



CONSEQUENCES OF CHRONIC INTRA-FAMILY ABUSE IN CHILDHOOD: DEVELOPMENTAL TRAUMA

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Los traumas tempranos y repetidos en el contexto de las relaciones de apego impactan de una manera dramática en el desarrollo de los niños/as, generando una diversidad de manifestaciones psicopatológicas complejas, que se incluyen en la última versión de la Clasificación Internacional de Enfermedades (CIE-11) como un diagnóstico nuevo denominado Trastorno por Estrés Postraumático Complejo (TEPT-C). Los objetivos del presente trabajo fueron, por un lado, ofrecer una revisión de la sintomatología postraumática que se desarrolla por la exposición a estos eventos traumáticos, y, por otro, recapitular la evidencia empírica existente del TEPT-C o Trastorno Traumático del Desarrollo (TTD). Los resultados de los estudios revisados confirman la presencia de síntomas extensos y heterogéneos, así como graves alteraciones en la autorregulación (afectiva, cognitiva y conductual), que se ajustan a un TEPT Complejo o TTD, por lo que los datos existentes apoyarían la validez de dichos diagnósticos.

Palabras clave: Trauma complejo, Trastorno Traumático del Desarrollo, Maltrato.

Repeated and early attachment trauma has a huge impact on children's development, producing a wide range of psychopathology, which is included as a new diagnosis called complex posttraumatic stress disorder (CPTSD) in the 11th revision to the World Health Organization's International Classification of Diseases (ICD-11). The aim of this study is to provide a review of the posttraumatic symptomatology caused by exposure to complex traumatic events and to synthesize the existing empirical evidence on CPTSD and developmental trauma disorder (DTD). The results of the reviewed studies confirm the presence of extensive and heterogeneous symptoms, as well as serious affective, cognitive, and behavioral self-regulation alterations, which correspond to complex PTSD or DTD. Therefore, the current data support the validity of these diagnostic proposals.

Key words: Complex trauma, Developmental trauma disorder, Abuse.

The concept of trauma refers to the consequences of exposure to personal experiences that pose a threat to our survival or well-being. Reactions to adverse life situations are very diverse and varied. Allen, Fonagy, and Bateman (2008), proposed a particularly relevant classification for organizing potentially traumatic events according to the nature and interpersonal involvement of the stressor. They differentiate between *impersonal stressors* (e.g., natural disasters); *interpersonal stressors*, when the stressor comes from the deliberately intentional or reckless behavior of another human being (e.g., accidents, community violence, or war); and stressors that appear *in the context of attachment relationships* (attachment trauma). That is, all situations of violence and neglect to which a child is exposed in the context of his or her basic primary care (e.g., physical and emotional abuse, sexual abuse, neglect, abandonment, or direct witnessing of violence between parents).

It has been confirmed that repeated experiences of abuse

during childhood act as habitual stressors, and generate lasting dysfunctions in the main neuroregulatory systems, such as the hypothalamic-pituitary-adrenal axis, and significant physiopathological consequences (Boeckel, Viola, Daruy-Filho, Martínez, & Grassi-Oliveira, 2017), as well as alterations in the development of fundamental brain structures (Rooij et al., 2020; Teicher & Samson, 2016). This is related to the presence of deficits in cognitive functioning and difficulties in affective and behavioral self-regulation, which implies a greater risk for developing academic problems and multiple psychopathologies (Karam et al., 2014; Perkins & Graham-Bermann, 2012).

In this regard, Cook et al. (2005) noted that such traumas are characterized by being chronic, interpersonal, early-onset, and affect all areas of functioning. For decades, there has been evidence of the inadequacy of the PTSD diagnosis to explain the wide range of symptoms resulting from these traumas (Herman, 1992). The percentage of children who develop PTSD, according to official criteria, after exposure to complex traumas is low and most meet the criteria for many other diagnoses such as separation anxiety disorder, oppositional defiant disorder, ADHD, or depression (Humpherys et al., 2020; Klasen, Gehrke, Metzner, Blotevogel, & Okello, 2013; Scheeringa & Zeanah, 2008),

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various subclinical symptoms or emotional and behavioral disturbances, which are very frequent in minors in care with mental health problems (González-García et al., 2017; Martín, González-García, Fernández del Valle, & Bravo, 2020).

The concept of complex post-traumatic stress disorder (CPTSD), was originally proposed by Herman (1992), with the aim of providing an alternative diagnosis for survivors of repeated and prolonged traumatic exposure, whose most severe symptoms were different from those listed in the diagnoses for PTSD in the DSM. CPTSD describes, more completely and appropriately, the psychopathology resulting from exposure to complex trauma in adults, and includes a set of symptoms that reflect serious disturbances in affective, cognitive, and behavioral self-regulation in minors (Courtois, 2004). These are expressed in alterations in six domains of functioning: impulse and affect regulation, attention and awareness, self-perception, relationships with others, somatization, and systems of meaning (Van der Kolk, 2005; Van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005).

This new construct was not recognized in the DSM-IV (APA, 1994), nor in its Revised Text (APA, 2000), as a disorder other than PTSD, but as “disorder of extreme stress not otherwise specified” (DESNOS). Although it gained empirical support (Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013; Van der Kolk et al., 2005, Karatzias et al, 2018), it was not included in the latest version of the DSM (APA, 2013). Recently, the ICD-11 (WHO, 2018) has confirmed it as a diagnosis, specifying that it must meet the requirements for

PTSD, in addition to serious and persistent problems in the regulation of affect; self-beliefs of disability and worthlessness, feelings of shame, guilt or failure related to the traumatic event; as well as difficulties in maintaining relationships and feeling close to others.

Since the mid-90s, studies on the consequences of abuse in the family environment have multiplied in the child and adolescent population, with the diagnosis of CPTSD being considered as a diagnostic option almost a decade later.

Abuse is associated with symptoms of re-experiencing, avoidance, and hyperactivation (PTSD) in minors, however, it does not seem that the diagnostic criteria are appropriate for children either, as few meet all the criteria, and the prevalence increases when alternative criteria are used (Fernandez, 2014; Martinez, 2015; Scheeringa et al., 2003).

Van der Kolk et al. (2005, 2009) postulated developmental trauma disorder (DTD), for complex trauma in childhood. DTD includes multiple symptoms in different areas (attachment, biology, affect regulation and self-regulation, awareness, behavior control, cognition, and self-concept), which often result from repeated exposure to interpersonal trauma in childhood (Cook et al., 2005), (Table 1). (Insert Table 1)

A central element in the impact of abuse in the first years of life is based on the alterations in the attachment system between caregiver and child. As indicated by Galán (2020), protection and care against external and internal dangers, and for communication and interpersonal relationships, is decisive.

Studies on CPTSD in minors in care indicate mental health problems in all the evaluated domains and symptoms of post-

TABLE 1
DIAGNOSTIC CRITERIA DEVELOPMENTAL TRAUMATIC DISORDER

- A. **Exposure.** Has experienced or witnessed multiple or prolonged adverse events for at least one year beginning in early childhood/adolescence, including A.1. Direct experience or witnessing of repeated and severe episodes of interpersonal violence A.2. Significant disruptions in basic care as a result of repeated changes or repeated separation from the primary caregiver, or exposure to severe and persistent emotional abuse.
- B. **Affective and physiological deregulation.** Exhibits impaired normal developmental competencies related to arousal regulation, including at least two of the following items:
 - B.1. Inability to modulate, tolerate or recover from extreme emotional states (fear, anger, shame), including severe and prolonged temper tantrums or immobilization
 - B.2 Disturbances to regulation of body functions (e.g., persistent disturbances in sleep, feeding, and sphincter control; hyper/hyporeactivity to touch and sound; disorganized transition between routines).
 - B.3 Diminished consciousness/recognition or dissociation of sensations/emotions/body states (depersonalization, derealization, discontinuity of affective states, emotional numbing, physical analgesia, and difficulty in recognizing emotions).
 - B.4 Difficulty in describing emotions/body states (inner states or communicating needs - hunger or evacuation/elimination).
- C. **Attentional and behavioral deregulation.** Exhibits deterioration of normal developmental skills related to maintaining attention, learning, or coping with stress, including at least three items:
 - C.1 Worrying about the threat, or difficulty in perceiving it, including misinterpretation of safety/danger signals
 - C.2 Impaired capacity for self-protection, including risk-taking or emotionally intense behaviors (risky sexual behaviors, impulsive disregard, underestimation of risk, difficulty understanding rules, for behavioral planning and anticipation of consequences).
 - C.3 Misaligned attempts at self-calming (rocking, other rhythmic movements, compulsive masturbation, substance use).
 - C.4 Habitual (intentional/automatic) or reactive self-harming (cutting, head-butting, burning, pinching)
 - C.5 Inability to initiate/maintain goal-directed behavior (difficulties in planning/completing tasks, abulia).

traumatic stress, emotional and behavioral difficulties, as well as risk behaviors and difficulties in daily functioning (González-García et al., 2017; Martín et al., 2020).

The aim of this work was to carry out a review of the empirical research on the psychological consequences of interpersonal trauma in childhood, adolescence, and early youth, as well as to analyze the validity of the new diagnosis of complex trauma.

METHOD

A qualitative literature review was conducted, although some of the proposals for systematic reviews and meta-analysis were taken into account (Moher, Liberati, Tetzlaff, & Altman, 2009).

Search and selection strategy

An electronic search of the literature databases in health sciences was completed, including: Tripdatabase, PSICODOC, MedLine, ScienceDirect, PubMed, PsycINFO, PscARTICLES, and Web of Science. It was limited to the

empirical studies available in full text, published in English and Spanish between January 2005 and March 2020.

The search terms were: "trauma complejo", O "trastorno por estrés postraumático complejo", O "trastorno traumático del desarrollo", O "trauma del desarrollo", O "maltrato infantil" in Spanish. "Complex trauma", OR "complex posttraumatic stress disorder", OR "complex PTSD", OR "developmental trauma disorder", OR "child maltreatment", OR "child abuse" in English. In addition, multiple advanced searches were conducted including the combination of two or more terms (e.g., «trauma symptoms or posttraumatic effects AND child abuse/childhood neglect»).

Any empirical study (randomized control trial (RCT), quasi-experimental, cross-sectional, or longitudinal; case-control or cohort) was considered for inclusion if it reported post-traumatic symptoms and/or complex effects, or other post-traumatic consequences, resulting from exposure to traumatic events of an interpersonal nature, including sexual, physical, and emotional abuse, and neglect, as well as witnessing domestic, intimate partner, or anti-women violence. The

TABLE 1
DIAGNOSTIC CRITERIA DEVELOPMENTAL TRAUMATIC DISORDER (continuation)

- D. Deregulation of the self and relationship. Exhibits deterioration of normal developmental competencies related to personal identity and involvement in relationships, including at least three of the following items: D.1 Intense concern for the safety of the caregiver or significant others (including an early caring attitude toward others) or difficulty in tolerating re-encounter with them after a separation. D.2 Persistent negative self-concept/sense, including feelings of self-hatred, helplessness, feelings of worthlessness, ineffectiveness, or defectiveness. D.3 Extreme and persistent distrust, defiant behavior or lack of reciprocity in close adult/peer relationships (includes expectation of being victimized by others). D.4 Physical reactivity or verbal aggression (impulsive, unintentional coercive/manipulative) toward peers/caregivers/other adults. D.5 Inappropriate (excessive/promiscuous) attempts at intimate contact (including but not limited to physical/sexual intimacy) or excessive dependence on peers/adults in pursuit of safety/reassurance. D.6 Impaired ability to regulate empathic activation (lack of empathy, intolerance, or excessive response to the expressions of stress/disturbance of others)
- E. Post-traumatic Symptom Spectrum. Exhibits at least one symptom in at least two of three clusters (B, C, and D) of PTSD symptoms
- F. Duration of the disorder (Criteria B, C, D, and E): at least 6 months
- G. Difficulties or functional impairment. Causes clinically significant discomfort or impairment/disability in at least two areas:
 SCHOOL: low performance or dropout, discipline problems, non-attendance, conflicts with teachers, learning problems (not explained by neurological disorder).
 FAMILY: conflict, avoidance/passive, running away, detachment, finding substitutes, attempts to physically/emotionally harm family members, failure to meet family responsibilities.
 PEER GROUP: isolation, persistent physical/emotional conflict, violence or unsafe acts, age-inappropriate interaction/affiliation styles
 LEGAL: arrests/recidivism, convictions/prison, violation of probation, increase in seriousness of crime, crimes against others, disregard for law or moral conventions.
 HEALTH: physical illness or problems that cannot be explained by physical injury or degeneration, including digestive, neurological (conversive symptoms, analgesia), sexual, immune, cardiopulmonary, proprioceptive/sensory, severe headaches or chronic pain/fatigue.
 VOCATIONAL (applicable to youth seeking employment or working): disinterest in work/vocational training, inability to obtain/maintain employment, persistent conflict with co-workers or supervisors, underemployment in relation to skills, inability to advance.

Note: Taken from Van der Kolk et al. (2009)

emphasis was on early and long-term experiences of abuse by primary caregivers. In addition, the representative sample had to be between the ages of 0 and 25 ($N \geq 30$).

Grey literature (e.g., theses, book chapters, letters to the editor, and theoretical/opinion papers), systematic reviews, and meta-analyses were all excluded.

An initial compilation of all article titles and abstracts was made, and a full text selection was carried out for all results that met the inclusion criteria.

Data Extraction

The following data were extracted from each study: (a) number of participants; (b) age range; (c) type of childhood trauma; (d) presence of trauma or multiple traumas repeated over time; and (e) effects of trauma and diagnosis.

RESULTS

In all the studies reviewed, the results showed the presence of symptoms compatible with complex post-traumatic reactions in a large percentage of the children who had suffered some serious form of abuse during childhood. Spinazzola et al. (2005), López-Soler (2008), Van Meter, Handley, and Cicchetti (2020), and Villalta et al. (2020), specifically reported alterations in the regulation of affect and interpersonal relationships, core symptoms in complex trauma. In addition, López-Soler (2008) found that hopelessness and ambivalence in relationships also predominated, which is related to attachment problems. Other authors reported alterations, symptomatology, or joint diagnosis of PTSD and DTD (Spinazzola, Van der Kolk, & Ford, 2018; Stolbach et al., 2013; Van der Kolk, Ford, & Spinazzola, 2019), while other research detected serious emotional and/or behavioral alterations in different groups of minors exposed to intra-family abuse from early stages (López-Soler et al., 2012; Wamser-Nanney & Vandenberg, 2013), as well as internalizing and/or externalizing problems (Geerson, et al., 2011; Graham-Bermann, Castor, Miller, & Howell, 2012; Lansing, Plante, Beck, & Ellenberg, 2018; Martin et al., 2020; Tarren-Sweeney, 2013). In all of these and in other works (e.g., Kiesel et al., 2014), difficulties in daily functioning in different areas (school, leisure, peer relations, etc.) were also observed. This problem was expressed throughout childhood to early youth (Beal et al., 2018; Porto-Faus, Leite de Moraes, Reichenheim, Borges da Matta, & Taquette, 2019) or adult life (Delgi-Espositi, Pinto, Humpherys, Sale, & Bowes, 2020), in people who had suffered different types of abuse.

Wamser-Nanney and Vandenberg (2013), compared symptoms in minors exposed to interpersonal violence, who had suffered interruptions in protection and care, with those exposed to other types of trauma, and confirmed that the first group presented more behavioral problems such as anxiety, depression, dissociative symptoms, anger/aggression and difficulties of a sexual nature.

Research on children exposed to violence against their mothers by their partners or ex-partners has shown an increased risk of becoming victims of other serious traumatic

events, including physical and sexual assault, which contributes to the increased rate of diagnosis of PTSD and other internalizing and externalizing symptoms (Alcántara, López-Soler, Castro, & López, 2013; Graham-Bermann et al., 2012). In children and adolescents with severe and chronic trauma, a high comorbidity of other alterations different from PTSD was observed, which are part of the dysregulation symptoms present in CPTSD, related to deficits in executive functions (Op den Kelder et al. (2017).

Studies comparing minors with a history of trauma, according to DTD exposure criteria, with other types of traumatic experiences, confirmed substantial clinical differences between the two groups, with the former having a higher probability of alterations typical of childhood CPTSD or DTD (Cloitre et al., 2009; McClelland et al., 2009; Stolbach et al., 2009; Stolbach et al., 2013; Zhang, Zhang, & Ding, 2019). Children in care compared to children who have suffered equivalent abuse, but are not separated from their parents or one of their parents, also develop complex trauma, but the evolution and complications of this trauma are more severe in children in care (Zhang et al., 2019). Spinazzola et al. (2018), reported that DTD and PTSD are associated with assault and/or physical abuse, family violence, emotional abuse, neglect, and disabled caregivers. Teenage victims of sexual abuse showed high prevalence of DTD as well as PTSD (Villalta et al., 2020). Studies confirm that both types of post-traumatic reactions present high comorbidity (See Table 2).

CONCLUSIONS

Mistreatment, abuse, and abandonment during childhood can be considered traumatic events that interrupt the normal cerebral development and that can even produce considerable modifications in some cerebral structures. These neurobiological effects seem to play a relevant role, together with other environmental and genetic factors, in the later development of several psychopathologies, both in the short and long term.

The results of the studies reviewed support the enormous traumatic potential of events occurring in the everyday context of attachment relationships, which involve non-existent or inappropriate care and protection of minors by responsible adults. Research has found evidence that these types of traumatic events generate, in both adults and minors, a diversity of psychopathological manifestations that exceed the exclusive symptomatology of PTSD, and that affect affective, cognitive, and behavioral regulation.

With the aim of improving the diagnosis of the impact of complex traumas, two new diagnostic proposals emerged, that of CPTSD and DTD, equivalent to complex PTSD, but specific to the child population. Since then, abundant scientific evidence has accumulated to support the consistency, validity, and clinical utility of these diagnoses (Achterhof, Huntjens, Meewisse, & Kiers, 2019; Ford, Spinazzola, van der Kolk, & Grasso, 2014), which has led to the inclusion of complex PTSD in the ICD-11 (WHO, 2018).

In minors, the diagnosis of DTD allows us to verify the impact

TABLE 2
STUDIES REVIEWED ON SYMPTOMS COMPATIBLE WITH PTSD OR DTD IN THE INFANT POPULATION

Study	Sample	Results
Spinazzola et al. (2005)	N = 1699 Age: 2-21 years, NCTSN. Multiple victims/prolonged severe trauma (physical and/or psychological abuse, exposure to domestic violence, sexual abuse or neglect) at an early stage	Over 50% alterations 6 CPTSD domains: affect regulation, information processing, self-concept, behavior, interpersonal relations, and biology.
López Soler (2008)	N=44 Age: 6-15 years old. Children in care who had suffered repeated experiences of domestic abuse.	Over 50% complex PTSD indicators: alterations in affect/impulses, awareness, in the relationship with caregivers/educators/peers, distortions in self-perception/perception of abusers, depression, anxiety, self-harm, substance abuse, risk behaviors, and hopelessness.
Cloitre et al. (2009)	N = 152 (clinical) Age: 3-17 years old. Victims of sexual abuse, neglect, emotional and physical abuse, witnessing partner violence. They lived with substitute caregivers.	Exposure to cumulative trauma predicted the complexity of the symptoms.
Kiesel et al. (2009)	N = 4272 Age: 0-18 years old. Illinois children in care services. 1. Children suffered trauma (≥ 2) perpetrated by primary caregivers. 2. They had experienced trauma that did not meet all of the above criteria.	G1 greater number of PTSD symptoms, emotional and behavioral difficulties, risk behaviors, and functional impairment.
Greeson et al. (2011)	N=2251 Age: 0-21 years old. Children in care who had experienced 5.8 (average) complex traumatic events.	Exposure to complex trauma predicted behavioral problems, internalizing, PTSD symptoms, and various clinical diagnoses.
López Soler et al. (2012)	N=42 Age: 6-16 years old Children in care, exposed to situations of chronic intra-family abuse.	High trait sensitivity, anxiety, and anger; depressive symptoms; and low anger control.
Graham-Bermann et al. (2012)	N=120 Age: 4-6 years old Gender violence and other types of domestic violence.	38% of minors exposed to gender violence suffered other traumatic events within the family (physical and sexual abuse). They presented more PTSD symptoms and internalizing/externalizing problems.
Alcantara et al. (2013)	N=91 Age: 6-17 years old Gender violence.	Internalizing (anxiety/depression, withdrawal, somatic complaints) and externalizing problems (aggression)
Stolbach et al. (2013)	N=214 Age: 3-17 years old. 1. Children with A-DTD criteria. 2. Controls: did not meet these criteria.	31% G1 met full DTD diagnostic criteria, versus 6% G2. 97% G1 met PTSD criteria Significant inter-group differences in 11 of 15 DTD symptoms.
Tarren-Sweeney (2013)	N=347 Age: 4-11 years old Children in care, different degrees of mistreatment.	Attachment problems. 35% subclinical internalizing/externalizing alterations; 20% complex symptoms related to attachment and trauma.
Wamser-Nanney & Vandenberg (2013)	N=336 Age: 3-18 years old. 1. Children with A-DTD criteria 2. Control (no A-DTD criteria)	G1 more behavioral problems, anxiety, depression, dissociative symptoms, anger/aggression, and sexual difficulties. No significant inter-group PTSD differences.
Kiesel et al. (2014)	N=1823 Age: 0-20 years old. NCTSN children in care. 1. Victims of trauma perpetrated by primary caregivers 2. Trauma not perpetrated by primary figures.	G1 increased risk of occurrence/severity of clinical/functional problems: PTSD, dissociation, depression, attachment problems, academic problems, ADHD, suicide/self-harm, substance abuse, sexualized behaviors, and criminality
Hengartner et al. (2015)	N=1170 Age: 20-41 years old Exposed to a traumatic event in childhood	Anxious personality associated with emotional abuse; extraversion, emotional abandonment, and affability to emotional neglect.
Carliner et al. (2016)	N=9956 Teenagers: 13-18 years old. Domestic violence	Sexual abuse, emotional neglect, and adverse home environment predicted symptoms of depression, PTSD, and self-injurious behavior.
Marshall (2016)	N=2899 Girls: 13-18 years old.	Potentially traumatic events in childhood were associated with the risk of illicit drug use and various disorders in adolescence.

of events in attachment that determine problems in achieving normal evolutionary competences related to central aspects of the children’s development, and prevents them from functioning satisfactorily in the different areas of their life and mental well-being.

The implications for the evaluation, diagnosis, and improvement of the efficacy and effectiveness of psychological treatments are very important. The impact is not only clinical, but also covers crucial aspects of attachment and conditions of care and adoption, since the previous emotional ruptures and new conditions of care and protection, as well as the post-traumatic conditions of the child, allow a better understanding of the difficulties in the procedures of national and

international fostering and adoption, as the whole system of emotional relationships is modified. The understanding of complex trauma allows and requires the generation of a specific reference framework in the psychological treatment of children exposed to abuse and neglect by their caregivers.

CONFLICT OF INTEREST

There is no conflict of interest.

REFERENCES

References marked with an asterisk (*) contain the studies included in the review:

TABLE 2
STUDIES REVIEWED ON SYMPTOMS COMPATIBLE WITH PTSD OR DTD IN THE INFANT POPULATION (continuation)

Study	Sample	Results
Wong et al. (2016)	N=389 Age: 13-25 years old. Homeless children.	Interpersonal violence was associated with externalizing symptoms and PTSD symptoms. They were positively related to each other and developed together over time.
Barboza et al. (2017)	N=280 Age: 8-15 years old. Abused youths in care	Living a traumatic event during puberty predicted anxiety disorders, during pre-puberty depressive disorders, and that the trauma would be recurrent and/or during primary education predicted PTSD diagnosis.
Hyland et al. (2017)	N=171 persons exposed to trauma	Validation of the ICD-11 PTSD-CPTSD, through criterion variables.
Op den Kelder et al.	N=119 Age: 9 -17 years old. PTSD group (n=41); complex trauma group (n=38) and control group (n = 40)	Young people exposed to complex traumas are more deficient in executive functions than young people with PTSD or control.
Beal et al. (2018)	N=151 Age: 16-22 years old Children in care, victims of unexpected tragedies, instability, or family violence	Family violence was associated with poorer psychological well-being and quality of life, family instability, and tobacco/marijuana use.
Lansing et al. (2018)	N=107 Age: 16-18 years old. Domestic violence.	Physical abuse made internalizing and externalizing syndromes more likely in boys; and emotional abuse made externalizing syndromes more often in girls.
Spinazzola et al. (2018)	N=236 Age: 7-18 years old. Multicultural sample. Community/intra-family family violence.	DTD is associated with family/community violence and caregiver disability; PTSD is associated with assault/physical abuse.
Porto-Faus et al. (2019)	N=699 Age: 15-18 years old. Domestic violence.	Emotional and sexual abuse and physical neglect increase adolescent violence/delinquency. Physical abuse and emotional neglect are risk factors.
Van der Kolk et al. (2019)	N=236 Age: 7-18 years old. Community/family violence; other traumas	PTSD and DTD are highly comorbid. DTD comorbidity with panic disorder, conduct disorder, SAD, and ADHD. PTSD comorbidity with major depression and GAD.
Zhang et al. (2019)	N=382 Age: 13-18 years old. Chinese children (182 abandoned by their parents and 200 living with them).	At the beginning of the abandonment there are no emotional or behavioral differences. Later, abandoned children develop DTD.
Delgi-Espositi et al. (2020)	N=8088 Longitudinal study (measurement from 7 to 50 years old) Intra-family abuse	Experiencing multiple types of abuse increased the risk of antisocial behavior in childhood and adulthood.
Villalta et al. (2020)	N=99 girls, victims of sexual assault Age: 13-17 years old.	59% met criteria for PTSD; 41% DTD, which correlated with PTSD, emotional dysregulation, negative self-concept, and interpersonal problems.
Van Meter et al. (2020)	N=416 Age: 5-12 years old (197 abused; 219 not abused) Multicultural sample.	Abuse was associated with greater emotion-centered conflict resolution and less problem-centered resolution. Emotion-centered coping, higher risk for externalizing behaviors.

Note: NCTSN: The National Child Traumatic Stress Network; G1: Group 1; G2: Group 2; SAD: Separation Anxiety Disorder; GAD: Generalized Anxiety Disorder

- Achterhof, R., Huntjens, R., Meewisse, M.L., & Kiers, H. (2019). Assessing the application of latent class and latent profile analysis for evaluating the construct validity of complex posttraumatic stress disorder: Cautions and limitations. *European Journal of Psychotraumatology*, *10*, 1698223. doi: 10.1080/20008198.2019.1698223
- * Alcántara, M.V., López-Soler, C., Castro, M. & López, J.J. (2013). Alteraciones psicológicas en menores expuestos a violencia de género: Prevalencia y diferencias de género y edad [Psychological alterations in minors exposed to gender violence: Prevalence and differences in gender and age]. *Anales de Psicología*, *29*(3), 741-747. doi: 10.6018/analesps.29.3.171481
- American Psychiatric Association (1994). *DSM-IV. Manual Diagnóstico y Estadístico de los Trastornos Mentales [DSM-IV. Diagnostic and Statistical Manual of Mental Disorders]*. Madrid: Editorial Médica Panamericana.
- American Psychiatric Association (2000). *DSM-IV-TR. Manual Diagnóstico y Estadístico de los Trastornos Mentales [DSM-IV-TR. Diagnostic and Statistical Manual of Mental Disorders]*. Madrid: Editorial Médica Panamericana.
- American Psychiatric Association (2013). *DSM-5. Manual Diagnóstico y Estadístico de los Trastornos Mentales [DSM-5. Diagnostic and Statistical Manual of Mental Disorders]*. Madrid: Editorial Médica Panamericana.
- * Barboza, G.E., Dominguez, S., & Pinder, J. (2017). Trajectories of post-traumatic stress and externalizing psychopathology among maltreated foster care youth: A parallel process latent growth curve model. *Child Abuse and Neglect*, *72*, 370-382. doi: 10.1016/j.chiabu.2017.09.007.
- * Beal, S.J., Wingrove, T., Mara, C.A., Lutz, N., Noll, J.G., & Greiner, M.V. (2018). Childhood adversity and associated psychosocial function in adolescents with Complex Trauma. *Child and Youth Care Forum*, *48*, 305-322. doi: 10.1007/s10566-018-9479-5.
- Boeckel, M., Viola, T., Daruy-Filho, L., Martínez, M., & Grassi-Oliveira, R. (2017). Intimate partner violence is associated with increased maternal hair cortisol in mother-child dyads. *Comprehensive Psychiatry*, *72*, 18-24. doi: 10.1016/j.comppsy.2016.09.006
- * Carliner, H., Keyes, K.M., McLaughlin, K.A., Meyers, J.L., Dunn, E.C., & Martins, S.S. (2016). Childhood trauma and illicit drug use in adolescence: A population-based National Comorbidity Survey Replication-Adolescent Supplement Study. *Journal of the American Academy of Child and Adolescent Psychiatry*, *55*(8), 701-708. doi: 10.1016/j.jaac.2016.05.010
- Cloitre, M., Garvert, D.W., Brewin, C.R., Bryant, R.A., & Maercker, A. (2013). Evidence for proposed ICD-11 PTSD and complex PTSD: A latent profile analysis. *European Journal of Psychotraumatology*, *4*, 1-12. doi: 10.3402/ejpt.v4i0.20706
- * Cloitre, M., Stolbach, B. C., Herman, J. L., van der Kolk, B., Pynoos, R., ... & Petkova, E. (2009). A developmental approach to complex PTSD: Childhood and adult cumulative trauma as predictors of symptom complexity. *Journal of Traumatic Stress*, *22*(5), 399-408. doi: 10.1002/jts.20444
- Cook, A., Spinazzola, J., Ford, J., Lanktree, C., Blaustein, M., Cloitre, M., ... van der Kolk, B. (2005). Complex Trauma in children and adolescents. *Psychiatric Annals*, *35*(5), 390-398. doi: 10.3928/00485713-20050501-05
- Courtois, C.A. (2004). Complex Trauma, complex reactions: Assessment and treatment. *Psychotherapy: Theory, Research & Practice*, *41*, 412-425. doi: 10.1037/1942-9681.S.1.86
- * Delgi-Esposti M., Pinto, S.M., Humpherys, K.L., Sale, R.D., & Bowes, L. (2020). Child maltreatment and the risk of antisocial behaviour: A population-based cohort study spanning 50 years. *Child Abuse & Neglect*, *99*. 104281. doi: 10.1016/j.chiabu.2020.104281.
- Fernández, M.V. (2014). *Maltrato infantil: Un estudio empírico sobre variables psicopatológicas en menores tutelados [Child abuse: An empirical study on psychopathological variables in minors in care]* [Doctoral thesis published online by DIGITUM and TDX]. University of Murcia, Murcia, Spain. Retrieved from (<https://digitum.um.es/digitum/handle/10201/39453>)
- Ford, J.D., Spinazzola, J., van der Kolk, B., & Grasso, D. (2014). Developmental Trauma Disorder (DTD) field trial: I. Evidence of reliability, structure, and validity of the DTD Semi-structured Interview (DTD-SI). Paper presented at the *International Society for Traumatic Stress Studies Annual Convention*, Miami, FL.
- Galán-Rodríguez, A. (2020). ¿En qué mejora la teoría del apego nuestra práctica clínica? Es hora de recapitular [How does attachment theory improve our clinical practice? A time for summing-up]. *Papeles del Psicólogo/ Psychologist Papers*, *41*(1), 66-73. doi: 10.23923/pap.psicol2020.2917
- * Geerson, J.K., Briggs, E.C., Kisiel, C.L., Layne, C.M., Ake, G.S., Ko, S.J., ... Fairbank, J.A. (2011). Complex Trauma and mental health in children and adolescent placed in foster care: Findings from the national child traumatic stress network. *Child Welfare*, *90*(6), 91-108.
- González-García, C., Bravo, A., Arruabarrena, I., Martín, E., Santos, I., & Fernández del Valle, J. (2017). Emotional and behavioral problems of children in residential care: Screening detection and referrals to mental health services. *Children and Youth Services Review*, *70*, 100-106. doi: 10.1016/j.chilyouth.2016.12.011
- * Graham-Bermann, S., Castor, L.E., Miller, L.E., & Howell, K.H. (2012). The impact of intimate partner violence and additional traumatic events on trauma symptoms and PTSD in preschool-aged children. *Journal of Traumatic Stress*, *25*, 393-400. doi: 10.1002/jts.21724
- * Hengartner, M.P., Cohen, L.J., Rodgers, S., Müller, M., Rössler, W., & Ajdacic-Gross, V. (2015). Association between childhood maltreatment and normal adult personality traits: Exploration of an understudied field. *Journal of Personality Disorders*, *29*(1), 1-14. doi: 10.1521/pedi_2014_28_143.

- Herman, J.L. (1992). Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. *Journal of Traumatic Stress, 13*, 271-286. doi: 10.1002/jts.2490050305
- *Hyland, P., Shevlin, M., Elklit, A., Murphy, J., Vallières, F., Garvert, D.W. & Cloitre, M. (2017). An assessment of the construct validity of the ICD-11 proposal for complex posttraumatic stress disorder. *Psychological Trauma: Theory, Research, Practice, and Policy, 9*, 1-9. doi: 10.1037/tra0000114
- Humpherys, K.L., LeMolot, J., Wear, J.G., Piersiak, H.A., Lee, A., & Gotlib, I.H. (2020). Child maltreatment and depression: A meta-analysis of studies using the Childhood Trauma Questionnaire. *Child Abuse & Neglect, 102*, 104361. doi: 10.1016/j.chiabu.2020.104361.
- Karam, E.G., Friedman, M.J., Hill, E.D., Kessler, R.C., McLaughlin, K.A., & Petukhova, M. (2014). Cumulative traumas and risk thresholds: 12-month PTSD in the world mental health (WMH) surveys. *Depression and Anxiety, 31*(2), 130-142. doi: 10.1002/da.22169
- Karatzias, T., Cloitre, M., Maercker, A., Kazlauskas, E., Shevlin, M., Hyland, P., ... Brewink, C. (2018). PTSD and Complex PTSD: ICD-11 updates on concept and measurement in the UK, USA, Germany and Lithuania. *European Journal of Psychotraumatology, 8*, 1418103. doi: 10.1080/20008198.2017.1418103
- *Kisiel, C., Fehrenbach, T., Stolbach, B., Briggs, E., Layne, C., & Liang, L.J. (2014). Examining child sexual abuse in relation to complex patterns of trauma exposure: Findings from the National Child Traumatic Stress Network. *Psychological Trauma: Theory, Research, Practice, and Policy, 6*, 29-39. doi: 10.1037/a0037812
- Klasen, F., Gehrke, J., Metzner, F., Blotevogel, M., & Okello, J. (2013). Complex Trauma symptoms in former Ugandan child soldiers. *Journal of Aggression, Maltreatment & Trauma, 22*, 698-713. doi: 10.1080/10926771.2013.814741
- *Lansing, A.E., Plante, W.Y., Beck, A.N., & Ellenberg, M. (2018). Loss and grief among persistently delinquent youth: The contribution of adversity indicators and psychopathy-spectrum traits to broadband internalizing and externalizing psychopathology. *Journal of Child and Adolescent Trauma, 11*(3), 375-389. doi: 10.1007/s40653-018-0209-9
- *López-Soler, C. (2008). Las reacciones postraumáticas en la infancia y adolescencia maltratada: El Trauma Complejo [Post-traumatic reactions in abused childhood and adolescence: Complex Trauma]. *Revista de Psicopatología y Psicología Clínica, 13*(3), 159-174. doi: 10.5944/rppc.vol.13.num.3.2008.4057
- *López-Soler, C., Fernández, V., Prieto, M., Alcántara, M.V., Castro, M. & López-Pina, J.A. (2012). Prevalencia de las alteraciones emocionales en una muestra de menores maltratados [Prevalence of emotional disturbances in a sample of abused minors]. *Anales de Psicología, 28*(3), 780-788. doi: 10.6018/analesps.28.3.140441
- Martín, E., González-García, C., del Valle, J.F., & Bravo, A. (2020). Detection of behavioral and emotional disorders in residential child care: Using a multi-informant approach. *Children and Youth Services Review, 108*, 104588. doi: 10.1016/j.chilyouth.2019.104588
- *Marshall, A.D. (2016). Developmental timing of trauma exposure relative to puberty and the nature of psychopathology among adolescent girls. *Journal of the American Academy of Child and Adolescent Psychiatry, 55*(1), 25-32. doi: 10.1016/j.jaac.2015.10.004.
- Martínez, A.M. (2015). *Perfil externalizante e internalizante, y estrés postraumático en menores expuestos a violencia de género: Características y comorbilidad [Externalizing and internalizing profile, and post-traumatic stress in minors exposed to gender violence: Characteristics and comorbidity]*. (Doctoral thesis published online by DIGITUM and TDX). University of Murcia, Murcia, Spain. Retrieved from <https://digitum.um.es/digitum/handle/10201/47129>
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine, 151*, 264-269. doi: 10.1371/journal.pmed.1000097
- *Op den Kelder, R., Ensink, J.B.M., Overbeek, G., Maric, M., & Lindauer, R.J.L. Executive function as a mediator in the link between single or complex trauma and posttraumatic stress in children and adolescents. *Quality of Life Research, 26*(7), 1687-1696. doi: 10.1007/s11136-017-1535-3.
- Perkins, S., & Graham-Bermann, S. (2012). Violence exposure and the development of school-related functioning: Mental health, neurocognition. *Aggression and Violent Behavior, 17*(1), 89-98. doi: 10.1016/j.avb.2011.10.001
- *Porto-Faus, D., Leite de Moraes, C., Reichenheim, M.E., Borges da Matta Souza, L.M., & Taquette, S.R. (2019). Childhood abuse and community violence: Risk factors for youth violence. *Child Abuse & Neglect, 98*, 104182. doi: 10.1016/j.chiabu.2019.104182
- Rooij, S. J. H., Smith, R. D., Stenson, A. F., Ely, T. D., Yang, X., Tottenham, N., ... Jovanovic, T. (2020). Increased activation of the fear neurocircuitry in children exposed to violence. *Depression and Anxiety, 37*(4), 303-312. doi: 10.1002/da.22994
- Scheeringa, M.S., & Zeanah, C.H. (2008). Reconsideration of harm's way: Onsets and comorbidity patterns in preschool children and their caregivers following Hurricane Katrina. *Journal of Clinical Child & Adolescent Psychology, 37*, 508-518. doi: 10.1080/15374410802148178
- *Spinazzola, J., Ford, J., Zucker, M., van der Kolk, B., Silva, S., Smith, S., ... Blaustein, M. (2005). National survey of complex trauma exposure, outcome and intervention for children and adolescents. *Psychiatric Annals, 35*, 433-439. doi: 10.3928/00485713-20050501-09
- *Spinazzola, J., Van der Kolk, B., Ford, J.D. (2018). When nowhere is safe: Interpersonal trauma and attachment adversity as antecedents of posttraumatic stress disorder and developmental trauma disorder. *Journal of Traumatic Stress, 31*(5), 631-642. doi: 10.1002/jts.22320

- *Stolbach, B. C., Minshew, R., Rompala, V., Dominguez, R. Z., Gazibara, T., & Finke, R. (2013). Complex trauma exposure and symptoms in urban traumatized children: A preliminary test of proposed criteria for Developmental Trauma Disorder. *Journal of Traumatic Stress, 26*, 1-9. doi: 10.1002/jts.21826
- *Tarren-Sweeney, M. (2013). An investigation of complex attachment and trauma-related symptomatology among children in foster and kinship care. *Child Psychiatry & Human Development, 44*(6), 727-741. doi: 10.1007/s10578-013-0366-x.
- Teicher, M.H., & Samson, J.A. (2016). Annual research review: Enduring neurobiological effects of childhood abuse and neglect. *Journal of Child Psychology and Psychiatry, 57*(3), 241-266. doi: 10.1111/jcpp.12507
- Van der Kolk, B.A. (2005). Developmental trauma disorder: toward a rational diagnosis for children with complex trauma histories. *Psychiatric Annals, 35*(5), 401-408. doi: 10.3928/00485713-20050501-06
- *Van der Kolk, B., Ford, J.D., & Spinazzola, J. (2019). Comorbidity of developmental trauma disorder (DTD) and post-traumatic stress disorder: Findings for the DTD field trial. *European Journal of Psychotraumatology, 10*(1), 1562841. doi: 10.1080/20008198.2018.1562841
- Van der Kolk, B.A., Pynoos, R.S., Cicchetti, D., Cloitre, M., D'Andrea, W., Ford, J.D., ... Teicher, M. (2009). *Proposal to include a developmental trauma diagnosis for children and adolescents in DSM V*. Retrieved from www.traumacenter.org.
- Van der Kolk, B.A., Roth, S., Pelcovitz, D., Sunday, S., & Spinazzola, J. (2005). Disorders of extreme stress: The empirical foundation of a complex adaptation to trauma. *Journal of Traumatic Stress, 18*, 389-399. doi: 10.1002/jts.20047
- *Van Meter, F., Handley, E.D., & Cicchetti, D. (2020). The role of coping strategies in the pathway between child maltreatment and internalizing and externalizing behaviors. *Child Abuse & Neglect, 101*, 104323. doi: 10.1016/j.chiabu.2019.104323
- *Villalta, L., Khadr, S., Chua, K., Kramer, T., Clarke, V., Viner, R.M., ... Smith, P. (2020). *European Journal of Psychotraumatology, 11*(1), 1710400. doi: 10.1080/20008198.2019.1710400.
- *Wamser-Nanney, R., & Vandenberg, B.R. (2013). Empirical support for the definition of a complex trauma event in children and adolescents. *Journal of Traumatic Stress, 26*, 671-678. doi: 10.1002/jts.21857
- World Health Organization (2018). International Statistical Classification of Diseases and Related Health Problems 11th Revision (ICD-11). Retrieved from <https://www.who.int/classifications/icd/en/>
- *Wong, C.F., Clark, L.F., & Marlotte, L. (2016). The Impact of Specific and Complex Trauma on the Mental Health of Homeless Youth. *Journal of Interpersonal Violence, 31*(5), 831-854. doi: 10.1177/0886260514556770
- *Zhang, Y., Zhang, J., & Ding, C. (2019). Investigating the association between parental absence and developmental trauma disorder symptoms. *Journal of Traumatic Stress, 32*(5), 733-741. doi: 10.1002/jts.22446