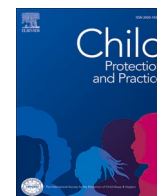




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## Advancing the science of adverse childhood experiences and resilience: A case for global and ecological perspectives

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### ABSTRACT

Research on adverse childhood experiences and resilience (the process of overcoming trauma) has been dominated by studies originating in wealthy democracies of the global north. We call for more global and ecological approaches not only for documenting the true global burden of childhood adversity, but also for advancing the science of resilience and understanding pathways to overcoming trauma. We identify several forms of trauma that need better consideration in prevalence estimates, including state, political, and institutional violence, crisis migration, climate change and related natural disasters, and global health crises such as the COVID-19 pandemic. We also need more nuanced analyses of culture and place and to recognize that the global south and global north are not monolithic concepts. We offer illustrative examples of how more global, ecological approaches can enhance our understanding of pathways to overcoming even high dosages of childhood adversity. One of the key insights of ACEs research, the dose-response relationship between trauma burden and outcomes, has been extended to research on resilience. Concepts that capture the total “dose” of positive assets and resources (people’s *resilience portfolios*) are showing how people might overcome even high doses of trauma. This work can become more global by including incorporating strengths and healing processes common in collectivist, versus individualistic, cultures. It can become more ecological by recognizing that physical environments—both natural and human-made built aspects—play key roles in resilience. Recognizing the intersectionality among these elements can take us to the next generation of trauma and resilience science.

The world landscape has undergone profound transformations in recent decades, witnessing unprecedented developments such as globalization and the proliferation of new information technologies. These changes have reshaped the way societies interact, bringing newfound connectivity, opportunities, and risks. Further, climate change has presented historic environmental challenges for all humanity and especially to future generations. Some scholars call this swirl of issues a *polycrisis*, referencing the increasing interconnections among longstanding problems such as wars, terrorism, political crises, and organized crime (Lawrence et al., 2024). This new global scenario leads us to reflect on whether the current understanding of *adverse childhood experiences* (ACEs), which usually focuses on family problems such as physical abuse, neglect, or parental substance abuse, is complete enough to explain the public health crises that children face today.

The purpose of this commentary is to highlight two issues that we believe are essential to advancing the field and better meeting the needs of children worldwide. The first is to invest in truly globalizing research on ACEs and resilience, including not only replicating work from WEIRD (wealthy, educated, industrialized, rich, democracies) countries (Henrich et al., 2010) in other settings but operationalizing differences

that affect how this public health crisis manifests. There include differences in health care equity and cultural differences, such as those between collectivist and individualistic communities. A global approach allows us to broaden our perspective and delve deeper into the complexities of childhood adversity. A global approach also helps us know which issues need to be targeted in which contexts. The second purpose is to call for a greater emphasis on the impact of place and community by focusing on the ecological contexts of ACEs, inequities in their experiences, and pathways to recovering from them (Karatekin et al., 2022). A global, ecological approach to the true burden of trauma (events such as ACEs leading to threats or actual harm and injury, humiliating and shaming, or witnessing harm to others; Comas-Díaz et al., 2019) is also necessary to advance the science of resilience and healing. Existing research on resilience (the multidimensional process of overcoming trauma; Hamby et al., 2018) too often focuses on relatively narrow topics and assumes that trauma exposures are in the past. Nonetheless, despite the high global burden of trauma, many people overcome childhood trauma exposures and put together the pieces of a good life. It is critical that we better understand how positive outcomes occur.

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## 1. The current state of ACEs research

The first studies on adverse childhood experiences, conducted in the U.S. and largely reflecting that cultural setting, met with considerable success. The original study on adverse childhood experiences ACEs (Felitti et al., 1998) was a major discovery that led to a broad field of knowledge about the long-term effects of ACEs on physical and mental health. In that study, Felitti and colleagues asked adult members of a health maintenance organization about numerous childhood experiences, including physical, psychological, and sexual abuse, in addition to family problems such as parental substance misuse and poor parental mental health. They found that higher doses of ACEs were associated with a variety of worse health outcomes. Adults who experienced four or more ACEs (compared to those who experienced none) were 4–12 times more likely to suffer from alcoholism, drug use, depression, and attempted suicide and 2 to 4 times more likely to suffer from smoking, poor self-perceived health, and sexually transmitted diseases. Perhaps even more notably, the number of ACEs exposures was associated with several significant physical health problems, such as ischemic heart disease, cancer, chronic lung disease, and liver disease. Later research confirmed the strong associations between ACEs and numerous physical and mental health problems, in addition to risky behaviors and increased healthcare utilization (e.g., Hughes et al., 2017; Kalmakis & Chandler, 2015). Important work has been done linking ACEs to a variety of health biomarkers and starting to tease out the biological pathways accounting for the links between trauma exposure and poor health outcomes (Hamby et al., 2021; Soares et al., 2021). However, this research is concentrated in the global north (Madigan et al., 2023). The next generations of ACEs and resilience research need to move toward global perspectives.

Other limitations soon became apparent as well. Researchers realized that the original ACEs measures were not capturing the true breadth of childhood adversity, for example omitting adversities that occurred in school or community contexts. Work on *polyvictimization* (experiencing multiple types of violence) expanded our understanding of the cumulative childhood exposure to trauma to include peer and community victimization as well as victimization by family members (Finkelhor et al., 2007, 2015). This led to the inclusion of numerous other forms of victimization, including school bullying, robberies, non-familial assaults, hate crimes, and witnessing and other indirect exposures to violence. Two nationally representative samples have demonstrated that indices which include peer and community violence explain more variance in outcomes than the traditional ACEs categories (Finkelhor et al., 2013, 2015). Polyvictimization research also demonstrated that most types of violence are closely interconnected (Hamby & Grych, 2013). Wade and colleagues (2014) also examined adversities not included in the original studies, such as being raised in single-parent homes, exposure to community violence, economic hardship, and discrimination. The international version of the ACEs questionnaire includes exposure to war and ethnic conflict, pushing ACEs estimates to at least 3 in 4 youth in global research (Pace et al., 2022). Assessments of childhood victimization have also included victimization perpetrated online (Guerra et al., 2022; Leonard, 2010; Nur Say et al., 2015). The burdens of these other forms of trauma have been established in many countries around the world (e.g., Cárdenas et al., 2022; Pinto-Cortez et al., 2023; Ramirez Labbe, Santelices, Hamilton & Velasco, 2022). The specific forms of adversities that have been assessed vary considerably across studies (Karatekin et al., 2022). Nonetheless, evidence suggests that all these forms contribute to a person's trauma dosage.

The work of these authors has helped us to better understand the true burden of childhood trauma. Yet, gaps remain. The Juvenile Victimization Questionnaire (JVQ; Finkelhor et al., 2005), which led to the first nationally representative U.S. estimates of polyvictimization as well as many specific adversities such as bullying and statutory rape, is probably the most comprehensive effort to date. The JVQ was designed to represent the main subdisciplines of youth victimization research: child

maltreatment, peer victimization, sexual victimization, community crime, and indirect exposure to victimization such as exposure to domestic violence. However, some topics, such as hate-motivated violence, received minimal coverage. For this commentary, we would like to draw readers' attention to several other forms of trauma that affect many children but are seldom included in ACEs research.

## 2. Issues that need better incorporation into ACEs and trauma research

Important forms of victimizations have still not been well-integrated into the ACEs or polyvictimization frameworks. We propose that two factors should organize measures of childhood adversity, to obtain more accurate assessments of the true burden of child victimization. First, a global approach is needed to truly capture the childhood trauma burden in diverse settings worldwide. Unfortunately, most ACEs research still has a U.S. lens—sometimes even when conducted outside the U.S. (Madigan et al., 2023). Some problems that are common in other countries are relatively rare—and even more rarely studied—in the U.S. or other WEIRD countries. As we have already said, the ACEs framework and many ACEs instruments were developed in the context of the global north. Or even more specifically, the dominant cultures of the U.S. and other WEIRD countries. It is time for new conceptualizations that incorporate other contexts.

Second, an ecological approach (incorporating social and physical environments) can ensure that all types of adversity are included. This includes not only the original ACEs items on experiences in the home, but also experiences in schools and communities. An ecological approach also recognizes that many interactions now occur online. The Internet has become an important forum for violence. Further, an ecological approach points us to state, political, and institutional violence. An ecological approach can also help us appreciate the impacts of racism and other forms of discrimination, which are forms of trauma (Comas-Figueras et al., 2019).

We highlight five examples of implications that follow from a more global, ecological approach to ACEs and child victimization. Four of these are topics that should receive more research attention: state, political, and institutional violence; crisis migration; climate change and related natural disasters; and global health crises such as the COVID-19 pandemic. The last is to engage in more nuanced analyses of culture and place, going beyond simple country comparisons and truly operationalizing cultural differences and variations in equity. We end with some clinical considerations resulting from these issues.

### 2.1. More attention to state, political, and institutional violence

One of the biggest remaining silos in child victimization research is the isolation of work that addresses systemic violence perpetrated or facilitated by societal actors such as governments, social institutions, and other political actors. War, ethnic violence, and tribal conflicts are unevenly distributed around the world, but the traumatic impacts on children—and especially how these intersect with other childhood adversities—need more consideration in regions where they occur. This category also includes violence perpetrated by organized crime, a powerful actor in many countries. Organized violence includes sex and labor trafficking, which often affects children and adolescents. This category also includes institutionalized abuse in care institutions. Although some measures, such as the Juvenile Victimization Questionnaire, ask about sexual abuse by nonfamilial perpetrators, it is likely that the abuses—and, critically, the additional traumas of the cover ups—from organizations like the Catholic Church and the Boy Scouts are still undercounted (Pinto-Cortez et al., 2022; Toro et al., 2023). The impacts of historical trauma (multigenerational experiences of trauma), police violence, and other institutionalized trauma also need more consideration. We believe that it is important that new conceptualizations of vulnerability in childhood incorporate the full cultural, political,

and economic contexts of children.

Political turmoil affects hundreds of millions of people. We seem to be in a time of rising authoritarianism and illiberalism (Cooley & Nexon, 2022), and this likely has substantial health impacts as these create chronic stressors on populations. Several states have failed or are approaching failure in terms of providing basic governmental supports to their populations. At the time of writing, this includes places like Venezuela and Haiti. These often create not only local crises but also immigration crises as people try to escape these political disasters.

## 2.2. Incorporate crisis migration into the ACEs framework

Crisis migration refers to unplanned moves triggered by some event, such as a natural disaster or outbreak of war. The migration crisis associated with political conflicts, wars, or social problems such as drug trafficking has exacerbated the ACEs experienced by children from many geographical and cultural contexts (Ertanir et al., 2023; Pinto-Cortez et al., 2024).

The global refugee and forced displacement crisis includes more than 43 million children around the world according to UNICEF's recent estimates (<https://www.unicef.org/press-releases/number-displaced-children-reaches-new-high-433-million>). Many of these children are forced to undergo long migration processes, in risky conditions, and without the company of caregivers. This entails the risk of suffering a series of ACEs. Their parents' experiences of ACEs or other traumas—and the resulting consequences—can also add to children's trauma burden, complicate their needs, and reduce the likelihood of getting those needs met (Bryant et al., 2018). We need broader lenses that consider the needs of entire families.

All these forces create significant challenges for countries that host migrants, because they have the responsibility of caring for people who have probably suffered exceptionally high ACEs in their countries of origin or along their passage, some forms of which may not be common in the destination country. Or they can exist, but at a different intensity (Landa-Blanco et al., 2020). For example, in countries with extensive drug trafficking, extortion of families and pressure for children to join criminal gangs as “soldiers” are common forms of violence. These traumas are not present—or at least not very evident—in many wealthier and relatively stable democracies.

## 2.3. Consider the impacts of climate change and related natural disasters

An ecological and global approach also helps us broaden the ACEs concept beyond interpersonal victimizations and adversities. The traumatic impacts of natural disasters and climate change also need to be incorporated into assessments of lifetime trauma dosage. Climate change has been associated with various natural disasters around the world (tornadoes, floods, forest fires). Vergunst and Berry (2022) postulate that children and adolescents are especially vulnerable to these disasters because they have a more limited capacity to avoid them on their own and are at greater risk of physical or psychological consequences (e.g., Guerra et al., 2014; Guerra et al., 2018).

In fact, while we were writing this commentary, all authors were in Chile and witnessed a mega forest fire that reached populated parts in the Valparaíso region—one of the largest forest fires in the history of the country and one of the deadliest worldwide in the last 15 years, leaving more than 130 dead and between 7000 and 12,000 houses destroyed. This fire affected thousands of children directly, but others indirectly, for example by preventing access to education and healthcare due to damage to infrastructure such as clinics and schools (<https://cooperativa.cl/noticias/pais/region-de-valparaiso/incendios-autoridades-buscan-que-ninos-de-zonas-afectadas-inicien-sus/2024-02-19/143931.html>).

The high frequency and intensity of these natural disasters invites us to reflect on the differentiation between interpersonal and non-interpersonal ACEs. Because climate change is caused by human

beings, these disasters have an interpersonal component. The differentiation between ACEs with and without an interpersonal component is not minor because it has implications for the ways in which victims attribute responsibilities for events. Whether an event is perceived to have occurred by chance or is the fault of external parties has an important impact on the recovery process (Forbes et al., 2014). Moreover, acknowledging the interpersonal component of natural disasters prompts reflection on whether those accountable for climate change should bear economic or criminal responsibility for the victimization of children and youth. This includes countries with high pollution levels, construction firms erecting buildings in flood-prone zones, and municipalities lacking adequate measures against forest fires (Guerra et al., 2018).

## 2.4. Include global health crises such as COVID-19

The COVID-19 pandemic highlighted how quickly the world can be affected by massive, rapidly spreading diseases. This health crisis affected the entire world population and may have been the first truly global trauma. Children and adolescents were not immune to COVID-19 but were perhaps most affected through health measures taken by many countries. The closing of schools and the shifting to online learning, among other restrictions, affected children's social and educational development as well as their mental health (Anderson et al., 2022). It is also critical to note that, despite the global nature of this trauma, the impact was also substantially influenced by inequality. Many children's parents were more at risk because they could not work from home. Suddenly, access to high-speed Internet became a critically important resource, even for the capacity to stay in school, but was not equally available to all children (Li et al., 2023). Other pandemics, albeit smaller in scale, have also inflicted substantial trauma in their locations and we are not free of this danger in the future.

## 2.5. More nuanced analyses of culture and place

We need global research that goes beyond the boundaries of nation-states and simple comparisons across countries and starts to examine the interdependence among regions as well as the variations within them. Common concepts such as “global south” and “global north” can be misleading. Many countries—even those considered emblematic examples of the “global north”—contain regions that are characterized not only by poverty but also by colonial-type oppressions such as political disenfranchisement and state-sponsored violence. Trefzer et al. (2014) suggested that areas of the U.S., especially communities with high percentages of Black residents, could be seen as global-south-like pockets in the global north. Some Indigenous territories in the U.S., Canada, Australia, northern Europe and elsewhere have similar characteristics. Likewise, there are areas of considerable privilege in the global south. We need to move beyond simply viewing countries based on perceptions of a common level of industrialization, common language, or common historical background (former colonies, for example). A more nuanced view of the global north and global south can extend Crenshaw's (1991) idea of intersectionality, which originally focused on characteristics such as class, ethnic background, and gender. The notion of intersectionality has underappreciated ecological aspects, because the meanings of many of these attributes are impacted by place and socio-territorial context.

## 2.6. Clinical implications of a broader ACEs framework

Healthcare providers who support children from countries in crisis need to be familiar with these circumstances and include these experiences in estimates of trauma exposure. Otherwise, providers may reach incomplete or even erroneous conclusions. Even in cases where the forms of violence are common in both countries (country of origin and host country), it is important to be aware that the way in which this

violence occurs can be radically different. For example, robberies exist in all cultural contexts, but the violence associated with them, and the risk of death varies from one country to another. Therefore, it is necessary to better understand the context in which the violence occurs to determine the level of fear or associated stress that might have been experienced—and for how long. The chronic stress of living in dangerous countries likely adds substantially to children's allostatic loads—the biomarkers such as inflammation and cortisol reactivity that are common sequelae of trauma (Hamby et al., 2021).

When arriving at new destinations following political- or disaster-triggered crisis migration, refugee families may suffer further trauma due to acculturation, segregation, and discrimination. Meeting the needs of these groups can be challenging because of variations in cultural norms regarding seeking mental health care, the lack of interventions that have been adapted and evaluated across various cultures, and the challenges in finding providers with the necessary cultural and linguistic skills (Byrow et al., 2020). We need much more information and resources to help these families heal. For this, we also need new approaches.

### 3. A better understanding of trauma promotes a better understanding of resilience

Perhaps surprisingly, a true reckoning with the actual burden of trauma helps us better understand and promote resilience and healing. Resilience can be defined as the process of overcoming trauma (Hamby et al., 2018, 2021). More than just an individual characteristic, resilience is best conceptualized as a multidimensional, dynamic, social ecological process (Masten, 2001; Ungar, 2021). The dosage concept—so influential in ACEs research—is proving useful on the resilience side of the equation as well. For example, *positive childhood experiences* (PCEs) are typically assessed with an ACEs-like checklist of supportive and healthy indicators of the childhood environment (e.g., Bethell et al., 2019). Like the original ACEs items, many PCE scales include items that also focus on the childhood family environment, such as feeling able to talk with family members about feelings, and feeling safe and protected by an adult in the home. *Poly-strengths* is an indicator of the breadth and diversity of individuals' resilience portfolios (Hamby et al., 2018; 2020b). A *resilience portfolio* is comprised of all the personal assets and external resources that someone can access to help them overcome trauma. This includes individual, family, and community strengths. It is typically assessed by an index indicating how many strengths someone has at an above average level. A growing body of research on PCEs and poly-strengths indicates that we can minimize the effects of trauma with sufficient strengths (Bethell et al., 2019; Hamby et al., 2018; 2020b; 2021).

We need a global and ecological approach to thinking about strengths that can counter the effects of trauma too. Like research on trauma, research on resilience has tended to concentrate on a limited set of factors. In resilience research, there has been a strong focus on characteristics such as perseverance, determination, emotion regulation, and grit. Indeed, many resilience questionnaires primarily assess regulatory strengths like these, which help us manage behavioral and emotional impulses. There has also been considerable research on social support as a key resource for overcoming trauma (Guerra et al., 2018; Hamby et al., 2020a; Ungar et al., 2015). However, other elements of the social ecology have received less attention, especially community-wide resources such as good healthcare, strong schools, and accessibility to cultural resources like libraries and museums.

In the resilience portfolio model, meaning making (connecting to something larger than oneself) is another domain for helping people recover from trauma—and perhaps most important for achieving thriving after trauma (Hamby et al., 2018; 2020b, 2021). Meaning making does not have to be related to one's trauma history. For example, creating music or involvement with social justice groups can confer meaning without any direct connection to prior trauma (Hamiti et al.,

2024). In our experience, meaning making often involves moving from perceiving oneself as a victim (recognizing trauma and suffering) to survivor (identifying one's own strengths and the environmental resources that allowed someone to survive ACEs) to true resilience (someone who has experienced trauma but is not defined by it) and can re-orient toward other sources of meaning. This is much like post-traumatic growth processes.

Like research on ACEs, polyvictimization, and trauma, resilience research has also largely been conducted with a lens firmly grounded in the U.S. and elsewhere in the global north. Sometimes even when the research takes place outside of the global north. We need an ecological and global approach to research on overcoming trauma, just as we need an ecological and global approach to fully document the extent and negative consequences of trauma. Here are a couple of thoughts about how to move the field forward in those respects.

#### 3.1. Collectivist vs individualistic cultures

One common way of distinguishing cultures is to consider whether they have a collectivist or individualistic orientation. The U.S., Canada, Australia, and Western Europe are usually considered to be the exemplary cases of individualistic cultures (or at least the dominant cultures within these countries), with strong emphases on personal achievement and individual preferences. In individualistic cultures, it is considered acceptable, even admirable, to place career, educational, and achievement goals over family ties and obligations. In contrast, collectivist cultures, broadly speaking, value the needs of communities over the needs of individuals. People are generally expected to consider and prioritize filial piety, family solidarity, and duty when making life choices (Kelmendi & Hamby, 2023).

Because most research on trauma and resilience has taken place in individualistic cultures, the adversities and strengths that have been studied tend to be individualistic too. On the adversity side, psychology, social work, and related fields have focused on family violence, bullying, and other interpersonal violence that takes place between individuals and small groups. We need more research on collective violence. We also need more attention to potential differences, such as greater use of "honor"-motivated abuse and shame as a tool of harm in collectivist cultures (Lowe et al., 2021).

Regarding strengths, there are collectivist ways to conceptualize many important strengths. For example, a scoping review of resilience research in Kosovo, a predominantly collectivist culture in southeastern Europe, found that *nationwide meaning making* emerged as a unique concept (Kelmendi & Hamby, 2023). Kosovo declared its independence recently, in 2008, meaning that is within the memory of most adults in Kosovo. Instead of only thinking about meaning making in an individualistic way, many studies in Kosovo have found that people feel part of a joint enterprise of working together to form a new nation, a phenomenon that has been named nationwide meaning making.

Many incentives in the systems governing research are slowing down scientific advances. Journal reviewers and grant reviewers often reward people for using "established" tools, for example. Although there are benefits to established tools, over-reliance on past tools also stifles innovation. Unfortunately, pressures to use established tools also means that most trauma and resilience research is conducted using tools developed in the global north, and even within that region, on tools developed in the most individualistic cultures. Nationwide meaning making is just one example of a psychosocial strength that we miss if we stick to established tools developed in a limited region of the world.

The healing processes can look different in collectivist cultures too—and insights from these cultures may prove beneficial in many settings. Victims of collective violence—like the state, political, and institutional violence mentioned previously—may need collective solutions for healing. These can include rituals, memorials, and societal recognition as a 'survivor' of collective violence, or processes of restorative justice versus the more punitive approaches common in



much of the global north (Strang et al., 2013). The truth and reconciliation commissions (TRC) created in South Africa after apartheid—since expanding to many other communities—are an excellent example (Tutu, 2009). Many horrific acts of violence were perpetrated as part of enforcing the apartheid regime. Nonetheless, the South African TRC emphasized forgiveness and reparations over prosecution and punishment. Although TRCs need to be embedded in other political and therapeutic processes, they have potential to provide a framework for collective healing (Allan & Allan, 2000). Similar endeavors have occurred elsewhere around the world, especially in the global south (Aya Smitmans, 2017). Although no one endeavor will address all the impacts of trauma, such practices can enrich resilience portfolios in many communities.

These examples show how a more ecological and global approach can highlight new protective factors and new interventions that are not present in mainstream resilience literature. Individualism and collectivism are far from the only characteristics that distinguish countries from each other, but these attributes provide one example of how we can begin thinking more globally and put prior work into a larger context.

### 3.2. Natural and built environments

An ecological approach to strengths would also include a stronger focus on the resources of our physical environments and how those can help anyone seeking to minimize the impact of trauma. Especially given that climate change is increasing the number of environmental traumas, it is more important than ever to look at environmental strengths. The natural environment refers to access to *green space*, whether in the form of parks, gardens, or undeveloped land. It also includes *blue space*, which is access to bodies of water. The built environment refers to buildings and other human-made structures. Assets of the built environment include features like walkability of neighborhoods. Unlike the social environment, where it has been surprisingly difficult to identify factors that are reliably associated with good outcomes for traumatized communities, better natural and built environments consistently promote wellbeing for communities that have withstood trauma (Banyard et al., 2024). Environmental features also connect to issues of inequality and political violence. Poorer communities are less likely to have parks and are more likely to be food deserts. The ravages of war and ethnic conflict often include the degradation of the natural environment and the destruction of key elements of the built environment, like hospitals. Climate change is also harming environments disproportionately. We need to be more intentional about not only bringing environmental damage into trauma models, but also bringing environmental resources into our models of resilience. Although it is too soon to say whether environmental factors are more potent than individual factors, they provide another option for boosting resilience portfolios and promoting wellbeing after trauma. Further, they have been relatively neglected compared to individual efforts, despite the potential for widespread public health benefits. Investing in rebuilding and/or improving the natural and built environments can lift the wellbeing of entire communities.

## 4. Conclusion

The world faces new and old risks that severely impact adverse and positive childhood experiences, including poverty, war, terrorism, climate change, and technological change. All these global events provide challenges and opportunities to develop a complex understanding of childhood reality and pathways to resilience and healing. In addition, the foundational work on ACEs and trauma in the global north has paid insufficient attention to cultural diversity and the huge inequities in experiences of ACEs. Incorporating additional dimensions into the conceptualization of ACEs and resilience could enrich our understanding of children's experiences worldwide. We can better recognize the different forms of ACEs that affect children and the assets and resources

that help mitigate their impact. We can also better create inclusive and resilient spaces for children to flourish.

In this paper, we have highlighted how more global and ecological perspectives can take ACEs science to the next level. We need to do more to incorporate the true burdens of trauma, including that caused by institutional actors and that related to climate change and other aspects of the environment. We likewise need more global and ecological approaches to resilience. For example, we need to incorporate strengths and approaches to healing that are more common in collectivist (versus individualistic) cultures and recognize how features of the natural environment can also contribute to overcoming trauma. We believe that more comprehensive and holistic approaches to adverse childhood experiences—and the overcoming of them—will help us all to reach our shared goal: reducing the global burden of trauma.

### CRedit authorship contribution statement

**Sherry Hamby:** Writing – review & editing, Writing – original draft, Project administration, Conceptualization. **Cristobal Guerra:** Writing – review & editing, Writing – original draft. **Edgardo Toro:** Writing – review & editing, Writing – original draft. **Cristián Pinto-Cortez:** Writing – review & editing, Writing – original draft.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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