



Continuous Traumatic Stress and the Life Cycle: Exposure to Repeated Political Violence in Israel

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Abstract

Purpose of Review Millions of individuals and families live under continual exposure to threat such as protracted socio-political conflict or community violence facing current and future danger. The construct of continuous traumatic stress (CTS) was suggested as a supplement perspective for the understanding of the specific impact of living under both current and realistic future threat. Yet, the unique parameters, utility, and validity of the construct CTS are underexplored.

Recent Findings Currently, CTS describes both the exposure and the unique clinical conglomerate of distress. In this paper, we first elaborate on the rationale for the construct of CTS. Then, we present evidence on the consequences of exposure to CTS in the Israeli context of continual ongoing and prolonged political violence.

Summary Research on CTS is presented across the life cycle with an emphasis on risk and protective factors from a developmental perspective. We conclude with implications for research, assessment, and interventions.

Keywords Continuous traumatic stress · War · Terrorism · Israel

Introduction

In the current paper, we will first focus on the main questions and various attempts of conceptualization and operationalization of the construct of continuous traumatic stress (CTS): What is the rationale for this additional distinction within the traumatic stress continuum? What does CTS add to the understanding of the broad consequences of trauma? Do the consequences reflect a “dose effect” or do they capture a somewhat different phenomenon that has not been adequately formulated in the existing literature of the traumatic stress continuum? Second, we will review the empirical findings regarding the associated posttraumatic related distress in the specific context of the continuous Israeli–Palestinian political conflict. We will present the evidence on the broad behavioral, emotional, and functional

sequela associated with CTS across the life cycle in this context and critically examine the protective factors from a developmental perspective.

CTS: Exposure Context or Consequences?

The term *continuous traumatic stress* (CTS) was introduced by Straker and the Sanctuaries Counseling Team [1], in the context of protracted political violence in South Africa. In working to treat victims of state repression who had been assaulted, tortured, raped, and forced to flee their homes, the team noticed that therapeutic intervention was inhibited due to the ongoing possibility of threat the victims continuously faced. The construct of continuous traumatic stress (CTS) was proposed by Eagle and Kaminer [2••] as “a supplementary construct within the lexicon of traumatic stress to describe the experience of living in contexts of realistic current and ongoing danger, such as protected political or civil conflict or pervasive community violence” (page 85). However, the notion of CTS has been used in various terminologies in the trauma literature referring, often interchangeably, to both the description of the *exposure context* of stressful events and to the *consequences* of the continued exposure to stressful circumstances, without proper distinction or operationalization. Thus, there is a need for further theoretical clarification, in

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developing consensus on the definition of the concept, measurement and its unique, yet broad consequences.

Several related terms were suggested in the traumatic stress literature to describe the context of continual exposure to threat. Previous research applied the terms *continuous trauma* [3, 4], *cumulative trauma* [5], *ongoing trauma* [6, 7], and *chronic threat* [8]. Kira, Fawzi, and Fawzi [9••] defined CTS as continuous, repeated, and *ongoing exposure* to pathogens and ecology-related trauma, conceptualizing it as type III traumatic circumstance (distinct from type I, single episode trauma, or type II, past repeated similar traumatic episodes). They further argued that ongoing traumatic events have unique effects that may modulate, add to, or amplify the effects of past traumas and increase vulnerability to future traumas.

In the context of protracted political violence in Israel, additional conceptualizations were used to describe the reality of living under present threat with the prospect of future danger including, *ongoing exposure* [10–13], *continuous threat* [14], *continuous traumatic situations* which used the same acronym of CTS [15••], *lifetime cumulative adversity* [16], and *ongoing exposure to political conflict—OEPC* [17]. In this context of ongoing threat, the category of “near miss exposure” was introduced to capture the experience of missing by chance, and often only by a few seconds, the traumatic event, yet visualizing the realistic scenario of being hurt in the near future [18]. Taken together, the use of similar terms aims at characterizing the prolonged, ongoing, and perpetual exposure to danger reflects the need for more precision of specific subcategory of exposure within the broad traumatic stress continuum.

Other scholars operationalized CTS as the broad *consequences* of the exposure including psychological and behavioral functioning that have been shown to be associated with the prolonged and ongoing traumatic stress. Stevens et al. [19] argued that the existing conceptualizations of PTSD and complex PTSD may have limited utility in a reality of continual danger and suggested that CTS can be used for the description of the *psychological impact* of living in conditions in which there is a current realistic threat of, and the potential for, future danger. In the Israeli context, Diamond, Lipsitz, Fajerman and Rozenblat [20••] formulated the term Ongoing Traumatic Stress Response (OTSR) to describe the onset and constellation of symptoms that are less typical of PTSD, arguing that it justifies a unique diagnostic feature that discriminates between these two phenomena. Others emphasized additional regulation deficits, beyond PTSD symptoms, among children growing up under continual threat [21, 22].

PTSD and CTS

The current criteria for posttraumatic stress disorder according to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) specify that the traumatic exposure occurred in the past and is finite [23]. Subsequent post-

trauma symptoms are considered maladaptive “false alarms” or distressing disturbances conditioned by the traumatic event that intrude into the individual’s present [24]. These intrusions occur in the form of heightened reactivity (such as recurring memories, flashbacks, and nightmares of the trauma), changes in cognition of the core-self and one’s relationship to others (such as alienation, self-blame, alexithymia, mistrust, shame, and difficulty finding meaning), alterations in arousal (such as hypervigilance and/or increased sensitivity to potential threat), and emotional withdrawal and shutdown (such as numbing, avoidance of trauma-related stimuli, and dissociation).

Understanding the responses to CTS encompasses a broader clinical picture beyond PTSD [25]. It has been argued that the reaction to CTS may include additional emotional, cognitive, and behavioral phenomena, such as anxiety, helplessness, somatization, depression, and constant concern for the future [26, 27]. Additional domains of impaired functioning were also identified [13, 28], including mental exhaustion, low frustration threshold, and sense of lack of protection [17].

While symptoms of ongoing trauma (e.g., intrusion, hyperarousal, and avoidance) that arise from living in the context of CTS may have negative effects on an individual’s quality of life and functioning, they also have the potential for being adaptive and protective, since the threat of danger remains [17, 20••]. Thus, the judgment and distinction between normal and abnormal distress responses under conditions of ongoing traumatic exposure may be far more complicated [15••]. Diamond et al. [28], for example, argued that both alertness and avoidance, and their concomitant behaviors, can be protective during times of real threat (for example civilians who live in southern Israel under continual missile attacks have 15 s to run to a shelter from the moment of siren onset; alertness to sounds and avoidance of no-shelter areas are therefore extremely valuable). Further, little is known about the effects of temporary relief in the posttraumatic related distress that may result from short periods of time when exposure to threat is discontinued (e.g., spending time out of the range of threat on vacation) [17]. Eagle and Kaminer [2••] also pointed to the phenomenon that CTS is much more likely to remit if the individual is able to escape the dangerous environment, suggesting a more flexible kind of adaptation. There is a need in systematic research on these potential temporary recovery effects and the optimal conditions and timing, which may enhance or impair the bouncing back effect.

Consequences of CTS Throughout the Life Cycle: the Case of Israel

In this section, we will present findings of recent studies (from 2013 to 2019) on the consequences of exposure to CTS in the Israeli context. We address CTS as the objective exposure to prolonged and ongoing political violence rather than the

diagnostic category. We will explore consequences of CTS and risk and protective factors throughout the life cycle.

Consequences of CTS on Children in Their Early Childhood (0–6)

CTS is associated with higher levels of PTSD symptoms and functional impairment among preschool children [29]. A recent systematic review of 35 studies on the consequences of war, armed conflict or terror related exposure, with a total of 4365 infants, toddlers and preschool children [30], revealed several common consequences: prevalence of either full blown *PTSD* or *PTS* symptoms was higher among children exposed to the ongoing Israeli–Palestinian conflict, ranging from 21 to 44.6% (versus 7.8 to 17% among children who were exposed to a single event).

Further research on young children and mothers exposed to political violence compared the context of exposure to war (single event) to the context of continual and ongoing exposure to the threat of terrorism. The consequences of CTS (exposure to terrorism) were far most severe than the associated distress with past trauma (war) [31••]. The prevalence of *internalizing and externalizing problems* was higher among children exposed to CTS as compared to a single-episode exposure. *Anxiety* (reflected in behaviors such as being jumpy, nervous, and easily startled), along with separation anxiety, were also common reactions to acts of political violence [31••], as were *sleep problems* (e.g., refusal to go to sleep alone, nightmares, frequent waking, and sleeping with parents) [30]. Additionally, exposure to acts of political violence had marked impact on the content and affect of *play behavior*, with children displaying repetitive play, re-enactment of events, acting out of morbid themes, and less engagement in fantasy play [30]. CTS can also drastically disrupt a child's capacity for three domains of self-regulation that are crucial to healthy functioning: *sensory modulation disorder* [21], i.e., sensory over responsivity and/or under-responsivity to sensory stimulus [32], *executive functioning problems* [33], i.e., a process that uses a variety of skills to guide behavior in an effortful manner toward a goal [34] and emotion regulation [22], i.e., extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions [35].

Parental distress and psychopathology serve as risk factors for consequences of CTS in young children [36, 37]. For example, a longitudinal study conducted among Israeli mothers and their young children found that the severity of mother's posttraumatic symptoms in the initial phase of the study predicted the severity of mother's posttraumatic symptoms 4 years later; posttraumatic symptoms, in turn, were associated with child's deficits in sensory regulation, behavior problems, and executive functioning [33]. *Positive parenting* including more warmth, support, greater parental efficacy,

involvement, and higher level of control on their children's behavior serve as protective factors [30].

Consequences of CTS on Children and Adolescents

CTS is associated with greater posttraumatic symptoms among children; however, a recent study conducted among children (aged 12–18) living in an area enduring rocket fire and the like found that their levels of *PTS* symptoms were relatively low: only 4% of the children reported severe or very severe symptoms, 12% reported mild symptoms, and 50% did not report any significant symptoms. Authors explained these results by habituation process [38]. Other consequences include *school violence* and *substance use* [39•, 40, 41]. Nonetheless, a recent meta-analysis on 20 studies among Jewish Israelis, Arab Israelis, and Palestinian youth found that the associations between exposure to acts of political violence and PTSD and other emotional symptoms were significantly stronger than between exposure and risk behavior [42•]. A recent review (summarizing 114 articles) on consequences of ongoing political violence on Palestinian and Israeli children and adolescents [43] found other psychological and cognitive effects including lower *self-esteem*, cognitive changes, and *hatred toward* "outgroup". As for *cognitive changes*, a study conducted among 438 Palestinian adolescents from the West Bank questioned consequences of *collective identity salience* (i.e., the status of a group's identity, including sense of personal threat by hate crimes committed against their ethnic group, or the wish to die or kill somebody before their ethnic, or nation group gets harmed), in the context of oppression/collective identity trauma [44]. Authors found that oppression/collective identity trauma directly predicted anxiety, collective identity salience, revenge, and poor physical and mental health (PTSD, depression, anxiety, somatization).

Another recent study, conducted by authors among Arab and Jewish adolescents (in preparation), found relatively high *microaggression*, i.e., ethnic microinsults (verbal and nonverbal behaviors) and ethnic microinvalidations (i.e., unconscious verbal statements in which the perpetrator may have good intentions, but conveys negative messages to people of other ethnic group) [45] especially towards Arabs. For example, 40% of Arabs and only 7% of Jewish adolescents reported that "someone's body language showed they were scared of me, because I'm Arab (Jewish)". Twenty-two percent of Arabs (3% of Jewish) reported that "someone avoided eye contact with me because I'm Arab/Jewish".

As for children and adolescents' exposure to CTS in southern Israel near the border with Gaza, studies show that exposure to missile attacks was associated with children displaying *externalizing behavior problems* [46], *posttraumatic stress symptoms*, *general distress*, and *school violence* [47]. However, posttraumatic stress symptoms and violence showed different paths: the number of missiles the student was exposed to was positively

associated with posttraumatic stress symptoms. In contrast, neither number of missiles nor sense of fear was directly associated with school violence [48•]. In addition, unlike previous studies conducted in intense time-limited exposure [49], posttraumatic stress symptoms and school violence were not related to each other [48•] suggesting that while CTS and intense-time limited events may be related in their consequences, their paths or trajectories may differ. *Substance use* is another consequences of exposure to CTS either directly or through the mediation of PTSD, with associations between CTS and substance use being stronger among Arab adolescents [39•, 49].

CTS also plays a moderating role in the associations between bullying and *suicidal attempts*. A representative sample of Palestinian students ($N=5713$) in the West Bank and East Jerusalem found that higher exposure to armed conflict events predicted higher numbers of suicide attempts, above the effects of sociodemographic and other mental health variables. In addition, exposure to armed conflict moderated the associations between bullying and suicide attempts; both perpetrators and victims of bullying were significantly more likely to report higher number of suicide attempts when exposed to more armed conflict events [50•].

Positive parenting is considered a protective factor among children and adolescents [51–53] while coercive parenting is a risk factor for externalizing behavior problems in the context of CTS [46]. For example, in a study conducted among Israeli children aged 12–14 and their parents living in south Israel, Slone and Shoshani found that maternal (but not paternal) authoritativeness and warmth had moderating effects on the relation between level of exposure to political violence and adolescents' psychological distress; maternal authoritarian parenting style, however, increased the positive relation between level of exposure and adolescents' externalizing symptoms [53]. *School climate* was found as another important protective factor among Israeli high school students who live in south Israel, under constant ethno-political violence [49]. Specifically, a safe school environment and a high level of school facilities as perceived by students are related to less PTSD and to higher levels of posttraumatic growth (i.e., experiencing positive psychological change occurring from attempts to cope with the trauma and its impact) [54]. A *secure attachment style*, although rarely studied in the context of CTS, was also found to be a protective factor against the negative consequences of CTS among adolescents [51]. *Ethnicity*-Arabs and Palestinians are a vulnerable group for psychological distress and risk behavior compared with their Jewish counterpart [43, 55]. The role of *religiosity* is inconsistent: some research studies found it to be a protective factor [43], others did not [56].

Consequences of CTS on Adult Population

PTSD is the most studied consequence of CTS among adults [57]. For example, a study conducted among mothers in south

Israel found that level of exposure to acts of CTS was positively associated with their posttraumatic symptoms [58]. Nonetheless, level of exposure and PTSD symptoms in that study were also positively associated with posttraumatic growth [58], suggesting that the very same situation is associated with negative effects as well as resiliency. Furthermore, in the context of CTS, it is still unknown whether PTSD is associated with greater proximity to events, whether it lasts longer, and whether it includes aspects other than the standard definition and measurements of PTSD. For example, a study conducted among adult Israeli civilians who were assessed during the 2014 Israel–Hamas war at 2 time points (1 week after the beginning of the operation, and 1 month after initial evaluation) found at time 2 that proximity to the border with Gaza Strip was not significantly associated with posttraumatic symptoms, and that posttraumatic stress symptoms declined [59]. Similarly, a longitudinal study examining consequences of CTS on adults exposed to high and medium intensities of rocket fire, found that the regions that were highly exposed to rockets before the escalation, had lower increases in PTSD symptoms during the intensification of rockets attack compared with less exposed regions, suggesting a habituation effect for CTS. In addition, symptom variation was not as much related to the overall level of exposure, but rather more closely related to the current rockets intensity (i.e., an actual threat) [57]. A recent research study among Israeli professionals found that exposure to CTS is associated with much higher rates of posttraumatic characteristics including: increased morbidity, medication overuse, feeling of captivity, betrayal, tendency to get hurt, low frustration threshold, mental exhaustion, and difficulty in *emotion regulation* [17]. CTS is also associated with *sleep disturbances*, which exacerbate PTSD and depression in the long run, as was found in a longitudinal study among 889 Palestinians residing in the Palestinian Authority [60]. Other consequences of CTS include increase in *intimate partner violence* as was found among Palestinian women [61, 62]. Other behavioral consequences described in a recent systematic review that included studies conducted among Jews, Arabs, and the Palestinian territories [63] are *drug use* and *aggressive behavior*. Moreover, greater exposure to CTS was associated with *ethnocentrism*, Palestinians' (but not Israelis') threat perceptions, Palestinians' and Israelis' *fear/hatred and negative stereotypes toward the out-group* [26, 63–65]. CTS is also indirectly associated with *alcohol use*. Specifically, a study using a representative sample of Jewish and Palestinian adults in three waves found that CTS was associated with PTSD and depressive symptoms, and they in turn were associated with increase alcohol use [66]. Thus, CTS may have wider and more intensive consequences than a single act of political violence.

Social support, provided through social interactions or relationships with individuals or cohesive communities such as KIBUTZIM [67], is considered a major external resource and

protective factor in the context of intense time-limited exposure to acts of political violence [67]. For example, a representative sample among Jewish and Palestinian adults found that social support from family and friends was associated with lower level of depressive symptoms in a context of political violence [68]. However, this may not be the case with CTS. Specifically, a study conducted among adult Israeli civilians assessed during the 2014 Israel– Hamas war at 2 time points (1 week after the beginning of the operation and 1 month after initial evaluation) found that although social support was high at both assessment points with no significant change, no associations between social support and posttraumatic symptoms were found. Authors explain this unexpected finding by the specific context of CTS: when a community of people are constantly under attack, they all share the same threat and thus their support can no longer serve as a resource [59]. *Problem-focused coping* strategies were found to be positively related to posttraumatic growth among mothers residing in high CTS area [58]. *Ethnicity*-Arabs and Palestinians are vulnerable groups for psychological distress and risk behavior compared with their Jewish counterparts [43, 55].

Consequences of CTS on the Elderly Population

Very few studies addressed consequences of CTS in the elderly population in Israel [67, 69–71]. Those that were conducted revealed that CTS (i.e., ongoing rocket attacks in southern Israel) was associated with higher PTSD symptom level than intense time-limited exposure (i.e., 2nd Lebanon war). Moreover, in CTS, higher level of PTSD was related to greater physical and cognitive health problems including heart disease, stroke or cerebral vascular disease, diabetes or high blood sugar, chronic lung disease, Parkinson disease, and hip fracture or femoral fracture. Thus, CTS may lead to a hastened aging process. In contrast, in intense time-limit exposure, higher level of PTSD was associated with greater mental health rather than physical health problems [71, 72].

Higher socioeconomic status and living in more cohesive community (Kibutzim) were found as protective factors [73]. *Older age* is a risk factor for posttraumatic symptoms in CTS [70] but not in a single act of political violence [74]. *Better health* condition was found as a protective factor [75]. *Sense of danger* is another risk factor for PTSD in the context of CTS [43, 76]. Religiosity is considered a risk factor in this age group and is associated with higher level of death anxiety [55].

Concluding Remarks

The promising construct of CTS warrants further investigation. More clarification, operationalization, and differentiation with regards to its definition and assessment are required. The question of whether CTS describes the *exposure context* or the

classification of one of the potential *post* (and *peri*)-*trauma adaptation* responses and trajectories remains unanswered. Further, there is lack of consensus regarding the unique aspects of the related distress, its specificity and generalizability to diverse cross-cultural contexts.

The studies on CTS in the Israeli context, reviewed in this paper, do not provide conclusive evidence for the Allostatic Load hypothesis nor for the habituation model. The term of Allostatic Load explains the detrimental effects of cumulative trauma leading to the dysregulation of multiple physiological systems [77]. Some of the early childhood studies provided supportive evidence that accumulation of traumatic events resulted in exacerbation of emotional distress [31, 42]. However, other research [38, 57] was consistent with the notion of habituation to continual exposure to trauma and threat.

Our review also showed that consequences of CTS, as well as the variety of protective and risk factors examined, are often perceived within a narrow developmental stage, rather than across the life cycle. For example, risk behaviors such as substance use are often examined among adolescents, failing to identify these similar risk behaviors in later age and the elderly. The paucity of research on the consequences of CTS on older adults is apparent and this age group deserves more attention.

A useful clinical concept that is highly relevant to CTS, not reviewed in this paper, is *survival mode*. Survival mode describes the mechanism that rules human functioning when people perceive existential danger; it is characterized by a cascade of neurobiological responses that are interrelated in complex ways and involves increased release of cortisol, epinephrine, and oxytocin which prepare the organism for emergency and fight or flight responses [78, 79]. However, if the perception of threat is not abated, and moreover, if danger can realistically return without prior warning, the arousal regulation may lose its flexibility and its effectiveness. The toll of prolonged survival load can be exhaustion and accumulated damage to various bio-physiological systems and needs to be further explored.

Evaluation of consequences of living under CTS should be broadened to encompass the vast impact of continual survival mode on various bio-physiological systems throughout the life cycle and to include biological markers and neuro-physiological responses (such as elevated arousal and cortisol levels) alongside other moderating and mediating psychosocial factors. Future research needs to integrate the various ecological circles with longitudinal perspective to examine differential adaptation trajectories to CTS. Additionally, the role of intergenerational transmission of stress and threat in CTS need to be further explored.

Guidelines for intervention should incorporate *continuity of services* which will be available to the individual and community in both routine and emergency time. These services need to offer specific modules for pre-disaster preparedness, early

intervention, post-disaster services as well as long-term follow-up and monitoring. The scope of comprehensive system of care for people and communities living under CTS should apply a broad perspective beyond symptomatic relief and integrate educational efforts to protect children and multi-generational families from the toll of continual traumatic stress. The growing awareness that CTS may serve as an enhancer to extreme attitudes and behaviors, including intergroup violence and micro aggression towards others perceived as threatening, highlights the pressing need for effective prevention and interventions. Other emphases should be put on providing treatment for a broad spectrum of difficulties in cognitive and attention regulation, sensory regulation, and interpersonal violence in addition to posttraumatic symptoms and anxiety.

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Compliance with Ethical Standards

Conflict of Interest Ruth Pat-Horenczyk and Miriam Schiff each declare no potential conflicts of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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