

Cumulative Trauma in Childhood

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Maria is a 14-year-old girl who has been involved with Child Protective Services for most of her life. From 2- to 4-years of age she was sexually abused by her mother's boyfriend. When it was discovered, Child Protective Services placed her with an aunt, who turned out to be both emotionally and physically abusive. She returned to live with her biological mother once, but was removed again due to her mother's drug use and eventual incarceration. When her mother completed her sentence, she left the state without notifying Child Protective Services or seeing Maria. Maria remained with her aunt, in a neighborhood characterized by criminal activity and violence. In the home, Maria's aunt and uncle often fought physically, and to escape, Maria began to spend more time away from the house, with a group of older adolescents who frequently abused alcohol and drugs. At age 13, one of the older teenagers raped her. She remained a part of the group, and later referred to the perpetrator as her boyfriend. Her teachers were concerned that she seemed to change from an outgoing, popular, and studious child to being angry, defiant, and at times even apparently purposefully vengeful and cruel toward peers and adults. Maria became involved with the Juvenile Justice System after she and these peers were fleeing from police and crashed their car into a telephone pole. One of the girls in the group died in the accident.

Maria made three serious suicide attempts prior to the age of 14 –each following an alcohol binge and prescription drug use. The last attempt resulted in residential treatment for more than a year. When asked about feelings of depression, Maria claims she has been 'this way' all of her life and often finds herself thinking that the hurt and pain is just not worth living through. Maria engages in self-mutilation and often uses this means to 'get back at' others who hurt or disappoint her. In school, Maria reportedly has difficulty paying attention in class and frequently skips class and leaves school grounds without permission, often saying that being in school "makes me so sick that I get migraines or have to puke." Her teachers complain that she seems lost in thought, as though she is mentally someplace else. Maria reportedly experiences frequent nightmares of being attacked by "monsters with no faces," and endorses symptoms that are characteristic of posttraumatic stress disorder, including intrusive thoughts about past abuse, feeling 'on-edge' and unsafe, and using marijuana to escape these thoughts and feelings. Also prominent are Maria's problems with interpersonal relationships. They tend to be unstable and filled with conflict. Maria claims that she cannot trust anyone because everyone she has tried to be close to has 'stabbed her in the back.' According to residential treatment facility staff, Maria is quick to anger and her behavior is difficult to manage. Staff often has to implement hands-on restraints to stop her from physically attacking peers when she feels 'disrespected.'

This case is based on the real stories of numerous girls (and boys) who come into the Child Trauma Clinic where we work, having developed severe behavioral and medical health, school, family, peer group, and legal problems after experiencing a lifetime of repeated and cumulative adversity and traumatic stressors. While these experiences cut across virtually every aspect of Maria's life, they are most notable for the almost non-existent primary attachment bonds, multiple forms of violence and abuse, and violation of her physical and psychological self, and the disruption of primary attachment bonds that occurred within the context of her familial and other intimate and peer relationships. Maria's experiences may sound extreme, but unfortunately Maria is not alone. According to research findings, about a fifth of youths nationwide (U. S.) have been exposed to more than one type of victimization (Saunders, 2003; Turner, Finkelhor, & Ormrod, 2010) and many are exposed to multiple types involving multiple perpetrators. These are interpersonal victimizations, such as physical abuse, sexual abuse, emotional abuse and neglect; witnessing domestic violence; and separation from, abandonment by, or impairment of (due to drugs, illness, or incarceration) caregivers. They tend to accumulate as one victimization experience leads to another (referred to as "cumulative" trauma), to involve many types of victimization rather than only a single form (referred to as "poly-victimization"), and to involve a complex combination of frightening, alienating, and demoralizing experiences in the absence of adequate response or protection ("complex trauma"). In this chapter we summarize research findings concerning cumulative, poly-victimization, and complex trauma that have direct implications for clinicians treating children and adolescents such as Maria.

Much of the contemporary understanding of complex trauma and its impact on development over the course of childhood, adolescence and over the entire lifespan has grown out of three separate, but closely related, lines of work on (a) adverse childhood experiences or

ACEs (Felitti et al., 1998), (b) poly-victimization (Finkelhor, Ormrod, & Turner, 2007a) , and (c) cumulative trauma (Briere & Spinazzola, 2005; Cloitre et al., 2009b). While these three conceptualizations of complex trauma share commonalities, each is unique in terms of the population type and demographic makeup of the samples used in their studies as well as in the operational definitions used to measure adverse or traumatic events and high exposure. Despite these differences, these researchers and others have consistently found that multiple adversities in childhood are associated with an increased risk for psychiatric and behavioral symptoms and impairment in childhood (Cloitre et al., 2009a), adolescence (Finkelhor, Ormrod, & Turner, 2007b) and adulthood (Felitti et al., 1998) when compared to their non-traumatized counterparts. Further, in clinical (Cloitre et al., 2009a; Ford, Wasser, & Connor, 2011a) and community (Anda et al., 2006b; Briere, Kaltman, & Green, 2008; Finkelhor et al., 2007b; Ford, Elhai, Connor, & Frueh, 2010b) populations, a dose-response relationship between adversity and impairment has been found, such that the more categories of adversity endorsed, the more severe the impairment and the broader the spectrum of symptoms. Factors such as a younger age of onset, a close relationship to the perpetrator(s), non-response by bystander(s), and insufficient protection and support from caregivers within and outside the family can coalesce to create circumstances ripe for retraumatization at the time and throughout the life course (Follette & Duckworth, 2011).

As the recognition of the substantial impact that multiple adversities have on psychological development has grown, it has become clear that, at the present time, no single current diagnosis accounts for the cluster of symptoms frequently associated with such a history (D'Andrea, Ford, Stolbach, Spinazzola, & van der Kolk, in press). The reactions of victims of repeated and extensive childhood trauma often do not fit well into the traditional *DSM-IV* PTSD symptom triad of re-experiencing, avoidance, and hyperarousal (Courtois, 2008). Rather, as is evident with

Maria, the sequelae of multiple adversities in childhood are more likely to be problems associated with self-regulation and interpersonal relatedness that manifest as difficulties with emotion regulation, somatization, attention, impulse control, dissociation, interpersonal relationships, and self-attributions (Cook et al., 2005; D'Andrea et al., in press). This symptom cluster has been described elsewhere as Complex Posttraumatic Stress Disorder (Herman, 1992) in adults or Developmental Trauma Disorder (D'Andrea et al., in press; van der Kolk, 2005) in children.

In the current chapter we provide a foundation for understanding the impact of exposures to multiple potentially traumatic adversities on development in childhood and throughout the lifespan by exploring the key findings of each of the major bodies of research in this area. In the final section we review the clinical implications of this research. We refer to the case illustration of Maria throughout to emphasize some of its key points of the chapter.

Defining and Measuring Exposure to Multiple Adversities: Three Approaches

Adverse Childhood Experiences (ACEs) Study. The Adverse Childhood Experiences (ACEs) Study is a large-scale, longitudinal, epidemiologic study that has yielded a wealth of data connecting physical and mental health problems in adulthood with traumatic experiences that occur in childhood and adulthood. The study originally was based on information obtained from more than 17,000 young and mid-life adults who completed a routine health screening while receiving healthcare services in the California Kaiser Permanente Health Maintenance Organization. Subsequently, the 11 questions that were used to assess ACEs were included by the Centers for Disease Control (2010) in a random sampling of the adult populations of five states in the U. S., replicating the key findings from the initial healthcare sample. While the majority of prior studies examined a single type of childhood abuse, the ACEs Study was one of

the first to simultaneously assess multiple categories of childhood maltreatment and adversity and to explore the cumulative impact of these experiences (Anda & Brown, 2010). It also examined a wider range of childhood adverse experiences than most of the studies predating it, most of which had focused on one or two categories of maltreatment (i.e., physical abuse, sexual abuse, or domestic violence). As the name implies, the ACEs Study greatly expanded the study to include other forms of adverse experiences in childhood including exposure to maltreatment (emotional abuse or neglect, physical abuse or neglect, sexual abuse) as well as to household dysfunction and parental impairment (domestic violence, parental separation or divorce, incarceration of a household member, family mental illness, or family substance use disorder).

This broader conceptualization of potentially traumatic adversity reflects the growing body of research documenting the impact on development and functioning of childhood experiences not included in traditional definitions of trauma, such as emotional abuse and parental separation or impairment due to drugs, mental illness or incarceration (Turner & Lloyd, 1995). The authors also note that each of the experiences included in the study is interpersonal in nature and represents an event for which public and private sector efforts have been made to reduce their occurrence (Anda & Brown, 2010). Accidents and natural disasters do not fall into the class of interpersonal trauma and so were not included.

More than 17,000 middle-class adults seeking preventive medical care at a California health maintenance organization (80% white; 54% female; average age = 57 years old) participated in the study by simply indicating on a brief questionnaire which of the ACEs they recalled having experienced before the age of 18. Each participant was assigned a score based on the number of ACEs categories endorsed. Even among this well-educated, middle-class sample, ACEs were common: nearly two-thirds of the participants reported at least one ACE, and one in

six people experienced 4 or more (Anda & Brown, 2010). Women were 50% more likely than men to have experienced 5 or more ACE categories (Felitti & Anda, 2009). Rates for individual categories experienced occurred at frequencies consistent with national population studies: 18% of men and 25% of women had experienced childhood sexual abuse; 22% of men and 20% of women had experienced childhood physical abuse; 12% of men and 15% of women had witnessed maternal battering (Edwards, Holden, Felitti, & Anda, 2003).

In addition to being common, the research study showed that ACEs are highly interrelated. Of those people who endorsed one category of ACE, 81-98% (median = 87%) reported at least one additional category (Dong et al., 2004), suggesting that ACEs tend to co-occur with high frequency. For example, 65% of individuals who had witnessed domestic violence also reported growing-up in a home where substance abuse was present (compared to 23% of respondents who had not witnessed domestic violence). Likewise, 81% of individuals reporting emotional abuse also reported physical abuse (compared with 20% of individuals who did not report emotional abuse). Therefore, assessing and examining the effects of just one or two categories of ACEs risks over-estimating the impact of any one category and missing the cumulative effect of co-occurring childhood traumatic stressors.

The ACEs Study also explored the relationship of these childhood adverse experiences to a wide variety of outcomes associated with the leading causes of morbidity and mortality in adulthood (Felitti et al., 1998). These measures included self-rated health as well as risk factors (smoking, obesity, physical inactivity, depressed mood, suicide attempts, alcoholism, drug abuse, sexual promiscuity, sexually transmitted disease) and disease conditions (heart disease, cancer, stroke, chronic bronchitis, COPD, diabetes, hepatitis and skeletal fractures). Confirming the cumulative effect of adverse experiences, the researchers found a dose-response relationship

such that the more categories of ACEs an individual experienced the greater their risk for the health risk behaviors and diseases examined in the study (Felitti et al., 1998).

Adjusting for the adverse effect of having a household member with a psychiatric disorder during childhood, women who experienced 5 or more ACEs were 5 times as likely to have a lifetime history of depressive disorders, and men were 2.4 times more likely, compared to participants with no history of adverse experiences (Chapman et al., 2004). An even stronger relationship was found for self-reported suicide attempts, in which individuals reporting 5 or more ACEs were 10 times as likely to report having attempted suicide in childhood, adolescence or adulthood, and those reporting 7 or more ACEs were 30 times more likely to attempt suicide. When other known risk factors for suicide were accounted for (alcoholism, depressed mood, and illicit drug use), individuals with an ACE score of 7 or higher continued to be 17 times more likely to attempt suicide than their counterparts who reported no ACEs (Dube, 2001).

Although these initial reports stemming from the ACE Study were based on retrospective recall of ACEs by adults, newer studies report findings from prospective follow-up data collected between 1998 and 2005. These longitudinal outcomes confirm and greatly strengthen the initial findings of the ACE study. They have found, for example, that the complexity and severity of psychiatric problems (as measured indirectly by the number of psychotropic medications prescribed for an individual), as well as the risk for developing lung cancer or autoimmune diseases, are associated with the number of ACEs experienced in childhood (Anda et al., 2007; Brown et al., 2010; Dube et al., 2009). In study after study, growing up with ACEs has been found to be associated with behavioral, health, and social problems and high risk behaviors, including: chronic medical diseases; premature mortality; cigarette, alcohol, and drug use; high-risk sexual behaviors; depression and suicidality (Anda & Brown, 2010). These relationships

point to a common pathway from childhood adversity to adult health and psychosocial problems which may reflect the neurological impact that cumulative exposure to traumatic stress has on the developing brain and the body's stress response and immune systems (Anda et al., 2006a).

The ACEs studies offer substantial evidence that suggests that chronic and repeated stress overtaxes biological systems and alters a host of stress-related bodily responses that promote adaptation and survival, as well as preserve the integrity of crucial regulatory processes in the body – *biological business-as-usual* – or homeostasis (McEwen, 2000). When the body's capacity to adapt is overwhelmed, psychophysiological changes and psychological as well as physical illness may occur due to a breakdown of the body's stress response and immune systems, which McEwen (2000) described as creating a state of constant overload, or "allostasis." Allostasis may alter the brain systems implicated in cognitive and emotional functions, including memory, learning, motivation, information processing, problem solving and distress tolerance, which are crucial for healthy development (Belsky & de Haan, 2011). The developing brain is particularly susceptible during so-called sensitive periods (or developmental epochs), when an overabundance of neural connections undergoes a process called pruning; neural connections reinforced by experiences become stronger, while inactive neurons die off (Belsky & de Haan, 2011). ACEs may compromise the body and brain's basic foundation, potentially undermining the progressive building of the complex neural networks necessary to accomplish the developmental tasks of adolescence and adulthood (Cicchetti, 2006). Support for this view comes from recent studies which suggest that ACEs may alter not only the biology of the body's basic systems, but also the very genes that regulate those bodily systems—a process referred to as epigenetics (Skelton, Ressler, Norrholm, & Jovanovic, 2011). Thus, when a child must cope with multiple adversities, she or he may develop not only problems with emotions,

self-control, relationships, and learning, but with the basic biological systems that are necessary throughout the rest of life for self-regulation and healthy development (Ford, 2009).

Let's return to our case example, Maria, who had experienced at least 7 of the 10 ACE categories. Although only 14 years old, she's already experiencing many of the problems and engaging in many of the high-risk behaviors that would be predicted on the basis of these study findings. Maria abuses alcohol and other substances, she suffers from depression, and she has made several suicide attempts. She describes physical symptoms that may lead to, or place her at risk for, numerous potentially chronic physical health problems and illnesses. Beyond these outcomes that would be predicted by the ACEs studies, Maria's disregard for personal safety and her tendency to be defiant and to react in an aggressive manner when she feels challenged/attacked or disrespected, portend serious social and legal problems, and place her in danger of being exposed to recurrent victimization. Maria's difficulty developing interpersonal relationships and trusting others, her struggles to regulate her emotions (as exemplified by her deliberate self-harm and her quick temper), her dissociative symptoms and related difficulty concentrating, following through, and staying engaged in school are common sequelae of complex trauma not assessed in the ACEs Study (D'Andrea et al., in press). Therefore, we turn next to a line of research that conceptualizes multiple childhood adversities in a slightly different manner: poly-victimization.

Poly-Victimization. The term poly-victimization grew out of a large, nationally representative random digit-dial survey conducted with caregivers of children ages 2- to 9-years-old and adolescents ages 10- to 17-years-old (Finkelhor, Ormrod, Turner, & Hamby, 2005a). Victimization experienced in the past year was measured using the Juvenile Victimization Questionnaire (JVQ), surveyed 34 different types of victimization. Although non-interpersonal

events (e.g., accident, natural disaster) could be viewed as “victimizing” survivors or witnesses, in these studies victimization was defined as including only interpersonal events (e.g., physical or sexual assault, abuse, or witnessed violence).

Consider for example, that Maria’s traumatic experiences included being the victim of a tragic accident in which her life was in jeopardy and she witnessed the death of a friend. As terrifying and grief-rending as that experience may have been, it differed in clinically important ways from the many intentional assaults that Maria had sustained and witnessed. When traumatic victimization is inflicted by other human beings, especially those who ordinarily are expected to protect rather than harm (whether purposefully or by omission) vulnerable persons such as children, the adverse impact tends to be profound and persistent. Betrayal of trust by others who should be trustworthy is a key feature which differentiates interpersonal forms of victimization from non-interpersonal events such as accidents or natural disasters that do not involve the intentional acts of other people (Freyd, DePrince, & Gleaves, 2007). While non-interpersonal traumatic events have been associated with the development of PTSD, specific phobia, and other internalizing disorders in children (Briggs-Gowan et al., 2010; Kim et al., 2009; Luthra et al., 2009) as well as adults (Baranyi et al., 2010; Birmes, Daubisse, & Brunet, 2008; Bui et al., 2010; Kassam-Adams, Fleisher, & Winston, 2009), exposure to intentional interpersonal trauma has been empirically linked to a broader spectrum of internalizing and externalizing disorders than non-interpersonal trauma (D’Andrea et al., in press).

The JVQ study demonstrated the clinical utility of considering the total number of victimization *types* when estimating risk by determining its ability to predict PTSD symptomatology significantly better than any single type alone (Finkelhor et al., 2005a). Specifically, youth were defined as having been poly-victimized if they endorsed exposure to

four or more victimization types on the JVQ. This is similar to the ACEs score, in that it is based on the number of different *types* of victimization rather than the number of times or chronicity or severity of any single type of victimization (although both are important and contribute to layered or cumulative trauma). However, a much larger number of more specifically defined types of victimization were assessed than the 10 fairly general types of adversities assessed as ACEs. Victimization also was assessed based only on the past year of each respondent, rather than as recalled several decades later. Despite these definitional and methodological differences, the findings regarding poly-victimization were remarkably similar to the findings for ACEs.

In their sample of 2,030 children and adolescents, poly-victims comprised nearly a quarter, the largest portion of the poly-victims being older and male (Finkelhor et al., 2005a). Poly-victims were on average four times more likely to be re-victimized in the year following the study, and nearly half of poly-victims at baseline were categorized as poly-victims again in the second year (Finkelhor, Ormrod, & Turner, 2007c). This was referred to as persistent poly-victimization, for which youth were at greater risk if they had resided in a family inflicted with violence, experienced child maltreatment, been exposed to familial alcohol and drug abuse, or had a parent who was unemployed (Finkelhor et al., 2007c)—findings that are consistent with those of the ACEs studies. The most robust predictor of repeat poly-victimization was having higher scores on a measure of anger and aggression (Finkelhor et al., 2007c), consistent with the findings of another study that found that children and adolescents in intensive psychiatric treatment who had had multiple forms of victimization were particularly prone to problems with anger, aggression, and impulsivity (Ford, Connor, & Hawke, 2009). Poly-victimized children encounter adversity across multiple contexts where violence is pervasive, inflicted by a variety of perpetrators: physically and emotionally maltreatment by caregivers; bullying by peers; sexual

abuse by caregivers, mentors, or acquaintances; and witnessing a host of violent and traumatic incidents in the home, school, and community (Cuevas, Finkelhor, Clifford, Ormrod, & Turner, 2010; Holt, Finkelhor, & Kantor, 2007a; Saunders, 2003). Although aggressive behavior may be adaptive for a poly-victim as an attempt at to gain control in the face of actual or perceived threat, these findings suggest that it also puts youth at higher risk of being victimized in the future.

On the other hand, youths who reported having more friends had a lower risk of being categorized as a poly-victim in the second year (Finkelhor et al., 2007c). This is consistent with literature showing that social support is a potent protective factor regarding victimization and PTSD chronicity (Brewin, Andrews, & Valentine, 2000; Charuvastra & Cloitre, 2008; Pynoos, Steinberg, & Piacentini, 1999). Unfortunately, however, poly-victims tend to seek social support from peers who are involved in deviant or delinquent behavior (Chen, 2009; Cuevas, Finkelhor, Turner, & Ormrod, 2007; Ford, Elhai, Connor, & Frueh, 2010a), thus remaining at risk for further victimization while at the same time seeking protection and support from peers.

Consistent with these findings, four primary precipitants of poly-victimization have been identified: (1) residing in a dangerous community, (2) living in a dangerous family, (3) living in a non-dangerous but chaotic and multi-problem family environment, and (4) having emotional problems that increase risk behavior, foster antagonism, and increase the likelihood of being victimized (Finkelhor, Ormrod, Turner, & Holt, 2009). The latter pathway was particularly salient for youth in the sample who were less than 10-years of age. Interestingly, poly-victimization onset was disproportionately likely to occur either in the year prior to turning 7-years-old or prior to turning 15-years-old (Finkelhor, Ormrod, Turner, et al., 2009). The authors note that these years approximate a youth's entry into elementary and high school, respectively,

and are known to be challenging social adjustment periods when emotional and behavioral problems are likely to manifest (Finkelhor, Ormrod, Turner, et al., 2009).

Finally, Finkelhor et al. examined lifetime victimization data to derive a lifetime poly-victimization classification. Poly-victims represented the top 10% of youth with the highest victimization scores. When poly-victimization was defined this way, poly-victims showed significantly more distress and non-interpersonal adversity and were less likely to reside in an intact family (Finkelhor, Ormrod, & Turner, 2009). Additionally, the best linear predictor of psychological distress on the basis of poly-victimization emerged when child maltreatment and sexual assault were weighted by four and three, respectively, suggesting a greater psychological impact of these types of victimization (Finkelhor, Ormrod, & Turner, 2009).

Maria, would more than satisfy the criteria for being classified as a poly-victim, since 13 out of 34 items on the JVQ were positive in Maria's history. Consistent with the poly-victimization perspective, Maria not only suffered from PTSD and emotional distress, but she also had severe difficulty with anger and aggression, substance abuse and suicidality, and she sought protection and support from delinquent peers. However, neither the ACEs nor poly-victimization frameworks fully account for Maria's impairments with self-regulation, such as her tendency to self-harm and her dissociative symptoms. We now turn to a third line of research on multiple adversities, which focuses on cumulative exposure to traumatic stressors.

Cumulative Trauma. Over the past two decades, a diverse set of studies has provided a growing body of evidence that the number of traumatic stressors experienced over the lifespan predicts the severity of a broad range of symptoms and disorders including PTSD, depression, dissociation, somatization, sleep and sexual problems, substance abuse, eating and body image problems, anger and emotion dysregulation, and interpersonal problems (Follette & Vijay, 2008;

Follette & Duckworth, 2011), especially (but not only) when the onset of traumatic stressors is in early childhood (Ford, 2010). Follette et al. (1996) found that in addition to anxiety, depression, and sleep problems, sexual problems and dissociation also were directly related to the number of trauma categories reported (including childhood sexual abuse, adult sexual assault, and adult physical abuse by a partner). Other studies show that adults with multiple traumatic exposures report elevated levels of guilt, dissociation, shame, anger, and interpersonal sensitivity (Hagenaars, Fisch, & van Minnen, 2011), and problems with emotion regulation when the cumulative exposure occurred in childhood (Ehring & Quack, 2010; Ford & Smith, 2008; Ford, Stockton, Kaltman, & Green, 2006).

Expanding on this evidence, recent studies have demonstrated a dose-response relationship between the number of types of interpersonal traumatic exposures and the number of different symptoms endorsed in a number of affective, cognitive, psychosomatic, and interpersonal domains (Briere et al., 2008; Cloitre et al., 2009a). Briere et al. (2008) surveyed 2,453 female university students and found a direct relationship between the number of different types of childhood traumatic events reported and the number of domains of current symptoms reported (i.e., anxious arousal, depression, anger-irritability, intrusive experiences, defensive avoidance, dissociation, sexual concerns, dysfunctional sexual behavior, impaired self-reference, and tension reduction behaviors). Although exposure to five of the trauma types each independently predicted symptom complexity, cumulative trauma was associated with symptom complexity over and above the contribution of these trauma types. Thus, exposure to multiple types of childhood traumatic stressors may lead to multiple types of symptoms independent of the specific type(s) of traumatic stressors that have occurred.

Cloitre et al. (2009) replicated these findings among clinical samples of women and children, and extended them by examining the impact of adult as well as childhood traumatic experiences. Similar to the Briere et al. (2008) findings, Cloitre et al. (2009) showed that cumulative childhood traumatic exposure was associated with symptom complexity in both adults and children, but adult cumulative trauma was not. Although these findings suggest that multiple types of childhood traumatic exposure may be more strongly associated with multifaceted symptom problems than multiple types of adult traumatic exposure, a close examination of the numerous studies on cumulative trauma exposure (or “re-traumatization;” Follette & Vijay, 2008) indicates that adults who experience multiple types of traumatic stressors are likely to have particularly severe and persistent symptoms even if they do not necessarily develop as wide a variety of symptoms as multiply traumatized children. One possibility that warrants further scientific and clinical study is that the cumulative impact of multiple traumatization on children may disrupt the development of core self-regulation capacities and lead to a variety of symptomatic problems (Ford, 2005), while multiply traumatized adults may experience a range of symptoms that reflect their adaptation to the stressors despite intact self-regulation capacities.

Finally, a recent study examining lifetime victimization data from the Finnish Child Victim Survey with a sample of 13,459 sixth and ninth grade students found that being older, female, using alcohol, drugs, or tobacco, being exposed to parental alcohol abuse, domestic violence, receiving child welfare services, spending less time with family, and having more unsupervised time predicted a greater number of endorsed victimization types (Ellonen & Salmi, 2011). The findings suggest that there may be an accumulation of risk factors for youths exposed to multiple adversities such that these youths not only are prone to additional severe or traumatic stressors but also to large numbers of other life stressors and negative experiences.

Returning again to Maria, we see that she clearly demonstrates the symptom complexity described in the cumulative trauma studies. She displays a wide range of symptoms consistent with severe anxiety and dysphoria (e.g., PTSD, depression, substance abuse, suicidality). In addition, she also has several symptoms consistent with more fundamental problems in several domains of self-regulation (Ford, 2005): self-mutilation, reactive aggression, dissociation, proneness to, and difficulty in recovering from, extreme emotion states (notably anger, but potentially also grief, despair, guilt, and shame), somatic complaints, and interpersonal relationships characterized by poor choice, mistrust, and conflict. Thus, Maria's difficulties tragically illustrate the cumulative adverse impact that exposure to multiple types of interpersonal traumatic stressors can have not only on a child or adolescent's psychosocial functioning and well-being but also on the development of core capacities for self-regulation which are the foundation for adjustment across the lifespan.

Converging Evidence

In our case illustration, Maria qualifies for at least 7 of the 10 ACEs categories, 13 of the 34 JVQ items, and 6 of the 7 predictors used in the child and adolescent cumulative trauma studies. In each instance, she would fall into the group of children who had faced the highest number of adversities: high ACEs, poly-victim, and cumulative trauma. Despite this consistent finding, it is important to consider how each framework's approach to defining and measuring complex trauma can add to the clinical or scientific understanding of trauma history. For example, the three ACEs of having an incarcerated parent, having a parent dependent on alcohol and drugs, and being abandoned would constitute only two items on the JVQ (neglect and emotional maltreatment) and two cumulative trauma categories (impaired caregiver and out-of-home placement). Moreover, these adversities would not necessarily be considered traumatic

stressors according to the *Diagnostic and Statistical Manual, Fourth Revision* (American Psychiatric Association, 2000), and therefore might not count toward a cumulative trauma index if that standard is rigorously applied. On the other hand, the ACEs do not provide the degree of specificity of the JVQ in defining exact types of victimization, and neither the ACEs nor the JVQ assess whether adverse events were life threatening or violations of bodily integrity as is done in assessing traumatic stressors.

Clearly none of these surveys provides a comprehensive list, nor are the items on any list assumed to confer equal risk. Rather, each provides a proxy measure for the extent of adversity—and therefore, the allostatic load—experienced by multiply victimized children and adolescents. None of the surveys specifically assesses the loss or disruption of primary relational bonds with caregivers early in life, which has been found to be associated with biological as well as psychosocial vulnerability to stressors and trauma throughout the rest of the lifespan (D’Andrea et al., in press; Ford, 2005; see also Chapter 1). Measuring trauma histories in this way provides useful epidemiological information about the relative frequency with which different types of victimization and violence experiences occur, the interrelationship between different categories of childhood victimization, and the impact these experiences have on development and functioning throughout the lifespan. The definitions and measures provide clinicians with examples that can be adapted for use in formulating and conducting trauma-informed clinical assessments with youths like Maria. **Next Steps: Developing Victimization**

Profiles

There are, however, limitations to the measurement approach used in these studies. Because each category of adversity is given equal weight in the summary scores, recording the number of categories of adversity experienced does not take into account other abuse

characteristics such as the relative impact of the type, frequency, severity or duration of victimization experiences (Scott-Storey, 2011). Finkelhor et al. (2005b) attempted to utilize a weighting system to acknowledge the differing impact of varied types of abuse but did not find that this provided any improvement over the simple counting method.

To address some of these measurement issues, few studies have begun to empirically identify subgroups of children and adolescents with distinct profiles of victimization experiences. In a large national sample of adolescents, for example, Ford and colleagues (2010b) used latent class analyses (LCA) to identify six distinct sub-groups based on their trauma history profiles: (1) sexual abuse/assault poly-victimization; (2) physical abuse/assault poly-victimization; (3) assault witness; (4) accident/disaster victim; (5) community violence poly-victimization; (6) sexual and physical assault poly-victimization. Members of each of the poly-victimization subgroups were more likely than non-traumatized adolescents to have posttraumatic stress disorder, major depression, or a substance use disorder. Their risk for these co-morbid or co-occurring conditions also far exceeded that of adolescents with trauma histories who were not poly-victimized. Similar results have been found among child and adolescent psychiatric outpatients; identifying a distinct poly-victimized subgroup of clients whose members experienced nearly four times as many types of maltreatment than other child clients and had more severe parent-rated externalizing behavior and clinician-rated impairment (Ford, Wasser, & Connor, 2011b). The vast majority of children and adolescents in the poly-victimized subgroup had trauma histories consistent with high ACEs and cumulative trauma, including substance abusing or psychiatrically impaired parents and had experienced violence or other traumatic stressors, as well as physical abuse, and sexual abuse.

Employing cluster analysis, a study with 689 urban fifth-graders identified 3 profiles: (1) minimally victimized children, (2) children victimized by peers, and (3) poly-victims. Poly-victims reported significantly more psychosocial distress and demonstrated poorer academic performance in comparison to the other classifications (Holt, Finkelhor, & Kantor, 2007b). Another study used LCA on data containing lifetime endorsement of 41 discrete incidents belonging to 5 broader categories of violence exposure, as well as lifetime status of PTSD and Major Depressive Disorder (MDD) in children referred to the United States Navy's Family Advocacy Program due to parent-inflicted child sexual abuse, physical abuse, or intimate partner violence (Grasso et al., 2011). Three classes of children best fit the data: children with exposure to multiple forms of violence and greater than 70% prevalence of PTSD and MDD, children with moderate exposure and less than a 35% prevalence of these disorders, and children with considerably less exposure and less than a 10% prevalence of these disorders (Grasso et al., 2011). Children in the class with the highest exposure to violence had less perceived parental and teacher support and were less likely to view themselves as competent and others as trustworthy, and were more likely to exhibit symptomatic alcohol and substance use and delinquent behavior at a 3-year follow-up compared to the less cumulatively exposed (and likely lower ACEs) children. Thus, findings from studies using statistical approaches to identifying children with complex trauma histories replicate those of the studies that defined ACEs, poly-victimization, and cumulative trauma on a logical or *a priori* basis.

Clinical Implications

Since research on ACEs, poly-victimization, and cumulative trauma is still in early stages, there are no set guidelines for how clinicians should assess and utilize information about their clients' histories of exposure to multiple adversities. However, there are a number of

implications that clinicians may consider. It is clear that exposure to multiple types of adversities tells us more about a client than simply knowing that the client has been exposed to any single type of adversity. First, a client with a history of multiple adversities is at elevated risk for high-risk behaviors, such as suicide, self-injury, and alcohol and drug abuse and dependence, which must be carefully assessed at intake and monitored throughout treatment.

Further, a traumatized client with multiple adversities may present with symptoms that are not fully captured by the current DSM-IV diagnosis of PTSD, and that result in multiple psychiatric diagnoses that are difficult to treat without an encompassing conceptualization such as DTD and multiple psychotherapeutic and pharmacologic interventions. Maria, for example, had received prescriptions for more than 15 different medications ranging from anti-depressants to stimulants to mood regulators to anti-psychotics, and had been seen (unsuccessfully) by more than 10 different psychotherapists who used psychodynamic, cognitive behavioral (for depression, substance abuse, and PTSD), parent behavior management, family systems, motivational enhancement, and in-home multidimensional and multisystemic therapies. However, neither she nor her caregivers had received trauma-informed education or psychotherapy focused on emotion regulation skills to manage biological and psychological stress reactivity. This would be the approach taken if the proposed Developmental Trauma Disorder is used as a treatment framework (see Ford, Blaustein, Habib, & Kagan Chapter), in order to focus treatment on addressing profound dysregulation in emotional, cognitive, behavioral, and relational domains (D'Andrea et al., in press). Third, knowing a child or adolescent has been exposed to multiple adversities should raise serious concern of subsequent exposure to adversity and potential trauma. Thus, clinicians might join with the family, child welfare workers, and other professionals in the community towards reducing the youth's risk of future exposure. Because adversity, poly-

victimization, and cumulative exposure to traumatic stressors are pervasive in these youths' lives in the home, school, neighborhood, and community, there is a need to intervene at multiple levels, which further implies the need to establish collaborative relationships among adults responsible for these youth in each of these contexts (see Navalta, Brown, Ellis, & Saxe chapter, this volume). While a large portion of this falls under child protection, we should also be cognizant of other, less salient forms of adversity that also contribute to the increased risk for psychopathology and repeat exposure yet are often undetected or unaddressed. Often overlooked or discounted is emotional abuse and neglect that occurs in the home. This includes a parent repeatedly telling a child that he is no good, unworthy, and unloved, as well as being emotionally unavailable to the child, ignoring the child's bids for attention and being insensitive to the child's emotional needs. In addition to having a direct, negative effect on mental health, an emotionally abusive family environment has been found to exacerbate the impact of other types of child maltreatment (Edwards et al., 2003). Non-physical bullying and online bullying are also often missed, yet have serious implications for emotional well-being as recent tragic cases of youth and young adult suicide illustrate. Finally, witnessing violence in the home and in the community is also often overlooked, yet living in a virtual "warzone," as Maria's story shows, can be a major contributor to the emotional, behavioral, and relational problems caused by ACEs, poly-victimization, or cumulative trauma exposure.

In addition to taking steps towards preventing future exposure, efforts should be made to help these children and adolescents establish protective resources within these contexts to help cope with future exposure to adversity and potential trauma. Protective resources can be interpersonal (e.g., perceived social support; Charuvastra & Cloitre, 2008) or intrapersonal in nature (e.g., protective cognitions; Cohen & Mannarino, 2000; Walter, Horsey, Palmieri, &

Hobfoll, 2010). Relevant to this topic is Conservation of Resources Theory (COR Theory; Hobfoll, 1989), which posits that an individual exposed to a potentially traumatic event experiences a loss of resources and is faced with the option to replace or substitute resources, or to succumb to what Hobfoll (2001) refers to as a *loss spiral*, in which loss begets more loss (also identified as posttraumatic decline). Indeed, regaining resources following a significant stressor is costly, as it demands utilization of existing resources to do so. While this investment is feasible for those with sufficient resources to facilitate maintenance, acquisition, and enhancement of resources following trauma, other individuals, whose resources are depleted and insufficient, are unsuccessful. The majority of children and adolescents who have been exposed to multiple adversities do not have sufficient resources to facilitate these proactive steps towards reinforcing protective resources; thus, it is up to clinicians, child welfare professionals, and other adults to foster protective resource enhancement.

The value of having information about a client's history of adversity and trauma clearly indicates the importance of adequately assessing it early in treatment. As reviewed elsewhere (Ford, 2011; Stover & Berkowitz, 2005; Strand, Sarmiento, & Pasquale, 2005), there are several instruments available to survey exposure to adversity and potential trauma in children and adolescents. The Traumatic Events Screening Inventory (TESI; Ford et al., 2000) and Violence Exposure Scales (VEX-R; Fox & Levitt, 1995) assess a wide variety of childhood traumas, and both have caregiver and child-report versions. The Child Trauma Questionnaire (CTQ; Bernstein, Ahluvalia, Pogge, & Handelsman, 1997) provides an excellent assessment of a range of maltreatment experiences. In addition to the JVQ, other detailed measures of intimate partner or family violence can be obtained with the Revised Conflict Tactics Scale (CTS; Straus, 1996) or the Partner Violence Inventory (PVI; Bernstein, 1998). Lastly, reliable methods have also been

developed to extract and rate severity of maltreatment experiences from case records (Barnett, Manly, & Cicchetti, 1993) and to integrate trauma data from multiple informants (Hawkins & Radcliffe, 2006; Kaufman, Jones, Stieglitz, Vitulano, & Mannarino, 1994)

Conclusion

As understanding of the way in which exposure to multiple types of traumatic experiences in childhood and adolescence can interfere with adjustment and the development of self-regulatory capacities grows, clinicians and researchers will be able to take a trans-diagnostic approach to assessment, case formulation, and treatment planning and monitoring rather than attempting to diagnose and treat an overwhelming array of symptoms and co-morbid disorders. Although the bio-psychosocial problems facing clients with a history of ACEs, poly-victimization, or cumulative exposure to traumatic stressors—and the corresponding challenges facing clinicians—are undeniably complex and daunting, taking a complex trauma framework derived from those three lines of research can paradoxically provide a degree of simplicity to assessment and treatment that is the result of an integrative understanding of the importance of focusing on addressing stress reactivity and self-regulation.

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