmacotherapy relies on an understanding of the possible biology behind symptoms, so medication aimed at reducing symptoms is prescribed. Cognitive behavioral therapy and psychotherapy rely on top-down processing to manage bottom-up sensations and feelings through behavioral modification, cognitive distraction, and conscious regulation of thoughts and feelings (Freidman, 2001). Sensorimotor-based therapies, such as sensorimotor psychotherapy and Somatic Experiencing® rely on bottom-up processing to address physical and emotional arousal (Levine, 2010; Ogden & Minton, 2000). Research indicates that certain types of cognitive behavioral therapy may be less effective in the initial stages of trauma when the amygdala is highly activated (Bryant et al., 2005). Individuals also respond to trauma in different ways, therefore while one type of treatment may be effective with some, it may not work for all.

There are a number of psychological interventions currently being used to treat PTSD. It is impossible to include all potential interventions here; therefore we have included brief descriptions of some of the most commonly used interventions that have been shown to reduce symptoms of PTSD in independent research trials. We’ve also included a brief description of somatic psychotherapy, somatic experiencing, and yoga; three treatments that show promise either alone or as adjuncts for treating PTSD. Regardless of the treatment type, most have three basic components which ameliorate symptoms of trauma: 1) helping the client achieve a sense of safety; 2) helping clients process and incorporate trauma memories through the development of a coherent narrative; and 3) helping clients reestablish

social connections (Cloitre et al., 2012; Shapiro, 2002; van der Kolk, McFarlane, & Weisaeth, 1996). Treatments are presented in alphabetical order.

Acupoint Stimulation

Acupoint stimulation has been referred to as emotional freedom techniques (EFT), thought field therapy (TFT), and energy psychology (Feinstein, 2012). During treatment a client is asked to think about the traumatic event while tapping specific points on the body. The theory behind EFT is that thinking about the trauma during acupoint stimulation reduces activation of the limbic system that is specifically tied to that memory (Feinstein, 2012). This, in effect, decouples the physiologic response from the memory allowing the memory to be recognized as having happened in the past. This theory is supported by brain imaging studies and studies that have measured the levels of cortisol, a stress hormone, released in times of extreme stress as well as in response to non-extreme conditions and stressors. Acupoint stimulation along with brain imaging studies have found that stimulation of specific points on the body using needles decreases activity in the amygdala, hippocampus, and other areas associated with the fear response (Feinstein, 2012). Tapping on these same areas in the body has been found to have a similar effect. Tapping has also been shown to reduce the levels of cortisol in individuals (Feinstein, 2012).

A recent review article that assessed the effectiveness of acupoint stimulation indicates that it is effective in treating PTSD (Feinstein, 2012). Three studies evaluated if EFT was effective in treating both adults and children who had been traumatized during the Rwandan genocide. All were determined to have PTSD. In all the groups, pre and post PTSD scores were significantly lower in the groups that received EFT/TFT compared to those that didn't. Similar results have been obtained when a randomized controlled trial was conducted to determine if TFT would be effective in reducing symptoms of PTSD in veterans. In this case, 59 veterans were randomly assigned either treatment or waitlist. Of the 29 veterans who received six, one hour long EFT sessions their PTSD scores dropped from 61.4 to 34.6;

where 50 is the cut-off for PTSD. The control group's score remained virtually unchanged (66.6 to 65.3). The control group was then offered the treatment. Of the 49 veterans who ultimately received six, one hour sessions, 86% no longer had scores high enough to warrant a diagnosis of PTSD (Church et al., 2013; Feinstein, 2012).

Studies that have compared EFT to other established treatments for PTSD found that EFT and eye movement desensitization and reprocessing (EMDR) were both very effective for treating PTSD. Similarly, EFT with cognitive behavioral therapy (CBT) was found to be more effective than CBT alone for treating PTSD symptoms among individuals who had survived an earthquake in China (Feinstein, 2012; Zhang, Feng, Xie, Xu, & Chen, 2011). Although more research needs to be done to confirm and extend these early studies, they do indicate that acupoint stimulation may effectively reduce PTSD symptoms.

Assistance Dogs

Assistance dogs may provide benefits to individuals with PTSD. These benefits come in several forms such as specific work or tasks related to a disability or impairment, assistance to a professional therapist in the therapy process, direct emotional and physical comfort to the individual, and general companionship. Accordingly, individuals with PTSD might benefit from one or more different types of assistance animals including a service dog, therapy dog, support dog, and companion dog (Parenti, Foreman, Meade, & Wirth, in press). A service dog, such as a seeing-eye dog or hearing-ear dog, has been trained to provide work or tasks related to an individual's disability. The disability can be impairment in mobility, physical, or psychological function. However, the contribution of service dogs for psychiatric disorders is a relatively new development that is being supported and promoted by organizations such as the Psychiatric Service Dog Society and the International Association of Assistance Dog Partners (International Association of Assistance Dog Partners [IAADP], 2012; Hart, 2010). An assistance dog is trained in basic or advanced skills to assist a health care or allied health care

professional within the scope of a therapeutic treatment plan. For example, a psychologist or counselor might use dogs in a therapy session to create an opportunity to increase capacity for attachment by the release of oxytocin when the client pets the dog, as well as helping to establish an environment of trust and acceptance (Beetz, Uvnas-Moberg, Julius, & Kotrschal, 2012; Kruger & Serpell, 2010; Mason & Hagan, 1999; Ross & Young, 2009; Stoesz, Hare, & Snow, 2013). A support dog provides physical, psychiatric, or emotional support to individuals primarily in the home. Common labels used for support dogs include emotional support dogs, social therapy dog, skilled companions, and home-help dogs. Although pets may provide similar levels of support, there must be a connection between the owner's disability and the presence of the animal for it to be considered a support animal (Chumley, 2012).

Although well-designed research studies remain to be conducted, there is a considerable body of scientific evidence that supports, at least generally, the notion that interactions between humans and animals can positively impact health and well-being (Barker & Wolen, 2008; Beetz et al., 2012; Fine, 2010; Serpell, 2010). Several studies have evaluated the effects of human-animal interaction on specific behavioral, psychological, and physiological indices, many of which overlap with the criterion symptoms of PTSD. For example, a meta-analysis has found that assistance animals reduce symptoms of depression (Souter & Miller, 2007). Furthermore, dogs can be trained to provide tactile stimulation, which has been found to alleviate distractibility, anxiety, intrusive imagery, dissociation, and flashbacks (Ensminger, 2010). They also stay focused on the handler which can prevent rumination and avoidance behavior. Dogs can be trained to turn on lights and safety check a room to minimize hypervigilance. They can also be trained to interrupt nightmares by waking up the individual and turn on lights to calm and reorient the individual, then turn off lights to help the individual resume sleep (Ensminger, 2010). These studies indicate that assistance dogs may positively affect individuals with PTSD, one way this may occur is by activation of the oxytocin system during human-animal interactions (Beetz et al., 2012; Ross & Young, 2009; Stoesz et al., 2013).

Cognitive Behavioral Therapy (CBT)

CBT is based on the premise that it is not the event, but how a person processes and interprets the event that results in a particular emotional reaction. Along with this reaction is often a basic change in the individual's beliefs from the idea that the world is safe and they are competent, to the idea that the world is unsafe and they are incompetent (Freidman, 2001). The goal of CBT is to address the negative thinking, and instill in the client a sense of safety, reduction of anxiety, and an ability to cope (Freidman, 2001). Prolonged exposure (PE) and stress inoculation training (SIT) are two common forms of CBT that have been used to treat PTSD.

Eye Movement Desensitization and Reprocessing (EMDR)

EMDR is based on an adaptive information-processing model which posits that much of psychopathology associated with disturbing or adverse life events results from the maladaptive or incomplete processing of that event (Shapiro & Maxfield, 2002). Incomplete processing interferes with the individual's ability to integrate the experience in an adaptive manner. Through an eight-phase, three pronged protocol that addresses past, present, and future clinical issues, the client is able to process and assimilate the traumatic memory (Shapiro, 2002; Silver, Rogers, & Russell, 2008). EMDR processing uses a unique set of procedures in which dual focus of attention and alternating bilateral visual, auditory, and/or tactile stimulation are used to help the client process disturbing memories (Shapiro, 2001; Shapiro & Forrest, 2004). As the client processes the trauma over a number of visits, emotional and somatic distress related to the adverse event is decreased or eliminated, individuals often experience an improved view of themselves and there is a resolution of current and future anticipated triggers (Shapiro, 2001; Shapiro & Forrest, 2004).

There is a large body of evidence showing that EMDR is effective for treating PTSD (Cloitre, 2009; Shapiro & Forrest, 2004; Sharpless & Barber, 2011). Meta-analyses found that in both military and civilian populations EMDR worked as well or was more effective than CBT and PE (Cloitre, 2009;

Sharpless & Barber, 2011). EMDR has also been shown to be superior to relaxation techniques, supportive counseling, and treatment as usual (Cloitre, 2009).

Pharmacotherapy

Drug therapy for PTSD is based on our understanding of the biological mechanisms behind the frequency and severity of intrusive/re-experiencing, numbing/avoidance, and hyperarousal symptoms (Stein, Ipser, & McAnda, 2009; van der Kolk et al., 1996). A number of different types of medications have been evaluated for treating PTSD symptoms and include monoamine oxidase inhibitors (MAOI), tricyclics, and selective serotonin reuptake inhibitors (SSRIs), beta-adrenergic blockers, and alpha$_2$-adrenergic agonists (Ipser & Stein, 2012; Stein, Isper, & Seedat, 2009). Of these, SSRIs have been found to be most effective in treating PTSD symptoms (Ipser & Stein, 2012; Stein, et al., 2009). Initial findings also indicate that the noradrenergic reuptake inhibitor venlafaxine and the atypical antipsychotic risperidone may also be effective and warrant further study (Ipser & Stein, 2012; van der Kolk et al., 2007).

The length of time an individual takes the medication has also been shown to be important. Studies found that relapse of symptoms occurred in individuals who took medication for only a short time. For this reason, it is recommended that for individuals with acute PTSD medication be taken for 6-12 months and for those with chronic PTSD at least 12 months (Foa, Keane, Friedman, & Cohen, 2009). Lastly, because most individuals who take medication are also undergoing psychotherapy, the contribution of psychotherapy cannot be overlooked. For example, in a study that compared the effectiveness of EMDR to the SSRI fluoxetine, after eight weeks, 88% of the individuals treated with EMDR and 81% of the fluoxetine treated group no longer met the criteria for a diagnosis of PTSD (van der Kolk et al., 2007). However, six months later, 57% of the individuals treated using EMDR were symptom free compared to none of the individuals treated with fluoxetine (van der Kolk et al., 2007). In general, these results indicate that the use of medication for treating PTSD symptoms can be helpful, but

psychotherapy in which processing traumatic memories is a component, either alone or in combination with medication may be the most effective in leading to symptom remission (Stein et al., 2009). Furthermore, because there is evidence that certain medication (e.g. benzodiazepines) may interfere with the effectiveness of some types of psychotherapy, the use of medication should be carefully considered (Stein et al., 2009).

Prolonged Exposure (PE)

PE incorporates imaginal exposure and systematic desensitization to treat PTSD. In imaginal exposure the client is asked to imagine and recount the details of the traumatic event. This occurs progressively over many sessions. The sessions are audiotaped and the client listens to the tapes at home. As clients continue exposure therapy they report that their anxiety begins to subside and a coherent narrative is developed. Success of this procedure is dependent on emotional engagement, such as fear, but also the ability to regulate emotions so that the client does not feel panic or terror. For clients who have difficulty regulating their emotions, systematic desensitization is often effective (Allen, 2005). In this case, a client tries to maintain a greater state of relaxation while imagining the trauma (Allen, 2005). Numerous studies have shown the efficacy of prolonged exposure for treating PTSD in both military and civilian populations (Foa et al., 2009; Sharpless & Barber, 2011).

Sensorimotor Psychotherapy

Body or sensorimotor processing therapies include sensorimotor psychotherapy, hakomi, and Somatic Experiencing®. Each is a method to help individuals recover from trauma by helping them integrate unassimilated sensorimotor reactions to the trauma (Ogden & Minton, 2000). The theory behind sensorimotor psychotherapy and hakomi is that trauma symptoms are the result of ineffective or interrupted defensive movements while fighting or fleeing a traumatic situation, or when escape is impossible, the result of disorganization and feeling overwhelmed within a persons' nervous system that triggers the freeze response (Ogden & Minton, 2000). Following a traumatic response, the unprocessed

physical movement and disorganized nervous system interfere with an individual's ability to manage different states of arousal. If they stay within the optimal window of arousal they can contain their thoughts, feelings, and physical sensations. People who have unresolved trauma however are often outside this window either in the low arousal zone or high arousal zone. Individuals in the low arousal zone report feeling emotionally or physically numb, they isolate and withdraw from social relations, and report feeling like they are "not in their" bodies, a state referred to as dissociation. Individuals who are highly aroused on the other hand have difficulty sleeping, feel agitated, and are hypervigilant. Individuals with PTSD will often vacillate between these two states. Through the therapeutic relationship the counselor helps clients stay within the window of tolerance as they track and articulate body sensations while describing the traumatic experience or symptoms. As the client processes the trauma they report being able to track and regulate disturbing thoughts and feelings more effectively, have an increased sense of safety, and reduction of PTSD symptoms such as nightmares and hyperarousal. Although there are a number of anecdotal reports from therapists and clients that sensorimotor psychotherapy is effective for treating symptoms of PTSD, independent research studies remain to be performed that will demonstrate how well it works.

Somatic Experiencing® (SE) is similar to somatic psychotherapy and hakomi because it also uses a bottom-up method to address trauma. The theory behind SE is that symptoms of PTSD are the result of our inability to have successfully released vast amounts of energy mobilized to confront the traumatic event specifically when the "freeze" response is engaged (Levine, 2010; Ogden & Minton, 2000). When, due to circumstances, fighting or fleeing are not viable options, or in some cases may result in further risk of injury or death, then the freeze response is a powerful means of defense (Levine, 2010). The freeze response is a natural response that occurs when we are emotionally or physically overwhelmed. The theory behind SE is that the symptoms of PTSD such as hyperarousal, avoidance, difficulty sleeping occur when, the mobilized energy is not effectively discharged preventing our system

from returning to a state of equilibrium and internal balance. To help individuals safely access and release this energy, in effect bringing their body back into a state of equilibrium, SE uses a five stage process that includes becoming aware of and integrating the sensations, images, behaviors, affect, and meaning of the traumatic event.

Two studies have shown that SE can be effective in treating PTSD (Leitch, 2007; Parker, Doctor, & Selvam, 2008). Both studies evaluated how well an abbreviated SE treatment plan worked to alleviate PTSD symptoms in tsunami survivors. In the first study early-intervention therapy referred to as Trauma First Aide was provided to survivors one month following a tsunami in Thailand in 2004 (Leitch, 2007). Fifty-three adults and children volunteered to be treated; all received one or two sessions. After treatment, 90% of the participants reported complete or partial relief from their symptoms which included physical pain, sleep problems, anxiety/agitation, headaches, and flat affect. After one-year, of the twenty-two participants that could be found, 90% reported complete or partial relief from their symptoms (Leitch, 2007).

In the second study, a single 75-minute intervention was performed that consisted of four stages: 1) help the client focus on containing physiological arousal with instructions on how to use this resource on their own following the treatment; 2) build a coherent narrative around the client's experience of the tsunami along with noticing sensations in their bodies; 3) the client was taught about stress and trauma and how it is stored in the body; and 4) the client was guided as they tracked body experiences and changes to resolution (Parker et al., 2008). After weeks, 74.2% of the symptoms were somewhat better, a lot better, or completely resolved. After eight months, 94.4% reported at least a 50% improvement in their symptoms (Parker et al., 2008). These early results suggest that SE is effective in reducing the symptoms of PTSD. Further research with larger populations will be important to confirm and extend these findings.

Stress Inoculation Training (SIT)

SIT was originally used to manage symptoms of anxiety, but was adapted to treat PTSD symptoms in sexual assault victims (Cloitre, 2009; Foa et al., 2009). It is composed of a number of different techniques including muscle relaxation, thought stopping, role play guided self-dialogue, and graduated exposure techniques to address symptoms of PTSD (Cloitre, 2009). SIT has been shown to be effective for treating female sexual assault victims, but research evaluating its effectiveness in treating PTSD symptoms in veterans is limited and inconsistent (Cloitre, 2009; Foa et al., 2009). Further research in larger veteran populations will be important to determine if this therapy is as effective in veterans and other populations, such as first responders, as it is in female sexual assault victims.

Yoga

Yoga is a client-centered practice that incorporates physical postures (asanas), regulated breathing (pranayamas), and meditation (Telles, Singh, & Balkrishna, 2012). It has been suggested that yoga corrects under activity of the Gamma Aminobutyric Acid (GABA) system, thereby restoring homeostasis to the autonomic nervous system, ameliorating symptoms of PTSD (Streeter et al., 2012). A recent review evaluated 11 studies that used yoga to manage trauma associated with combat, natural disasters, interpersonal violence, and being incarcerated (Telles et al., 2012). Among individuals who had experienced a natural disaster, yoga was seen to reduce symptoms of PTSD, anxiety, and feelings of sadness. Similar results were seen among children who had been exposed to combat, terrorism and interpersonal violence. Among young adults who had been incarcerated, individuals who had participated in yoga postures and guided relaxation showed significantly reduced heart rate and breath rate indicating lower physiological stress. Owing to the growing body of research indicating its efficacy in addressing symptoms of trauma, yoga is currently practiced in approximately 29% of Veteran's Administration PTSD treatment programs (Libby, Reddy, Pilver, & Desai, 2012). However, examination of these treatment programs showed wide utilization of these therapies and wide variation in the nature and context in which they were offered, making it difficult to gauge their effectiveness.

Some of the limitations include small participation rates, lack of information concerning the training level of the instructor, and the lack of appropriate control groups. These studies and anecdotal reports suggest that yoga may be an effective adjunctive method for alleviating symptoms associated with trauma and PTSD, however more research is needed to determine the true effectiveness of yoga for treating PTSD (Bussing, Michalsen, Khalsa, Telles, & Sherman, 2012; Telles et al., 2012; The Trauma Center, 2007).

Treatment of PTSD in Police Officers

Police officers routinely have to deal with dangerous, difficult, and highly stressful events, which can lead to the development of PTSD (Marmar et al., 2006; Miller, 1995; Violanti, Paton, & Dunning, 2000). Unfortunately, debriefing, a common practice used by police forces in an attempt to reduce the incidence of PTSD, may increase the risk of PTSD (Miller, 1995; J.M. Violanti et al., 2000). Research also indicates that although these populations would benefit the most from psychological services, they are the least likely to seek these services (Gilmartin, 2002; Hassell, 2006; Violanti, 2007; Wester, Arndt, Sedivy, & Arndt, 2010).

A number of factors affect an officer's willingness to seek counseling. These include law enforcement identity, stigma with counseling, and fear of reprisal (Gilmartin, 2002; Nadler & Fisher, 1986; Pollack & Levant, 1998; Violanti, 2007; Vogel, Wade, & Haake, 2006; Wester et al., 2010). Successful policing expects male and female officers to be detached, unemotional, in control, and investigative, so much so that instilling these attributes are often part of police training (Miller, 1995; Southworth, 1999). A conflict with this training arises when, after a traumatic event, in order to address trauma symptoms, officers need to open emotionally, relinquish control, and engage in the counseling process rather than remain detached (Good, Dell, & Mintz, 1989; Pollack & Levant, 1998). Unfortunately there is also often a stigma attached to seeking help, which is perpetuated by the negative image of both mental illness and obtaining psychological services in western cultures (Corrigan, 2004;

Nadler & Fisher, 1986). Officers may be less likely to seek help because their peer group perceives seeking help as indicative of failure and weakness, or the sign of poor character (Corrigan, 2004; Miller, 1995; Nadler & Fisher, 1986). Because of this, police officers who seek help may be at risk of being labeled unfit for duty, and any diagnosis or having sought psychological services, may end up on their permanent record. Both may affect their job status or ability to get promotions. For this reason, even if an officer recognizes the need for psychological services, the potential consequences deter them from seeking help (Brooks, 2001; Hassell, 2006). Both officers and counselors need to be aware of these potential obstacles to ensure that the officer obtains the most effective treatment with the least risk (Wester et al., 2010). Ideally, a shift in police culture that encourages officers to seek psychological services when necessary will provide them an opportunity to increase their capacity to process traumatic events, develop resiliency, and ultimately become more effective officers.

Summary

The lifetime prevalence of PTSD is approximately 7% - 12% (Keane, Marshall, & Taft, 2006) and in populations frequently exposed to factors related to PTSD such as military personnel and police officers, rates of PTSD can be more than twice those observed in the civilian population (Carlier et al., 1997; Keane et al., 2006). PTSD impacts multiple aspects of an individual's life including their sense of safety, sense of self, self-efficacy, and personal relationships (Allen, 2005; Sharpless & Barber, 2011; van der Kolk et al., 1996; Yehuda, 2002). It has been shown to be associated with a number of co-morbid psychological and physical health conditions (Coughlin, 2011; Lukaschek et al., 2013; McWilliams et al., 2003; Sareen et al., 2007). Because PTSD is so devastating, treating it effectively is imperative. Herein, we have reviewed a number of treatments that have been found to reduce PTSD symptoms. Most treatments have three basic stages in common that have been found to increase treatment efficacy; these include 1) ensuring the client's sense of safety by increasing their capacity to

manage and control physiologic arousal, 2) helping clients process and assimilate the trauma memory, and 3) helping clients reengage in society and social relationships (Cloitre et al., 2012).

As our knowledge and understanding of how PTSD affects us at the cognitive, emotional and sensorimotor level increases, our knowledge and understanding of how best to treat PTSD will also continue to grow. Additionally, any effective treatment must ultimately be centered around a safe, stable environment with strong social support and a therapeutic relationship based on trust.

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