Social Policy & Society (2019) 18:3, 425-434
 doi: 10.1017/S1474746419000071

The Potential of Early Intervention for Preventing and Reducing ACE-Related Trauma

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Too many children face disadvantages that negatively impact their health, happiness and future life chances. Adverse Childhood Experiences (ACEs) represent a particularly traumatic set of circumstances that have been found through research to dramatically increase the likelihood of poor adult physical and mental health outcomes. While we do not view ACEs to represent the only or necessarily the most serious risks to children's development, we do recognise them to pose a substantial threat. This article identifies twenty-four interventions with causal evidence of preventing or reducing ACE-related trauma and considers how they could be offered through system-wide strategies aimed at improving the lives of children who are at the greatest risk. While we are not suggesting that these interventions – on their own or in combination – represent a magic solution to ACEs, or the wider societal issues that contribute to them, we do propose that knowledge about their effectiveness can improve the quality of services that support the needs of highly vulnerable children.

Keywords: Adversity, trauma, childhood, early intervention, prevention.

Introduction

The Early Intervention Foundation (EIF) was set up as an independent charity in 2013 to increase the availability of effective interventions for children and families who need them the most. As a government What Works Centre, EIF accomplishes this by synthesising and disseminating information about child and family interventions with evidence of improving child outcomes. EIF does this through several complimentary processes:

- The EIF Guidebook[1], which provides information about the strength of evidence underpinning interventions that aim to support children's development. Information about evidence strength is obtained through an assessment process that considers the extent to which causality can be attributed to the intervention model by comparing its evaluation evidence to a set of internationally recognised evidence standards[2].
- Ongoing 'What Works' literature reviews that summarise what is known about effective practice in children's services. To date, EIF has conducted six comprehensive reviews identifying interventions and practices with causal evidence of improving outcomes associated with Adverse Childhood Experiences (ACEs):

- Early Intervention in Domestic Violence and Abuse[3] (Guy *et al.*, 2014)
- What works in enhancing social and emotional skills development during childhood and adolescence?[4] (Barry *et al.*, 2015).
- Foundations for Life: What works to support parent-child interaction in the early years[5] (Asmussen *et al.*, 2016)
- Interparental conflict and outcomes for children in the contexts of poverty and economic pressure[6] (Acquah *et al.*, 2017)
- Improving the effectiveness of the child protection system: A review of the literature[7] (Barlow and Schrader-McMillan, 2017)
- What works to enhance the effectiveness of the healthy child programme[8] (Asmussen and Brims, 2018).

Although much of EIF's work focuses on the effectiveness of early intervention programmes, EIF also considers how evidence can improve early intervention practice within local government systems. EIF's work in this territory highlights the crucial role effective interventions can play in preventing childhood adversities from occurring in the first place and helping children cope with any associated trauma. In this article, we consider how interventions with causal evidence (as assessed against our evidence standards[9]) of improving child outcomes might be used to reverse negative developmental trajectories associated with ACEs. We also identify some of the barriers involved in providing effective interventions and summarise gaps in the current evidence base. We conclude with recommendations for how these barriers might be overcome through system-wide intervention strategies.

What we do and do not know about ACEs

ACEs are negative circumstances occurring before the age of eighteen involving six traditional categories of child maltreatment and six adverse family circumstances (Finkelhor *et al.*, 2013; Nickerson *et al.*, 2013).

- Physical abuse
- Sexual abuse
- Emotional abuse
- Physical neglect
- Emotional neglect
- Witnessing violence involving a parent, sibling or peer
- Substance misuse within household
- Household mental illness
- Parental separation or divorce
- Incarcerated household member
- Household crimes
- Parental Death

Multiple international studies, including those conducted in the UK, confirm a strong and graded relationship between the number of ACE categories experienced during childhood and the risk of chronic diseases and mental health problems in adulthood (Bellis *et al.*, 2013; Bellis *et al.*, 2014). In particular, studies show that the presence of four or more ACE categories during childhood substantially increases the likelihood of a variety of

https://doi.org/10.1017/S1474746419000071 Published online by Cambridge University Press

negative adult outcomes (Hughes *et al*., 2017). Examples of negative outcomes associated with ACEs include life-threatening diseases such as cancer and diabetes, ongoing mental health problems, substance misuse, intimate partner violence (IPV), self-harm and suicide.

Studies further observe that ACEs are prevalent. Up to two-thirds of the population experience at least one ACE before the age of eighteen and at least one quarter experience four or more ACEs (Center for Disease Control and Prevention, 2013; Hughes *et al*., 2017). Studies also show that it is not uncommon for ACEs to be transmitted across generations (Finkelhor *et al*., 2007; Braveman and Barclay, 2009). For example, studies have found that a history of child abuse and neglect can increase the risk of parents abusing their own children by over twofold (Wekerle *et al*., 2007; Kim, 2009).

It is therefore clear that ACEs can have a profound and negative impact on human development. However, it is also clear that much remains to be known about the causes of ACEs and the processes that affect their impact. For example, the mechanisms linking ACE's to negative adult outcomes are still strongly debated. Historically, it was assumed that the association between ACEs and adverse adult health outcomes could largely be explained by intermediary health risk behaviours, (for example, smoking and substance misuse), which children and adults use to cope with ACE-related trauma (Felitti *et al*., 1998). However, more recent research suggests that ACE-related trauma may also disrupt important epigenetic and neurobiological processes that affect the development of the brain and immune and endocrine systems, thus reducing children's physical and mental resilience (McGowan *et al*., 2009; McCrory *et al*., 2011).

Nevertheless, studies also observe that a history of ACEs does not inevitably result in poor adult outcomes. For example, studies consistently show that the majority of individuals who were abused as children do not go on to abuse their own children (Schelbe and Geiger, 2017). Likewise, the majority of those experiencing four or more ACEs do not necessarily develop life-threatening diseases (Narayan *et al*., 2017). These findings therefore make clear that the experience of multiple ACE categories is by no means deterministic and that a variety of physical and psychological processes also work to mitigate their deleterious effects. More research is therefore necessary to understand what these protective processes are, so that interventions can be developed to support them (Kinner and Borschmann, 2017).

It is also worth noting that relatively little is known about the comparative contribution of individual ACEs and ACE clusters on negative adult outcomes. For example, studies show that ACEs are commonly predicted by multiple risk factors occurring at the level of the child, family, community and society (Sidebotham *et al*., 2001; Sidebotham *et al*., 2006). However, the combination of these factors is potentially endless and we have yet to understand which combinations are the most detrimental (Kinner and Borschmann, 2017). Relatively little is also known about the role economic hardship plays in predicting and amplifying the impact of various ACEs and ACE clusters (Metzler *et al*., 2017). Such knowledge is essential for knowing when and how to intervene, as well as plan services that can effectively reduce ACE-related inequalities.

Interventions with evidence of preventing or reducing ACEs or ACE-related trauma

Findings from the ACE literature consistently highlight the negative impact multiple childhood adversities can have throughout the lifespan. They also emphasise the need

https://doi.org/10.1017/S1474746419000071 Published online by Cambridge University Press

for interventions that prevent adversities from occurring in the first place, as well as increase children's resilience when ACEs do occur. However, the complex and pervasive nature of ACEs suggests that there is no single or simple solution (Belsky, 1993). Instead, system-wide strategies involving multiple interventions are required to adequately prevent and reduce the impact of ACEs (Yoshikawa *et al.*, 2012). Such strategies would ideally provide a comprehensive package of universal, targeted-selective and targeted-indicated support aimed at meeting a range of child and family needs (O'Connell *et al.*, 2009; Wulczyn, 2009).

To date, the EIF What Works reviews and ongoing Guidebook assessments have identified twenty-four interventions and practices with causal evidence of preventing or reducing ACEs and ACE-related trauma. These activities represent ten separate intervention categories that can be delivered at the universal, targeted-selective and targeted-indicated level. While this list is by no means exhaustive, it is representative of the kinds of interventions that could be offered in combination to prevent and reduce the impact of ACEs at the population level.

Universal interventions are activities made available through or alongside universal services, such as health visiting and schools. Although the impacts for universal interventions tend to be small to moderate (ranging from .20 to .40) they also tend to be relatively inexpensive. Examples of universal activities with causal evidence of reducing ACEs and ACE-related risks include:

- **Perinatal mental health screening.** Studies show that maternal mental health screening leading to effective treatments can substantially reduce many of the negative symptoms associated with a variety of maternal mental health problems during the perinatal period.
- **Perinatal Intimate Partner Violence (IPV) screening and advice.** Studies show that IPV screening and advice integrated into routine antenatal care can increase mothers' awareness of abusive intimate partner behaviours and reduce their risk of further victimisation when leading to effective advice and treatment.
- **Social-emotional learning (SEL) interventions.** SEL interventions are school-based curriculums that provide children with strategies for increasing emotional resilience. Although there is no direct evidence that SEL interventions reduce ACE-related trauma, SEL interventions have consistent causal evidence of improving children's emotional wellbeing, reducing substance misuse risk and improving school achievement (Durlak *et al.*, 2011). Examples of SEL interventions with causal evidence of increasing children's resilience and reducing ACE-related risks include Advanced Life Skills Training, Friends for Life, the Good Behaviour Game, Lion's Quest Skills for Adolescent Behaviours, PATHs, and Positive Action.
- **Co-parenting support.** Co-parenting support provides couples with strategies for increasing family harmony by helping couples work together as a co-parenting team. Studies show that couples are particularly receptive to co-parenting advice when it is offered at key transitions in their children's development. Family Foundations has causal evidence of reducing couple conflict and improving children's behaviour when offered to couples expecting their first child. School children and their families and Strengthening Families 10 to 14 have similarly been found to improve children's behaviour and increase family harmony when offered to families when children enter primary and secondary school respectively.

Targeted-selective interventions are those offered on a preventative basis to children and families identified at being at particular risk of ACEs, although they may not be

https://doi.org/10.1017/S1474746419000071 Published online by Cambridge University Press

experiencing any specific ACE-related trauma. The Family Nurse Partnership[10] (FNP) programme is the only intervention identified by EIF thus far with causal evidence of preventing childhood adversity from occurring in at-risk populations. FNP was developed as a preventative intervention for first-time teenage mothers and their children who are particularly vulnerable to ACEs. FNP has good evidence in the United States and the Netherlands of reducing the risk of child maltreatment and IPV, although these findings have not been replicated in the UK.

Targeted-indicated interventions are those that aim to reduce ACE-related trauma and prevent the intergenerational transmission of ACEs. When implemented to a high standard, the impact of these interventions appears to be high (effect sizes range from .7 to 1.00) Examples of targeted-indicated interventions with causal evidence of improving the outcomes of children and families with a history of ACEs include:

- **Interventions for parents at risk of maltreating their child.** A primary aim of these interventions is to replace maltreating parenting behaviours with age-appropriate strategies for positive parent-child interactions. Examples of high-impact parenting interventions with causal evidence of reducing the risk of physical and emotional maltreatment include those offered through the Incredible Years and Triple P series.
- **Intensive psychotherapeutic support for parents and children at risk of child maltreatment because of ACE-related trauma.** A primary aim of intensive psychotherapeutic treatments is to help vulnerable parents work through traumatic past experiences as a way of helping them develop more positive relationships with their children. Examples of psychotherapeutic interventions with causal evidence of reducing maltreatment risk and child and parent trauma include the Lieberman model of Child-Parent Psychotherapy and the Child First programme.
- **Individual therapies offered to children who have experienced trauma or abuse.** Trauma-focused Cognitive Behavioural Therapy is an example of an individualised therapeutic intervention with causal evidence of reducing symptoms of ACE-related trauma and increasing children's resilience.
- **Interventions for separating or divorcing couples.** Acrimonious parental separation is a highly prevalent ACE. Triple P Family Transitions has causal evidence of improving children's behaviour and reducing parental anger when offered to separating couples.
- **Intensive interventions to prevent children going into care.** The trauma associated with ACEs frequently increases the likelihood of highly aggressive child behaviours that can lead to out-of-home care. Intensive interventions are therefore often necessary to reduce aggressive child behaviours and improve family functioning. Interventions with causal evidence of reducing the need of out-of-home care include Multisystemic Therapy (MST), Functional Family Therapy (FFT), Multidimensional Family Therapy, Treatment Foster Care Oregon Adolescent (TFCO-A) and Treatment Foster Care Oregon Prevention (TFCO-P). Multisystemic Therapy Child Abuse and Neglect (MST-CAN) additionally has evidence of reducing child maltreatment risk when offered to parents who have maltreated their child.

Trust-building as a core intervention component

Although the twenty-four interventions identified here represent a diverse range of intervention models, they all recognise the importance of child and parent trust-building as a core intervention component. This is because trust is essential for intervention

https://doi.org/10.1017/S1474746419000071 Published online by Cambridge University Press

participants to feel safe and motivated to work through ACE-related issues (National Scientific Council on the Developing Child, 2015). Trust-building is not only a central feature of targeted-indicated interventions addressing ACE-related trauma, but also universal activities which aim to prevent ACEs from occurring in the first place. For example, studies show that the success of screening activities is reliant on participants perceiving practitioners as trustworthy and that confidential information will be dealt with appropriately and sympathetically (Todahl and Walters, 2011). Similarly, studies show that universal SEL interventions are most effective when they are delivered through supportive school environments that encourage children's trust in the teacher and each other (Oberle *et al.*, 2016).

However, trust-building is particularly challenging when individuals have learned to mistrust others through the experience of multiple ACEs. Thus, high levels of practitioner skill and time is often necessary for practitioners to gain the trust of intervention participants and help them stay motivated to work through difficult issues (Kazdin and McWhinney, 2018). Practitioner skill is, in part, determined by practitioners' previous experience and qualifications, but also by the support they receive from their managers and organisation (Kornhaber *et al.*, 2016). Organisational factors also determine the time practitioners have to work with those with a history of ACE-related trauma, although practitioner time is also determined by broader, system-wide issues involving workforce capacity and interagency referral processes (Hall *et al.*, 2012).

Gaps in the evidence

Despite a growing number of interventions with evidence of preventing or reducing ACEs, our work has identified a number of evidence gaps that could substantially impede system-wide efforts aimed at preventing and reducing the negative impact of ACEs:

- **Preventing and reducing neglect.** Studies consistently show that relatively few interventions have causal evidence of reducing the risks associated with child neglect. This is because parents who neglect their children are often less responsive to treatment on account of other factors contributing to neglecting behaviours such as substance misuse (see below: Barth, 2009).
- **Preventing and reducing parental substance misuse.** There is also a significant lack of causal evidence underpinning many common practices that aim to reduce parental drug and alcohol misuse. This is a particularly significant gap in the evidence base, given the severe, negative impact parental substance misuse often has on children's development (Paranjothy *et al.*, 2018).
- **Changing IPV perpetrator behaviour.** While some school-based interventions have causal evidence of preventing IPV by increasing teenagers' understanding of abusive behaviours, there remains little evidence underpinning many common practices used to stop the ongoing perpetration of IPV (Guy *et al.*, 2014; Axford *et al.*, 2015). Further research is therefore urgently needed, especially given the trauma experienced by children when witnessing IPV, or through IPV-related parental separation or incarceration.
- **Effective multiagency delivery models**. Despite the proliferation of multiagency approaches for supporting vulnerable families, there is relatively little evidence regarding which types of approaches are most effective. For example, our own work in UK local authorities has observed a lack of robust evaluation of the impact of

https://doi.org/10.1017/S1474746419000071 Published online by Cambridge University Press

multiagency safeguarding hubs (MASH) and other integrated intervention approaches (Godar and Holmes, 2017).

- **Direct practice.** There is also a notable lack of evidence for many common social work practices (Forrester *et al.*, 2019). Currently, many aspects of social work practice are underspecified, including the role of research evidence for informing professional judgment and practice.
- **Effective and appropriate methods of screening and referral.** Relatively little is still known about how ACEs should be used to inform the provision of effective treatment. Given this lack of evidence, we have genuine concerns about the current use of scoring systems that determine children's needs on the basis of the number of ACE categories children have experienced. There is now a growing consensus that ACE scores should never be used as a replacement for careful assessment by a suitably skilled practitioner (Finkelhor, 2018).

Conclusions and recommendations

Recent findings from ACE research have confirmed what has been observed in the child maltreatment literature for decades: multiple traumatic experiences during childhood substantially increase the risk of life-threatening diseases in adults. While these findings are not new, the intuitive nature of the ACE framework has dramatically increased public awareness of the negative impacts early trauma has on children's development. We view this as genuine progress from a social policy perspective if more resources are ultimately made available to vulnerable children who are at the greatest risk.

Although more needs to be known about how ACEs affect negative adult outcomes, our work at EIF has identified twenty-four different activities with causal evidence of either reducing the trauma associated with ACEs or preventing ACEs from occurring in the first place. These practices range from relatively low-cost universal screening and teaching activities to intensive family therapies for children at the edge of care. While it is unlikely that any one of these activities would be sufficient for reducing ACEs at the population level, it is possible that various combinations of interventions could make a measurable difference if delivered to a high standard through a well-integrated, system-wide strategy of care.

System-wide strategies for preventing or reducing ACEs are not easy or cheap, however. The evidence we have reviewed in this article suggests that the successful delivery and integration of effective activities requires time, skill and commitment that is not currently available in most community systems. We therefore recommend that long-term public investments be made to test the impact of a system-wide approaches aimed at preventing or reducing ACEs through effective interventions. Such investments should not only cover intervention costs, but also provide resources for the workforce development, multiagency working, and governance arrangements necessary to deliver interventions to a high standard. These investments should also include funding for evaluation, so that the impact of various intervention combinations and multiagency approaches can be tested and compared.

In this article, we have also identified a number of notable evidence gaps that must be filled in order for system-wide approaches to achieve their full potential. These gaps span a variety of research disciplines and areas of practice, suggesting that an ambitious, multidisciplinary research agenda is necessary to adequately address them. We recommend that this agenda begin with some of the most pressing evidence gaps identified here,

https://doi.org/10.1017/S1474746419000071 Published online by Cambridge University Press

including the lack of evidence underpinning interventions that aim to prevent or reduce parental substance misuse and appropriate methods of ACE assessment.

We also recognise that what we propose cannot fully address all of the causes and consequences of ACEs, nor the wider societal problems that contribute to them. Thus, efforts to reduce ACEs should not come at the expense of other necessary endeavours, including those that aim to reduce poverty, income-related inequality and other serious and pervasive social problems. Nevertheless, we do believe that embedding interventions with evidence of preventing or reducing ACEs into system-wide strategies of care can provide genuine value to children and families, and therefore provides a sensible way forward.

Notes

1 https://guidebook.eif.org.uk/

2 https://guidebook.eif.org.uk/eif-evidence-standards

3 https://www.eif.org.uk/report/early-intervention-in-domestic-violence-and-abuse

4 https://www.eif.org.uk/report/what-works-in-enhancing-social-and-emotional-skills-development-during-childhood-and-adolescence

5 https://www.eif.org.uk/report/foundations-for-life-what-works-to-support-parent-child-interaction-in-the-early-years

6 https://www.eif.org.uk/report/interparental-conflict-and-outcomes-for-children-in-the-contexts-of-poverty-and-economic-pressure

7 https://www.eif.org.uk/report/improving-the-effectiveness-of-the-child-protection-system-a-review-of-literature

8 https://www.eif.org.uk/report/what-works-to-enhance-the-effectiveness-of-the-healthy-child-programme-an-evidence-update

9 https://guidebook.eif.org.uk/eif-evidence-standards

10 https://guidebook.eif.org.uk/programme/family-nurse-partnership

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