

Tackling Adverse Childhood Experiences (ACEs)

State of the Art and Options for Action



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Executive summary

Adverse Childhood Experiences (ACEs) refer to sources of stress that children may suffer whilst growing up. Although there is no standardised definition of ACEs, they have historically included multiple forms of physical, sexual and emotional abuse and neglect, exposure to violence between parents or caregivers, and other serious household stressors such as parental substance abuse or mental illness¹. This state of the art report brings together current research on ACEs, their immediate and life-long impacts and the evidence on how to tackle ACEs through prevention, mitigation and trauma-informed practice (TIP). It is intended as an evidence-based guide for those developing policy, practice or other interventions to reduce the prevalence and harmful impacts of ACEs. This report identifies that:

ACEs are common in populations (Section 3). In Europe, around four in ten adults are thought to have suffered at least one ACE whilst growing up, and two in ten are thought to have suffered more than one. The prevalence of ACEs varies geographically, and is affected by socio-demographics such as gender, ethnicity, race and socio-economic status or deprivation. Importantly, children that suffer one type of ACE are at increased risk of suffering other types of ACEs, reflecting a need to address ACEs collectively rather than only focusing on individual adversities. The risk of children suffering ACEs can be affected by a wide range of individual, family, community and societal circumstances.

Whilst many people with ACEs are resilient to the harmful effects, for others, ACEs can have long lasting impacts across the life course (Section 4). ACEs can increase risks relating to:

- **Early child development**, e.g. increased risk of developmental delays.
- **Education**, e.g. increased risk of school absence, low engagement and low achievement.
- **Health and behaviour**, e.g. increased risk of injury, health-harming behaviours and poor mental health.
- **Involvement in violence and criminal justice systems**, e.g. increased risk of offending.
- **Socio-economics**, e.g. increased risk of poverty, unemployment and homelessness.
- **Chronic illness**, e.g. earlier development of illnesses such as cancer or cardiovascular disease.
- **The health and development of offspring**, e.g. increased risk of developmental, mental health and physical health problems for the children of those with ACEs.

ACEs and other stressful experiences can result in biological changes in the body that become embedded in behaviour (Section 5). Some biological changes may have been adaptive developments aimed at improving short-term survival within an adverse childhood environment. However, in contemporary societies, these changes often result in negative health and behavioural consequences across the life course. Biological changes include those relating to:

- **The developing brain**, affecting early development in brain structure and function.
- **Stress regulation**, leaving those affected with greater difficulty controlling responses to, and recovering from, stressors.
- **The immune system**, increasing vulnerability to infection, chronic inflammation and autoimmunity.
- **The endocrine/metabolic systems**, leading to a number of issues including high blood pressure, insulin resistance and risk of chronic diseases.
- **Epigenetic changes**, impacting on brain development, cognition, behaviour and health.

The financial costs of ACEs to society are vast (Section 6). ACEs can impose major costs on a range of services and systems, including health, social care, education and criminal justice. The annual health burden of ACEs in 2017 has been estimated at 24.6 million Disability-Adjusted Life Years² (DALYs) in the WHO European region and 12.9 million DALYs in North America. The financial costs associated with this were estimated to be \$581 billion for the European region (equivalent to 2.7% of Gross Domestic Product [GDP]) and \$748 billion in North America (equivalent to 3.6% of GDP).

1 ACEs can include other childhood adversities such as peer violence, community violence, and exposure to collective violence and war. However, in this document, we focus predominantly on ACEs that affect children in the home environment, including child maltreatment.

2 Sum of the years of life lost due to premature mortality and years lived with a disability, due to prevalent cases of a health condition or disease.

A broad range of approaches can prevent or mitigate the impacts of ACEs (Section 7). These approaches are effective across multiple types of ACE through addressing common risk factors. It is also likely that additional health and well-being benefits and cost-savings elsewhere will be derived from the implementation of ACE-related measures. Strategies include:



Policies, legislation and strategies that **promote the social determinants of health and human rights, address inequalities in health and gender**, and aim to **alter norms, behaviours and environments that promote ACEs**. *E.g. legislation to prohibit corporal punishment of children or criminalise intimate partner violence (IPV), public awareness-raising and education programmes on ACEs, empowerment programmes for women and girls, and programmes to alter harmful social and cultural norms that promote ACEs.*



Strengthening families and developing/maintaining safe, stable, nurturing relationships and environments for children, families and wider communities. *E.g. parenting programmes that educate and support parents and caregivers and strengthening economic support for families.*



Provision of **education** and opportunities to **develop life skills** that help deal with stress, negative emotions and conflict. *E.g. pre-school enrichment programmes, school-based violence prevention or life skills development programmes, and training of professionals to raise awareness of child maltreatment.*



Response and support services that aim to reduce the impact that adversity has on children and adults. *E.g. counselling and therapeutic approaches, pharmacological treatment, interventions to counter toxic stress and improve biological functioning, and support for specific ACEs such as child sexual exploitation response programmes, support for survivors/perpetrators of IPV, screening and brief intervention for parental substance use.*



Multi-component programmes that combine different strategies to address multiple risk factors at the same time. *E.g. Multi-component family programmes that combine parental, youth and family skills building.*

Building resilience is an important part of work to mitigate the impact of ACEs (Section 7.10). Many individuals with ACEs avoid adverse outcomes; a characteristic referred to as resilience. This is an ability to withstand, cope or recover from the effects of adverse circumstances. Individual resilience is the product of an interaction between internal (child predispositions) and external (social) factors. Types of resilience that can be developed include those relating to:

- **Individuals**, such as having a sense of control over one's life circumstances, hope, and skills in self-regulation and executive functioning.
- **Relationships**, such as a trusted, supportive relationship with an adult.
- **Communities**, such as supportive social networks.
- **Cultures**, such as mobilisation of cultural traditions.
- **Systems**, such as the capacity of a system (e.g. health system) to recover from adverse events and maintain function.

Strategies that can help to build resilience are often similar to those used to prevent ACEs from occurring. *E.g. parenting programmes, mentoring interventions, school-based programmes that develop life skills, psychological support to deal with the negative impacts of ACEs and community-based programmes that strengthen local resources and relationships.*

Trauma-informed practice (TIP) can support individuals affected by ACEs and avoid re-traumatisation (Section 8). For those affected by ACEs, TIP is being used across a variety of services, including health, schools, and criminal justice. There is, as yet, no standardised definition of TIP, but it is said to be an approach that “**realises** the widespread impact of trauma and understands potential paths for recovery; **recognises** the signs and symptoms of trauma in clients, families, staff and others involved with the system; **responds** by fully integrating knowledge about trauma into policies, procedures and practices; and seeks to actively resist **re-traumatisation**”³. Whilst more evidence is needed, there is tentative support for TIP approaches.

Work to address ACEs supports international goals and commitments to improve global health and well-being (Section 9). Addressing ACEs supports attainment of the Sustainable Development Goals (SDGs)⁴ and multiple global commitments, including those to prevent violence against children and all forms of violence across the life course; improve maternal, child and population health and well-being; build healthy, stronger and resilient communities; and reduce health, social and gender inequalities.

A great deal of research has been implemented on ACEs over the last few decades, but some limitations still remain (Section 10). For instance, further work is required to answer questions relating to the measurement of ACEs and resilience, the relationships between ACEs and social determinants of health, and what effective multi-sectoral approaches to preventing ACEs and building TIP look like. Coordinated future work on ACEs should support greater understanding of these issues and the development and implementation of evidence-based responses across the life course.

3 SAMHSA. SAMHSA's concept of trauma and guidance for a trauma-informed approach. Available from: https://ncsacw.samhsa.gov/userfiles/files/SAMHSA_Trauma.pdf

4 A set of 17 goals that aim to tackle current global challenges, improving health and well-being whilst protecting the planet.

1. Introduction

Since the term Adverse Childhood Experiences (ACEs) was first coined over two decades ago, there have been an increasing number of studies identifying the long-term impacts that ACEs can have on life course health (1). ACEs include child maltreatment and other stressful experiences, such as exposure to caregiver intimate partner violence (IPV) or substance abuse by parents or caregivers. Although many children remain unaffected by such adversity, experiencing ACEs can have immediate impacts on educational engagement and both physical and mental health (2,3). ACEs can also increase children's risks of adopting health-harming behaviours such as smoking, harmful alcohol consumption and drug use, and the risk of developing chronic ill health including diabetes, cancer, and cardiovascular and respiratory disease (1). The impact of ACEs on mental health and consequent adoption of health-harming behaviours is one set of mechanisms connecting ACEs to chronic ill health in later life (4). However, biomedical studies suggest that childhood adversity can also directly impact neurological, hormonal and immunological development through mechanisms consistent with increased risks of chronic disease across the life course (5,6). The health, social and economic benefits that populations of nations and regions stand to gain from preventing ACEs and reducing their impacts are immense.

In 2015, member states of the World Health Organization (WHO) European Region adopted *Investing in children: the European child maltreatment prevention action plan* (7), which aimed to reduce child maltreatment through implementing prevention programmes that address risk and protective factors. In line with this and other key health policies, including the *Roadmap to implementing the 2030 Agenda for Sustainable Development, building on Health 2020, the European policy for health and well-being* (8), WHO has led a programme of work to prevent violence against children and other ACEs in Europe. This includes supporting the implementation of ACE studies among over 18,000 young adults in 13 European member states. Results from these surveys show around half of participants suffered at least one ACE in childhood and more than one in twenty suffered four or more ACE types (9). The surveys identify a high burden of mental ill health and health-harming behaviours related to ACEs across Europe (9), findings that are consistent with ACE studies in other countries and continents (10,11). The strong relationships between ACEs and poor health outcomes across the life course suggest that eliminating ACEs across Europe could reduce levels of illicit drug use by 34%, depression by 28% and cardiovascular disease by 12% (12).

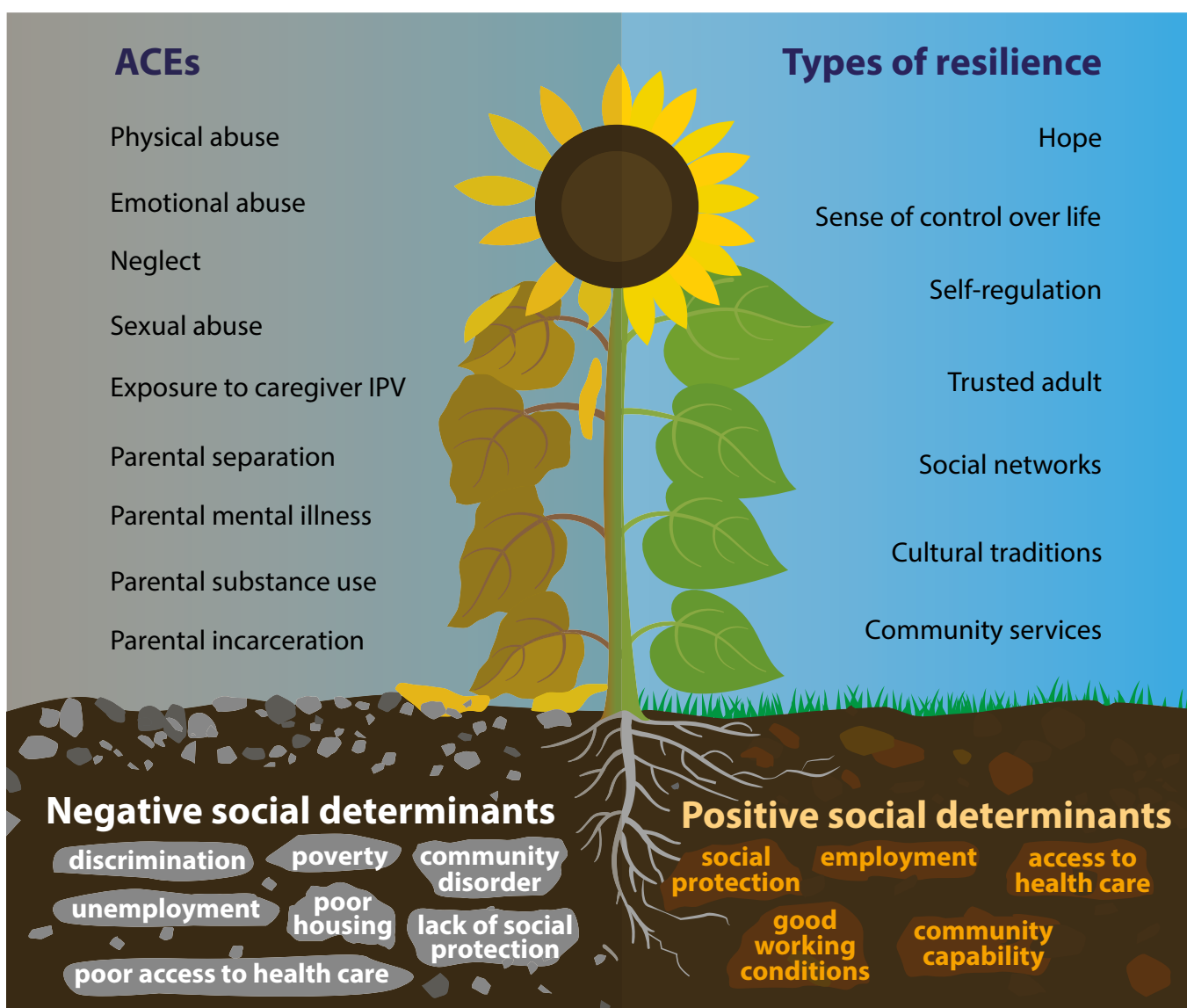
Whilst ACEs can impact the life course of individuals from any socio-economic background, research suggests ACEs are more common in the poorest communities (13) and consequently they are also likely to be a key mechanism connecting deprivation and poor life course health outcomes. Preventing ACEs at a societal level requires tackling deficits and inequities in issues including access to health care, adequate housing and other necessary conditions for healthy living, education, meaningful employment and income. Such factors have been linked not only with experiencing ACEs but also with worse outcomes for those who have a legacy of ACEs (14,15). A range of interventions have been linked with reducing such deficits and inequalities, although their impact on ACEs and ACE-related harms is often not measured nor reflected at a policy level.

At community and individual levels there are a range of evidence-based interventions shown to prevent ACEs such as child maltreatment (16). These primary prevention interventions offer the most protection against the harmful effects of ACEs. However, even where children experience ACEs, the effects can be ameliorated via secondary prevention. For instance, those suffering ACEs may experience fewer long-term consequences when they have access to early life support and resilience-building assets (e.g. a supportive trusted adult, community engagement, interventions that address toxic stress) (17–22). Further, health, social, criminal justice and educational services which are trauma-informed, with staff understanding ACEs and their consequences, are likely to provide better outcomes for everyone and especially for those presenting with chronic adversity in their childhood histories (23–25) (Section 7). Consequently, much can be done to both prevent ACEs and reduce their consequent harms at individual, community and societal levels.

There are already established aspirations and targets for the reduction of individual ACEs (e.g. child maltreatment). The United Nations' Sustainable Development Goals (SDGs) include a target of ending all forms of violence against children (SDG 16.2). Additionally, health systems in WHO member states committed to a global plan to strengthen their role in addressing violence especially against children and women (26). Many

of these commitments are supported by regional action plans aligned with the 2030 Agenda for sustainable development (16). Whilst such initiatives may focus on specific topics, relatively little policy and practice is aimed at tackling the combined range of ACEs which can be experienced concurrently by many children worldwide. Further, global and national policies addressing major public health issues such as smoking, alcohol use and non-communicable disease often fail to address ACEs as an underlying determinant that may both increase risk and affect intervention success. Equally, connections between societal inequalities and increased risks of both ACEs and their consequences are also poorly represented in health strategies.

This state of the art report brings together current evidence on ACEs. It has been developed to inform a broad audience about the causes and consequences of ACEs and evidence-based options for their prevention and the moderation of their impacts on health across the life course. With ACEs impacting on a wide range of health, social and economic outcomes across the life course and being more common in the poorest communities, action to address ACEs has the potential to act as an SDG accelerator (27), impacting positively on a broad range of SDGs beyond those that focus solely on childhood maltreatment.



2. What are ACEs?

While there is no universally agreed definition of adverse childhood experiences (ACEs), the term is used to refer to some of the most intensive sources of stress that children can suffer whilst growing up (28), such as suffering maltreatment or witnessing violence. In this report, we focus predominantly on ACEs that affect children in the home environment, including child maltreatment (see Box 2.1), exposure to violence between parents or caregivers, parental separation or divorce, and mental illness, substance misuse or incarceration among household members. These types of ACEs are commonly measured in ACE studies (1) and can reflect home environments that lack the safe and nurturing care essential for healthy child development. However, children can suffer a wide range of other childhood adversities both inside and outside of the home, such as parental death, bullying in school, community violence, persecution, racism, forced migration and exposure to war, terrorism or natural disasters. These experiences can be equally traumatic and harmful to children. Additional experiences, such as growing up in poverty, have also been suggested as potential ACEs (Box 2.2). Work should be carried out to develop an international consensus, highlighting which additional ACEs should be routinely quantified in future population surveys. Providing a comprehensive overview of all potential types of ACEs and their prevention is outside the scope of this report but is an important area for future work.

Box 2.1: Definition of child maltreatment (29)

Child maltreatment constitutes all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power. Four types of child maltreatment are generally recognised:

- **Physical abuse** is the intentional use of physical force against a child that results in - or has a high likelihood of resulting in - harm for the child's health, survival, development or dignity. This includes hitting, beating, kicking, shaking, biting, strangling, scalding, burning, poisoning and suffocating.
- **Sexual abuse** is the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared, or else that violates the laws or social taboos of society.
- **Emotional or psychological abuse** is failure on the part of a parent or caregiver to provide a developmentally appropriate and supportive environment. Abuse of this type includes: the restriction of movement; patterns of belittling, blaming, threatening, frightening, discriminating against or ridiculing; and other non-physical forms of rejection or hostile treatment.
- **Neglect** is failure on the part of a parent or other family member to provide for the development and well-being of the child – where the parent is in a position to do so – in one or more of the following areas: health, education, emotional development, nutrition, shelter and safe living conditions.

Child maltreatment is considered to be one form of the wider category: violence against children. Violence against children includes all forms of violence against people under 18 years old, whether perpetrated by parents, caregivers, peers, romantic partners or strangers.

The term *Adverse Childhood Experiences* rose to common use through the ACE study published by Felitti et al in 1998 (30) (see Box 2.3). Across two waves, this measured a set of ten household ACEs (physical abuse, emotional abuse, sexual abuse, physical neglect, emotional neglect, parental separation or divorce, witnessing violence against a mother, and household member mental illness, substance abuse or incarceration) and used an ACE count measure (i.e. a sum of the number of ACE types experienced) to measure the extent of adversity in children's lives. Versions of the ACE study questionnaire and the ACE count method (see Box 2.4) have since been used in numerous studies around the world, with findings used to support developments in ACE practice and policy. The ACE questionnaire is an epidemiological tool and does not represent a definitive list of adversity and trauma experienced by children. Expanded tools already measure a broader range of ACEs (e.g. the WHO's ACE-IQ research tool (28)) and work is underway to enhance and expand the ACEs measured in studies.

Box 2.2: Childhood deprivation as an ACE

There is debate about whether childhood socio-economic deprivation should be regarded as an ACE (31). Studies find that childhood poverty can adversely impact on socio-economic status and health later in life, supporting arguments for its inclusion as an ACE (32). However, in some studies, once ACEs have been accounted for, certain health and social outcomes such as involvement in violence may not be related to poverty (33). ACEs and socio-economic deprivation can often coincide. Socio-economic deprivation is a stressor for parents and can act as a catalyst for ACEs such as parental separation, mental illness, substance abuse and incarceration. Equally, experiencing ACEs can result in reduced socio-economic opportunities for individuals and families and consequently a greater likelihood of suffering poverty (see Box 4.2). Importantly, ACEs can occur across all socio-economic strata. It has been suggested that including child poverty as an ACE alongside experiences of abuse is conceptually muddling and potentially stigmatising (34).

Box 2.3: The beginnings of ACE research

Many ACE studies are based on work initiated in the 1980s by Dr Felitti from Kaiser Permanente's Department of Preventive Medicine (35). Dr Felitti ran an obesity clinic that was achieving success yet also high levels of disengagement, particularly among patients that had successfully lost weight (36). Investigating the reasons for this paradox, Dr Felitti discovered that many patients were suffering from unresolved childhood trauma, with patients often not seeing their excess weight as a problem, but as a solution to mental distress. Eating helped them cope with anxiety, depression and fear, and being obese helped them feel invisible and safe. Dr Felitti and epidemiologists from the USA Centers for Disease Control and Prevention (CDC) developed the Adverse Childhood Experiences (ACE) Study to investigate these issues in a larger cohort of clients. The study ran from 1995 to 1997 and asked over 17,000 adults about their experience of up to 10 ACEs. The results showed strong relationships between the number of ACEs adults had been exposed to and a wide range of health-harming behaviours and physical and mental health conditions (37). The ACE study questionnaire has since been adapted and used in many settings, resulting in a rapidly growing global evidence base on the harmful impacts of ACEs on health and well-being across the life course (1).

Box 2.4: The use of ACE counts in research

Many ACE studies have used an ACE count (a count of the number of ACE types individuals have been exposed to) to study relationships between ACEs and health and well-being. This approach was the foundation of ACE research, greatly aiding our understanding of the relationships between ACEs and health outcomes, as well as our ability to advocate for prevention and response services. However, the use of ACE counts has been criticised for simplifying the experience of ACEs. For instance it cannot account for the differing levels of frequency of intensity of adverse experiences, and nor does it assume that any ACE or combination of ACEs has greater impacts than any others. Whilst many studies are now using more detailed analyses to understand relationships in greater depth, the ACE count approach remains a critical first step for understanding relationships and driving an ACE response.

3. The prevalence of ACEs

- ACEs are common in populations around the world.
- The prevalence of ACEs varies geographically and is affected by socio-demographics.
- Most studies measure ACEs retrospectively in adults, but ACE studies with children are emerging.
- ACEs cluster in affected families so ACEs should be considered together rather than each in isolation.
- The range of ACEs measured by studies, and the questions used to measure them, vary.
- Increasing the methodological consistency of data collection, particularly in children, would help to promote early prevention, inform the provision of support, evidence the impact of prevention, and evaluate progress.

Many countries have invested in ACE studies to understand the extent and impact of ACEs in their populations (12,38). The range of ACEs measured, and the questions used to measure them, often differ across studies. For instance, some survey tools include adversities that are likely to occur in the home environment, whereas others include additional adversities such as exposure to peer, community and collective violence (see Section 2). This section outlines key findings from studies measuring the prevalence of ACEs among adults and children. Ethical considerations for measuring ACEs in adult and child populations can be found in Box 3.1.

Box 3.1 Ethical and methodological issues in ACE research

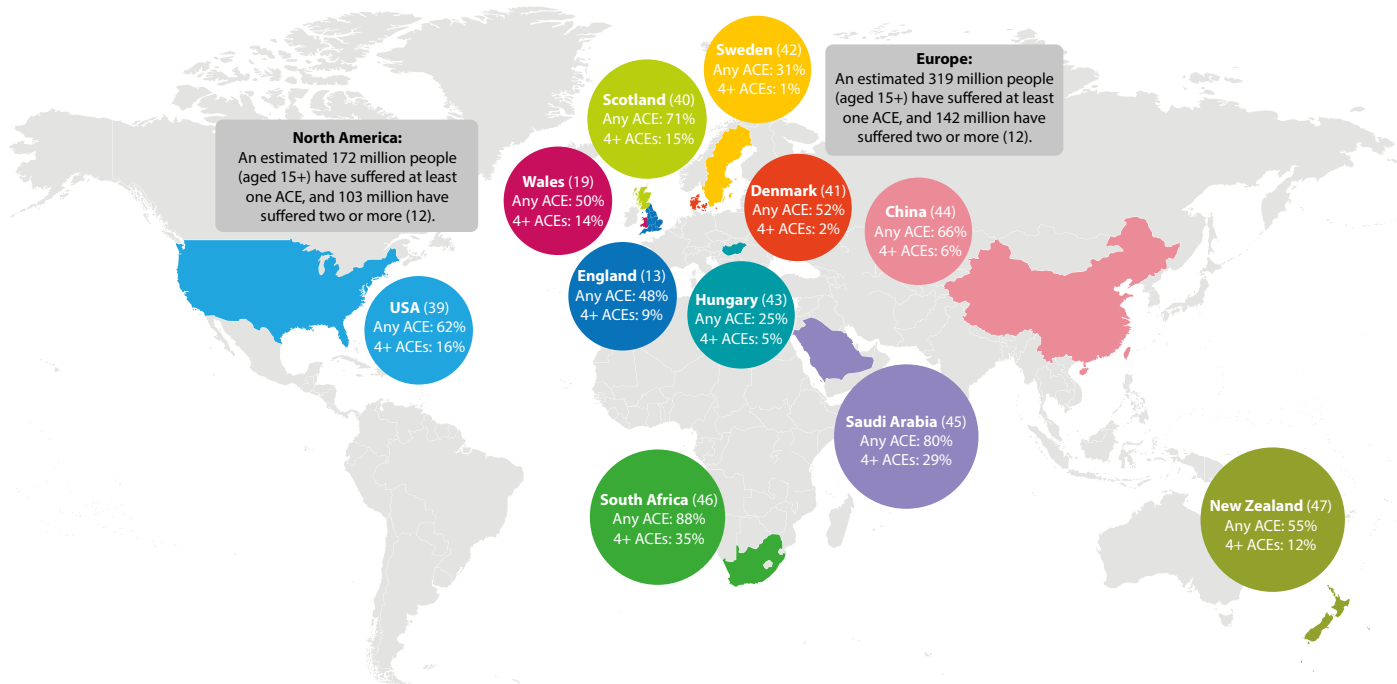
Studies that collect data on ACEs from individuals need to take a range of ethical considerations into account to protect the rights, health and well-being of those participating in research. This includes for instance: ensuring that participants understand why questions are being asked and how their data will be used, and that their informed consent to take part in the study is obtained (for children, this is likely to also involve gaining consent from an appropriate adult); ensuring that information collected is confidential/anonymous and cannot be traced back to or used against an individual in any way; and ensuring that support is available to anyone affected by answering questions about their childhood (e.g. access to support services). When surveying children, researchers may have a legal duty of care to protect the welfare of children, which may include having follow-up procedures in place (e.g. referral to authorities or services) for those who disclose maltreatment.

3.1 How many adults suffered ACEs in childhood?

Studies around the world show that substantial proportions of adults suffered ACEs whilst growing up (Figure 3.1; see Box 3.2). For instance, combined data from 10 European studies suggested that 42% of adults had suffered at least one ACE whilst growing up, with 19% having suffered more than one ACE (12). Equivalent figures for studies in North America were 58% and 35% respectively.

Figure 3.1: Prevalence of any and 4+ ACEs among adults in selected general population studies

Findings are not directly comparable as the methods used, populations sampled, and ACEs measured vary (see Box 3.2). Most studies included here focused predominantly on ACEs in the home environment, however data from Saudi Arabia and China also include data on community and collective violence.

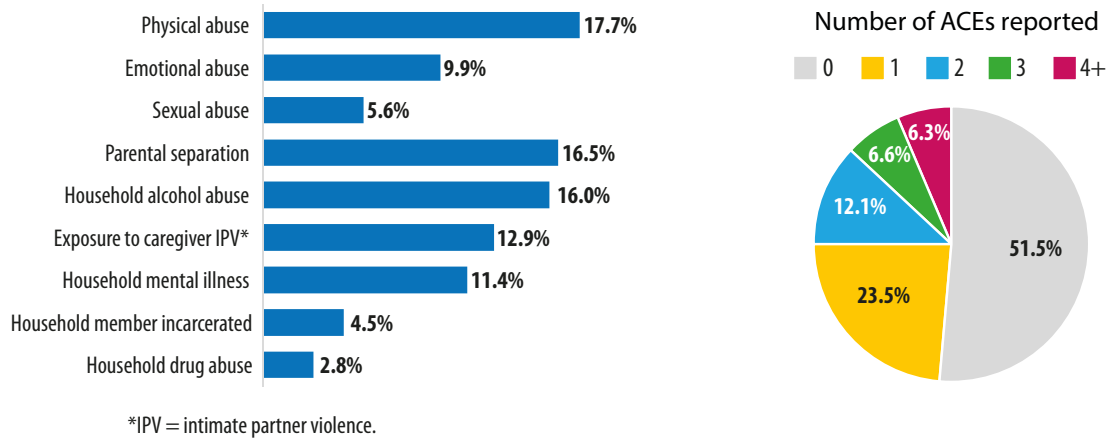


Box 3.2: Measuring population ACE prevalence among adults

Many retrospective ACE studies ask adult participants to self-report exposure to ACEs (9,13,30,48). This approach can measure ACEs that occurred at any point in childhood, but findings can be affected by participants’ recall and willingness to report. An individual’s willingness to report ACEs may also vary across the life course. Other studies link administrative datasets (e.g. child welfare, health services) or use birth cohort studies that collected ACE data in participants’ childhoods, often through parent or professional reports (49,50). These methods can avoid recall issues, yet can also underestimate ACEs by missing those that were unreported (e.g. by parents) or unrecognised (e.g. by professionals).

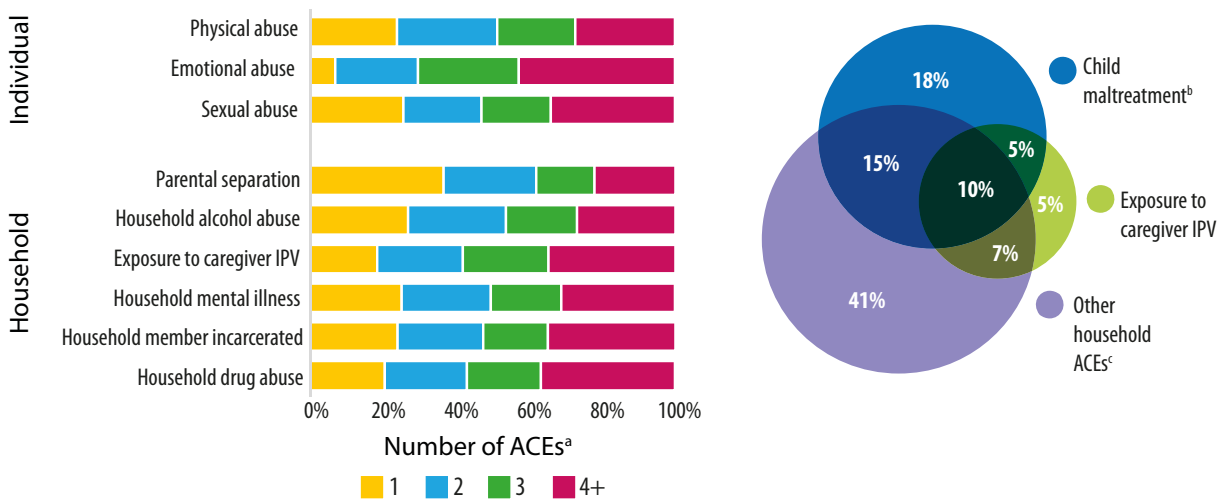
Since 2010, WHO European Region has supported the implementation of ACE surveys among students in 13 European countries using consistent methodologies and research tools (see Box 3.3). Figure 3.2 shows the prevalence of nine ACEs from these surveys among a sample of 18,747 students, aged 18-25 years.

Figure 3.2: Prevalence of ACEs reported by students aged 18-25 across 13 European countries⁵



These studies also show how children that suffer one type of ACE are at increased risk of suffering other ACE types. Figure 3.3 shows that the majority of students reporting any individual ACE reported at least one other ACE, rising from 63% for parental separation to 93% for emotional abuse. Looking at the overlap between child maltreatment, exposure to caregiver IPV and other household ACEs, one in 10 of those reporting any ACE type experienced all three of these types. This clustering of ACEs shows the importance of considering ACEs as a collective rather than focusing on individual ACE types. Work to address individual ACE types may have little effect if the range of other difficulties facing families is not addressed.

Figure 3.3: Number and cross-over of ACEs experienced by students reporting at least one ACE (European ACE surveys; n=9098)⁵



For more information on the overlap between different ACEs please see Hughes et al, 2019 (51). ^a Individual bars represent the total number of ACEs experienced by people who reported a specific ACE type; ^bOne or more of child physical, emotional or sexual abuse (23% of all survey participants reported at least one of these child maltreatment ACEs); ^cParental separation, household mental illness, alcohol abuse, drug abuse or incarceration (35% of all survey participants reported at least one of these ACEs).

⁵ Analyses conducted for this report, based on data in (9,51). Individual country level reports are available at www.euro.who.int.

Box 3.3: ACEs across Europe

WHO European Region has worked with a number of countries to identify the prevalence of ACEs and relationships with health-harming behaviours among young adults in secondary or higher education. Studies have been conducted in Albania, Czech Republic, Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Poland, Romania, Russian Federation, Serbia, Turkey and Ukraine. Each study has used the Family Health History Questionnaire⁶ used in the US ACE survey to collect information on childhood adversities. The questions used to measure each ACE are below*.

While you were growing up, in the first 18 years of life...

Physical abuse	How often did a household member: [†] <ul style="list-style-type: none"> • push, grab, shove or throw something at you? • hit you so hard you had marks or were injured? (ever) • spank you (sometimes at hard severity, or often at medium to hard severity)?
Emotional abuse	How often did a parent or household member: [†] <ul style="list-style-type: none"> • swear at you, insult you, or put you down (more than sometimes)? • act in a way that made you think that you might be physically hurt? (more than once or twice)
Sexual abuse	How often did an adult or someone at least 5 years older than you: ^{+~} <ul style="list-style-type: none"> • touch or fondle your body in a sexual way? • have you touch or fondle their body in a sexual way? • attempt to have any type of sex with you? • have any type of sexual intercourse with you?
Parental separation	Were your parents ever separated or divorced?
Household alcohol abuse	Did you live with a household member who was a problem drinker or alcoholic?
Exposure to caregiver IPV	How often did your father (or stepfather) or mother's boyfriend do any these things to your mother (or stepmother): ^{+‡} <ul style="list-style-type: none"> • kick, bite, hit her with a fist or hit her with something hard? (more than once or twice) • push, grab or slap her or throw something at her? (more than once or twice) • repeatedly hit her for a few minutes or more? • threaten her with a knife or gun?
Household mental illness	Did you live with a household member who was depressed, mentally ill or suicidal?
Household member incarcerated	Did you live with a household member who went to prison?/Was anyone in your family imprisoned?
Household drug abuse	Did you live with a household member who used street drugs?/Did you share your house with a drug addict?

* There were some variations in question wording across countries; † response options (ranging from never to very often) indicating an ACE vary across questions, see (13,50); ~ sexual abuse excluded individuals who reported that the sexual experience occurred at age 16 or older and was consensual; ‡ in Poland and Serbia, the question on caregiver IPV also referred to violence perpetrated by females towards males.

6 Questionnaire available from: <https://www.cdc.gov/violenceprevention/aces/about.html>

3.2 How many children are currently suffering ACEs?

Data on children's current exposure to ACEs is limited. Although ACE tools are increasingly used with children, most studies focus on specific ACE types (e.g. child maltreatment) and few measure cumulative ACEs. Some countries have used birth cohort studies or opportunities within school surveys (e.g. the Health Behaviour in School-age Children [HBSC] survey⁷) to measure a range of ACEs. Available studies show that a considerable proportion of children are exposed to ACEs (Table 3.1), although there is variation in the types of ACEs measured. Increasing the range and consistency of data collection with children would help to promote prevention, inform the provision of support, evidence the impact of prevention, and evaluate progress.

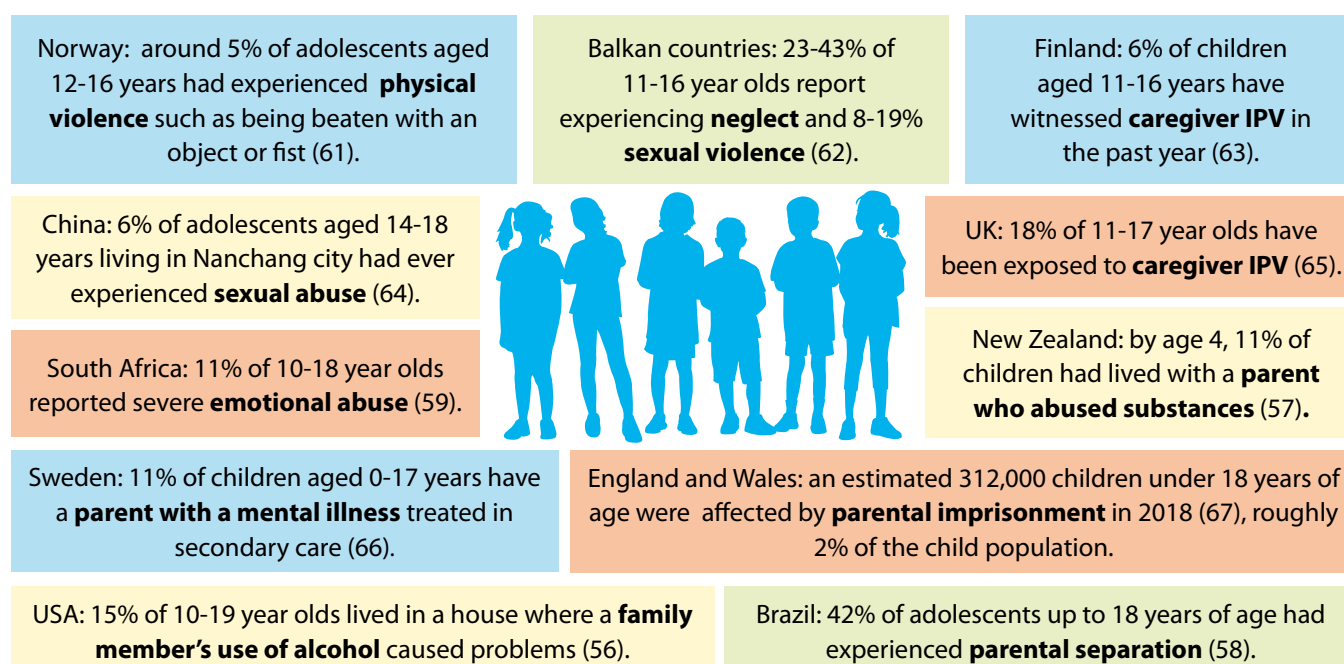
Table 3.1: Prevalence of ACEs among children in school and cohort studies

Country	Sample age	ACE types measured	% any ACE	% 3+* or 4+** ACEs
Slovakia (52)	10-16	9	69% ^a	14%*
The Netherlands (53)	9-13	10	45%	7%**
Scotland (54)	8	7	65%	3%**
Hungary (55)	12-17	10	48%	7%**
USA (56)	10-19	6	29%	3%**
New Zealand (57)	4.5	8	53%	3%**
Brazil (58)	18	7	85%	5%**
South Africa (59)	10-18	9	77% ^b	20%*

Findings are not directly comparable as the methods used, populations sampled, and ACEs measured vary. However, all studies included here focused predominantly on ACEs in the home environment. ^aACEs did not include any forms of abuse. ^bACEs included community violence exposure and food insecurity.

There are far more data available on the prevalence of specific ACE types, such as that from national child maltreatment surveys (16). Globally, estimates suggest that half of all children (aged 2-17 years) were exposed to violence in 2014 (including physical, emotional or sexual violence; bullying; or witnessing violence) – equivalent to one billion children (60). In Europe, meta-analyses of community surveys estimate that annual child maltreatment prevalence rates are 10% for sexual abuse, 23% for physical abuse and 29% for emotional abuse (16). Figure 3.4 provides examples of exposure to individual ACEs among children from studies conducted in various countries.

Figure 3.4: Examples of exposure to individual ACEs among children from international research

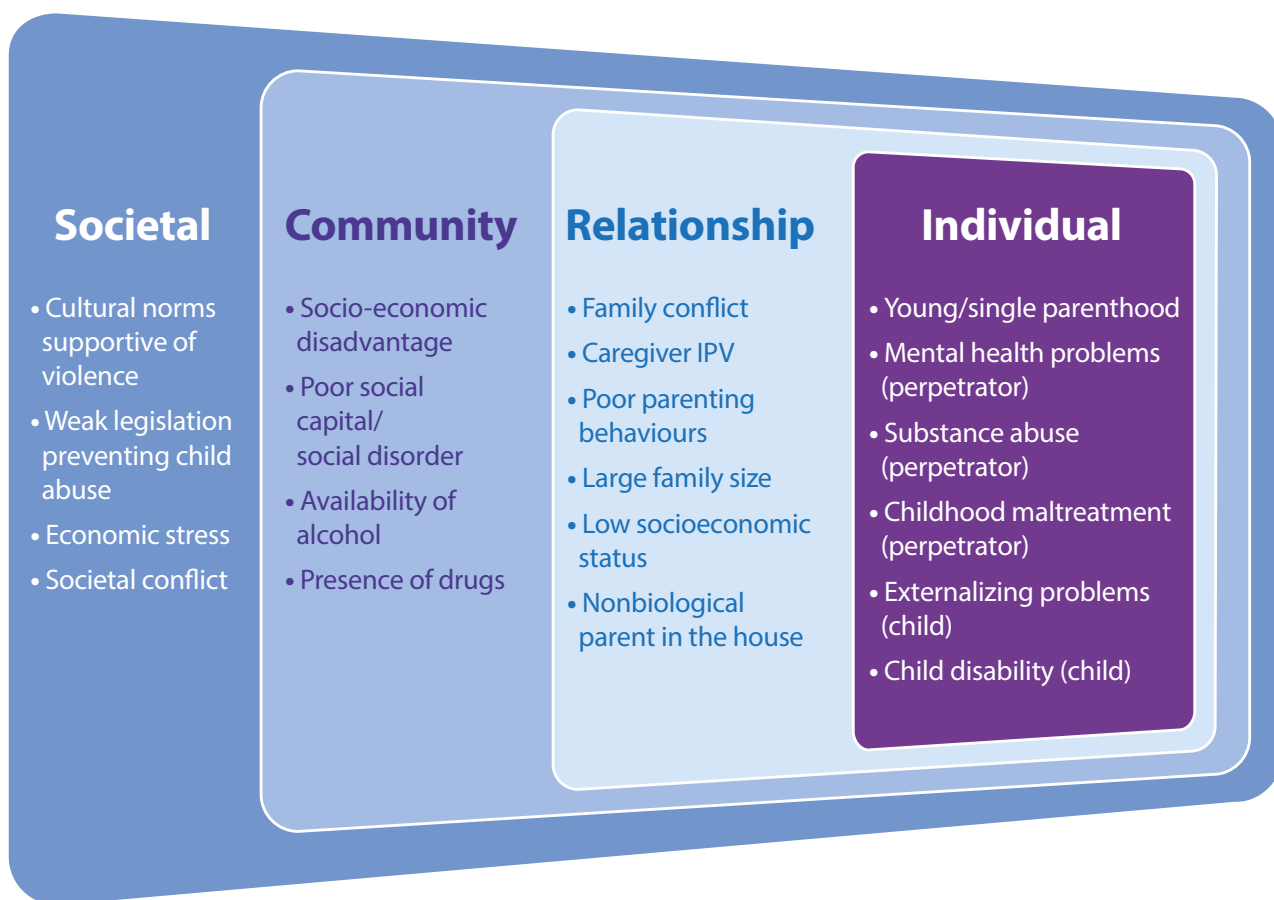


⁷ HBSC is a WHO collaborative cross-national study of adolescent health and well-being: <https://www.hbsc.ch/en/home.html>

3.3 Factors increasing the risk of ACEs

The risk of children suffering ACEs can be affected by child, family, community and societal circumstances, that combine to increase or decrease the risk of adversity (68). Since ACEs cover a wide range of experiences, there are many different factors that can increase the risk of suffering one or more of these events during childhood, which can occur at multiple levels (Figure 3.5 (68)). Many of these factors also increase the risk of other types of adverse experiences. The inclusion of other ACEs as risk factors for violence against children, such as perpetrator mental health problems and caregiver IPV, reflects the clustering of ACEs in affected individuals (see Section 3.1), whilst the inclusion of perpetrator childhood maltreatment reflects the intergenerational aspects of ACEs (see Section 4.7).

Figure 3.5: Examples of common risk factors associated with violence against children (68)

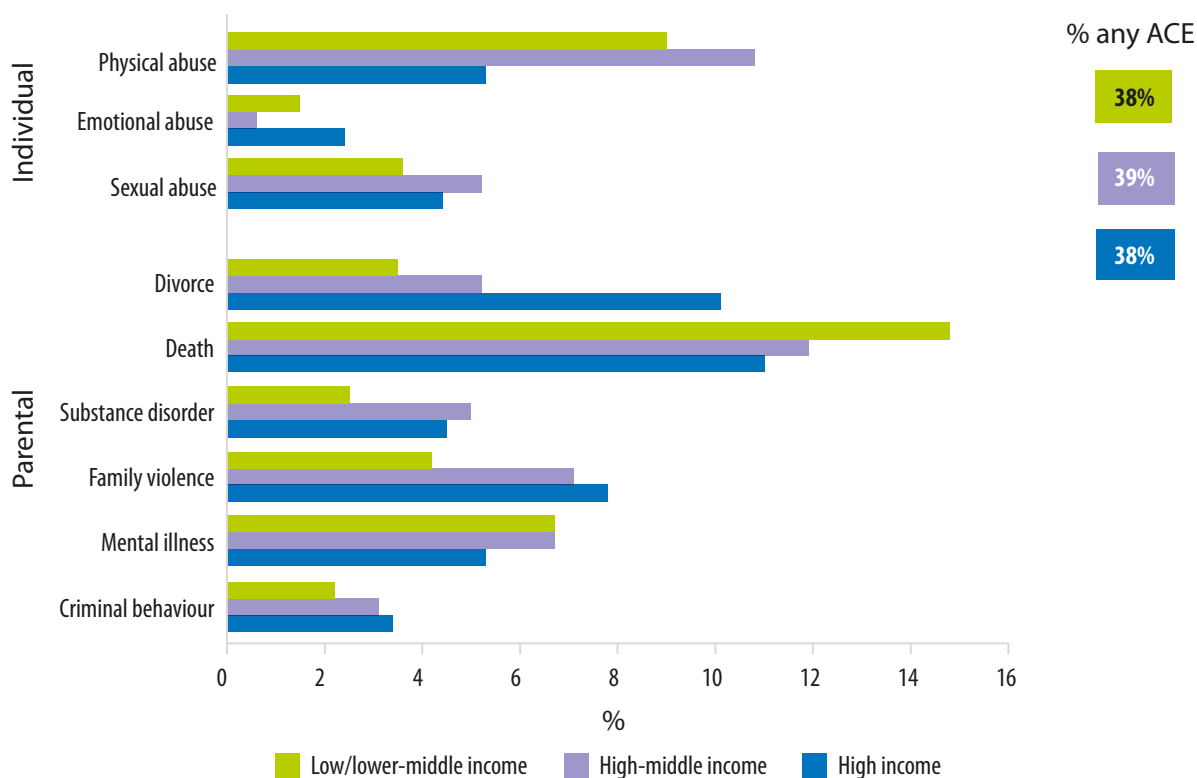


3.4 How might ACE prevalence vary across countries?

Factors that increase the risk of ACEs (see Section 3.3) can vary substantially between countries. Consequently, the prevalence of ACEs is likely to vary across countries. There is a lack of nationally representative country-level ACE data to explore country variations, and any international comparison is confounded by differences in ACE definitions and assessment across countries. For instance, in some countries, children may experience types of adversity not typically measured within ACE surveys (e.g. collective violence, or racial or other discrimination), whilst in low-income settings, it may be difficult to disentangle child neglect from a lack of material resources available to families (e.g. food, housing) (69).

The World Mental Health surveys measured 12 early childhood adversities in adults across 21 countries, finding little difference in overall childhood adversity exposure across country income groups. However, there were some variations in the experience of individual childhood adversities across the different income groups (Figure 3.6) (70). Some variations will reflect differences in childhood experiences between income groups, others may depend on legislation, accessibility to health systems, effectiveness of criminal justice systems and social expectations/norms.

Figure 3.6: Prevalence of childhood adversity* in high, high-middle and low/lower-middle income countries (70)



* Additional adversities not reported here included other parental loss, childhood physical illness and economic adversity.

The prevalence of ACEs is likely to be higher in countries that have had or are experiencing conflict, where government instability may impact on a country's social cohesion, economy and infrastructure, and families may be forced to displace. Alongside the stress this places on families and communities, children may be directly exposed to violence. Refugees and asylum seekers, many of whom have fled conflict affected areas, are considered a vulnerable group for ACEs due to their experiences in home countries, during migration and post-migration (see Box 3.3). Research conducted with children and adults in Syria in 2017, who had lived through six years of war, found that two thirds of children had lost a loved one, had their house bombed or shelled, or suffered war-related injuries. Almost all children said that ongoing bombing and shelling was the number one cause of psychological stress in their daily lives (71).

Culture can determine how an individual defines and understands stressors and whether they are perceived as normative or not (72). Cultural context can affect the prevalence of certain ACEs, either by affecting the risk of adversity or by influencing whether a behaviour is regarded as an ACE. For instance in some cultures, it is believed necessary to use corporal punishment to rear a child properly, whereas in others it is considered unacceptable (73). Furthermore, not providing children with basic necessities such as adequate food and safe drinking water would be regarded as neglect in many countries, but not where food and drinking water are in short supply (73). Cultural context can also modify the effects of ACEs, creating differences in levels of resilience and mental ill health. For instance, cultural beliefs can influence how individuals cope with adversity and whether they avoid dwelling on thoughts or actively try to face problems (74). Religious beliefs dominant in a culture can also influence coping styles, with religious involvement having been found to protect against poor mental health following childhood adversity (75). Furthermore, cultural beliefs about mental health problems (e.g. whether they are stigmatised or considered shameful) can influence how willing individuals are to seek social or professional help (74), which could impact on health outcomes.

Box 3.3: ACEs in asylum seeking and refugee children (76)

Refugee and asylum seeking children come from diverse cultures and backgrounds, each bringing their own unique set of experiences and methods of coping. It is currently difficult, from the available literature, to estimate the prevalence of ACEs among refugee and asylum seeking children. However, it is clear that they have often experienced a multitude of adverse experiences in their lives. These can include:

- **The challenges of living in countries affected by conflict or oppression.** For instance: experience of bombings; destruction of homes; witnessing or experiencing violence as a part of conflict; physical, emotional or sexual abuse within school or community settings; or severe deprivation of basic necessities.
- **Difficult journeys across borders to seek sanctuary.** For instance: abuse by authorities, smugglers, traffickers or within refugee camps; witnessing violence towards others, including family members; or severe deprivation of basic necessities.
- **Post-migration, as they deal with asylum processes and integration in new communities.** For instance: discrimination, abuse or bullying within residential accommodation, care systems, schools or communities; or witnessing violence towards others, including family members.

Although many refugee and asylum seeking children have an over-riding willingness to succeed and overcome adversity, for some, these experiences can impact negatively on their mental and physical health, behaviour, learning and academic achievement. Providing these children with the necessary support to cope with adversities, integrate into new societies, and manage the cultural gap between home and society can help to mitigate the negative impact of ACEs and foster productive and meaningful lives.

3.5 The social patterning of ACEs

An individual’s risk of ACEs can be shaped by inequities, such as those defined by gender or ethnicity, and can be affected by socio-economic status.

Gender

The risks of suffering ACEs can vary by gender and be affected by gender norms. However, findings differ across studies and further research would improve our understanding of gender differences. In Europe, studies have found levels of ACE exposure to be relatively similar between genders, but levels of individual ACEs to differ by gender. For instance in the European ACE studies⁸ (Figure 3.7), females were more likely to report parental separation, witnessing caregiver IPV and parental mental illness, whilst males were more likely to report parental drug abuse. While there were no overall differences in exposure to other ACEs, in most participating countries sexual abuse was higher among females. Similarly in the USA, studies suggest that females have higher rates of certain ACEs than males, such as sexual abuse or living with someone who was mentally ill (77,78).

Figure 3.7: Prevalence of individual ACEs in the European ACE studies (aged 18-25, 13 countries)⁸

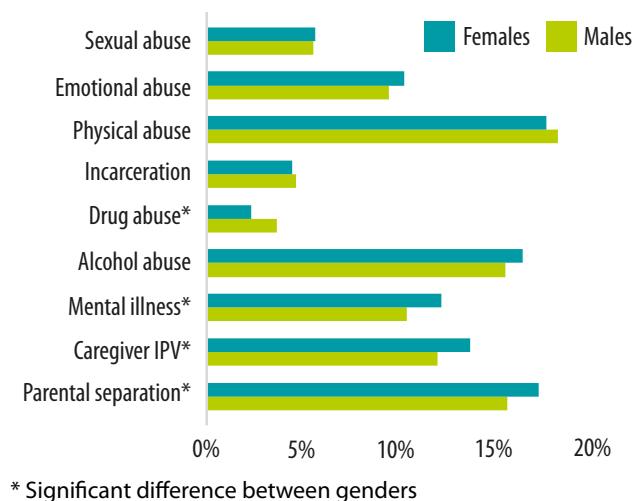
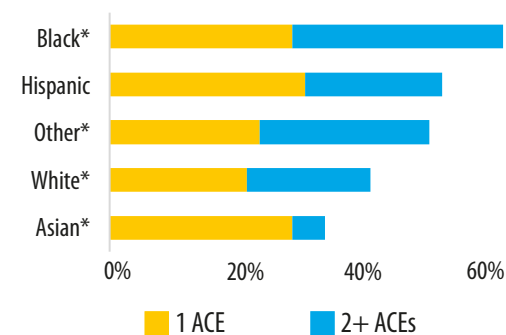


Figure 3.8: Prevalence of any ACE and 2+ ACEs in the USA by ethnic group (79)



*non-Hispanic

Ethnicity and race

ACE risk can vary by ethnicity and race. For instance, in one USA study, higher levels of ACEs were reported among black and Hispanic populations and lower levels among Asian non-Hispanic groups (79) (Figure 3.8). In the UK, Asian populations also report lower ACE exposure, and other non-white ethnicities higher exposure (13). Among Dutch adults, the prevalence of any exposure to child maltreatment ranged from 28% among Moroccan participants to 40% among African Surinamese participants; prevalence for Dutch participants was 37% (80). Cultural differences and societal issues such as racial discrimination likely contribute to the differences seen between ethnicities.

Low socio-economic status/deprivation

Living in a community characterised by poverty and inequality increases the risks of negative life outcomes, including ACEs. Although many children living in poverty have no ACEs, and many children with ACEs are not in poverty, studies show that the risk of suffering ACEs increases with lower income (Figure 3.9) and deprivation (31,54,81). Equally, adults that live in deprived communities or have low incomes are more likely to have a history of ACEs⁹ (Figure 3.10).

⁸ Analyses conducted for this report, based on data in (9,51).

⁹ Combined data from English (15) and Welsh (22) ACE surveys.

Figure 3.9: Prevalence of ACEs in Scottish children (age 8 years) by household income quintile (54)

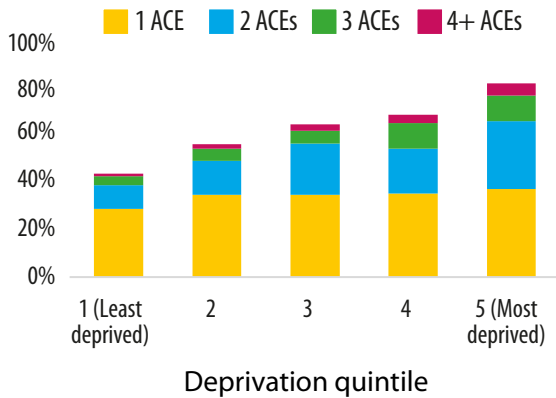
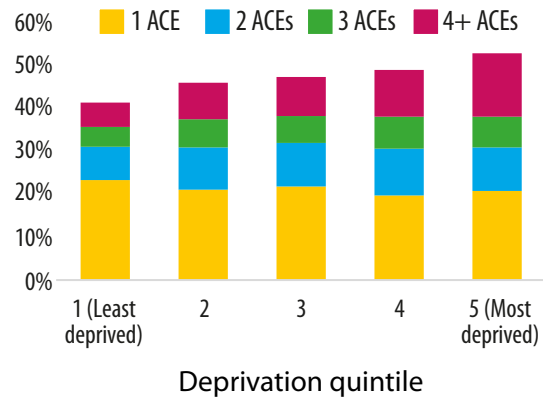


Figure 3.10: Prevalence of ACEs in adults in England and Wales, by residential deprivation⁹



Other socio-demographics

A range of other socio-demographics may affect an individual’s risk of ACEs. For example, children with disabilities, learning difficulties or developmental disorders are at greater risk of ACE exposure (82). There is also a high prevalence of ACEs among lesbian, gay, bisexual and transgender (LGBT) populations, suggesting that ACEs may account for some of the excess risk of poor health outcomes in these groups (83,84). In one USA study, compared with their heterosexual peers, homosexual respondents were more than twice as likely to report physical, emotional and sexual abuse (85).

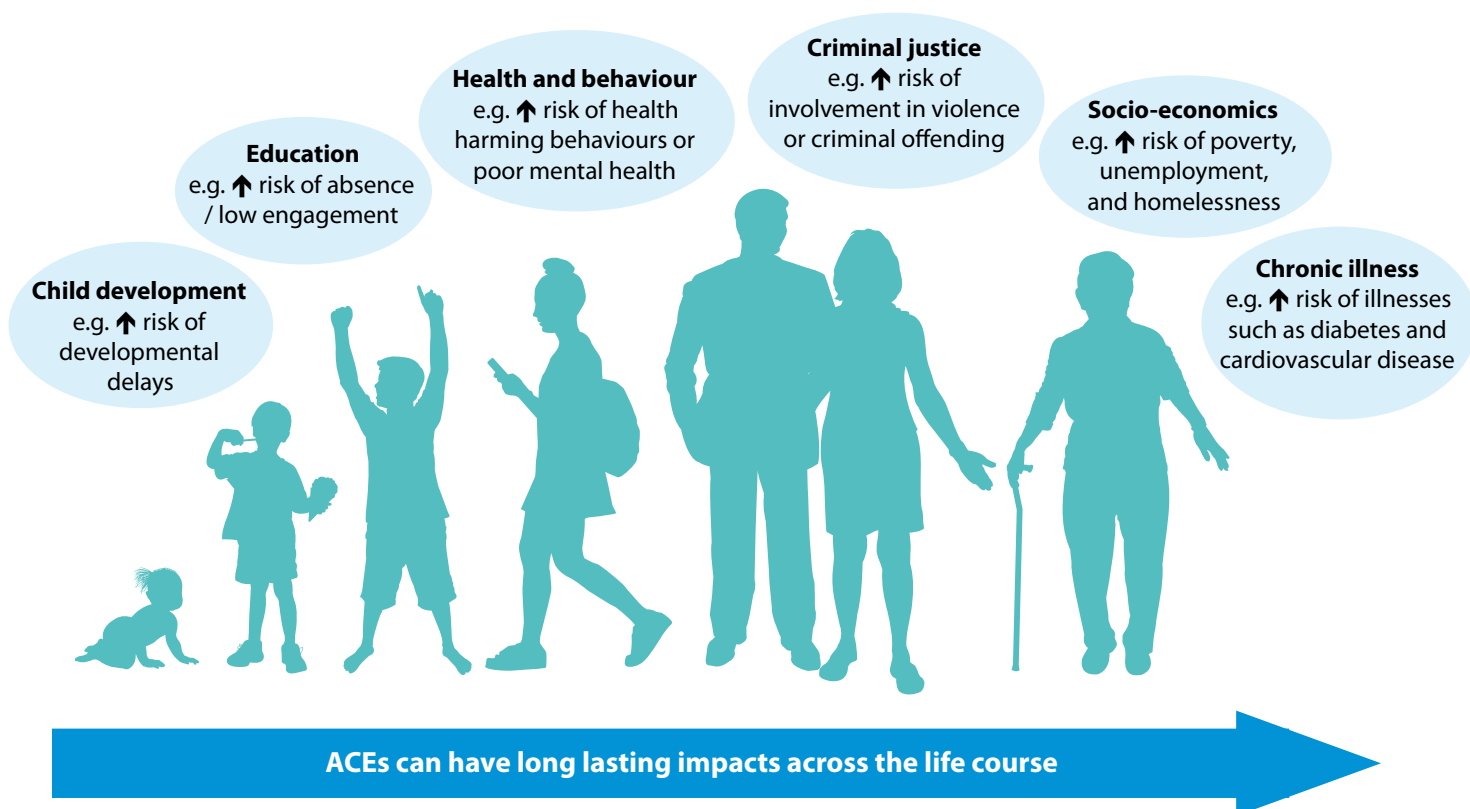
⁹ Combined data from English (15) and Welsh (22) ACE surveys.

4. The impacts of ACEs across the life course

- ACEs reduce individuals' health, educational and social opportunities across the life course.
- Relationships between ACEs and poor outcomes are cumulative – the more ACEs people suffer, the greater their risks of poor outcomes.
- Exposure to ACEs is not deterministic of poor life opportunities. Many people who suffer ACEs avoid their harmful impacts.

Although many people who are exposed to ACEs do not experience any harmful effects (see Section 7.10), for many others ACEs can have long lasting impacts across the life course, affecting childhood development, education, health, socio-economic outcomes and vulnerability to violence and criminal involvement (Figure 4.1). The impacts of ACEs are not uniform, but can vary across demographic groups (Box 4.1).

Figure 4.1: The impacts of ACEs across the life course



4.1 Early child development

The foundations of children's development are laid during the first few years of life and children that suffer ACEs over this period can be vulnerable to developmental delays and biological changes that can impact their opportunities throughout life (see Section 5). Studies have associated ACEs with poorer outcomes across a range of developmental markers, including cognitive, language, social-emotional, literacy and maths skills (86–89).

Due to the brain's neuroplasticity, opportunities exist to reorganise and form new neural networks (90), protecting against the harmful effects of ACEs (see Section 7.10).

4.2 Education

The impacts of ACEs can affect children's opportunities to learn. For example, children that suffer ACEs may have more difficulty concentrating and forming relationships with teachers and peers (91,92) and greater school absence due to ill health (see Section 4.3). Accordingly, ACEs have been associated with lower school engagement, greater absenteeism, behavioural difficulties, lower grades and higher school drop-out (88,93–95).

In a UK study, compared to adults with no ACEs, adults with 4+ ACEs were more likely to have no educational qualifications (e.g. no high school awards/diplomas). However, if they had managed to achieve secondary school qualifications they were just as likely to have progressed to higher education (14). This shows the importance of schools in mitigating the impacts of ACEs.

4.3 Health: Injury, mental health, health harming behaviours and chronic illness

ACEs such as physical abuse can lead to acute injuries, including head trauma (96) and fractures (97). Individuals with ACEs have a higher risk of poor mental well-being and mental illness, including anxiety, and psychotic and personality disorders (98–101), both in childhood and as adults. The biological (see Section 5) and psychosocial impacts of ACEs can mean affected individuals can: be more sensitive to stress, perceive greater threat in the world around them, hold more negative views about themselves, have access to fewer resilience resources (see Section 7.10) and use more maladaptive coping strategies (e.g. health-harming behaviours such as substance use) (98). Children who suffer ACEs are at increased risk of somatic conditions (e.g. headaches, stomach problems, skin conditions), illnesses and chronic medical conditions such as asthma (102,103). Furthermore, the biological impacts of ACEs on inflammation levels and immune functioning (see Section 5), as well as health-harming behaviours, can also increase vulnerability to poorer health in adulthood and the early development of chronic disease.

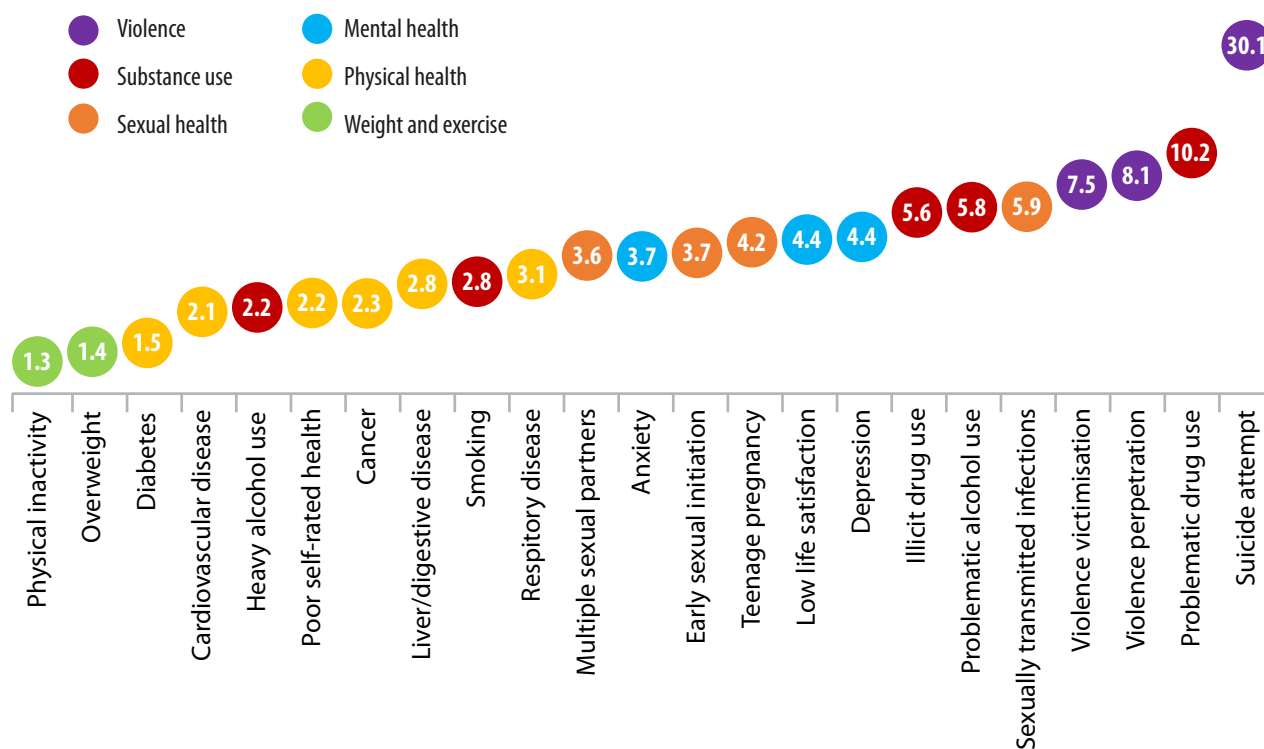
The relationship between ACEs and poor health outcomes are cumulative; the more ACEs individuals suffer, the greater the risk of a poor outcome (13). In a meta-analysis of international ACE studies, adults with 4+ ACEs had increased risks of worse health outcomes compared to those with 0 ACEs, with increased odds ranging from 1.3 for physical inactivity to 30.1 for suicide attempt¹⁰. Associations were modest for physical inactivity, obesity and diabetes; moderate for smoking, heavy alcohol use, poor self-rated health, cancer, heart disease and respiratory disease; strong for sexual risk-taking, mental ill health and problematic alcohol use, and strongest for problematic drug use and interpersonal and self-directed violence (1) (see Figure 4.2).

In the USA, ACEs have been associated with 45% of all childhood-onset mental disorders and between a quarter and a third of all adult-onset disorders (104).

In the UK, adults with multiple ACEs develop chronic conditions such as cancer, heart disease and respiratory disease around 10 years earlier than adults with no ACEs (105).

¹⁰ Data includes odds ratios from all available studies. For odds ratios excluding outliers see Hughes et al, 2019 (1).

Figure 4.2: Increased risks (pooled odds ratios) of health outcomes in adults that have suffered four or more ACEs (compared with 0 ACEs)¹⁰(1)



4.4 Violence

Suffering child maltreatment and other ACEs can increase children’s risks of being a victim and a perpetrator of violence throughout life. ACEs have been associated with involvement in bullying, youth violence and intimate partner violence, as well as violent offending (56,106–112). The impacts of ACEs on risks of violence and other health harms can mean that parents with ACEs become more vulnerable to exposing their own children to ACEs such as neglect, maltreatment and intimate partner violence (113–115) (see Section 4.7).

Despite ACEs increasing the risks of violence, only a minority of those who suffered ACEs report involvement in violence as adults.

4.5 Criminal justice

ACEs place a heavy burden on criminal justice systems, with strong relationships identified between ACEs and juvenile, serious and chronic offending (108,109). Studies have found extremely high levels of ACEs among prisoner populations, and that prisoners with ACEs can be vulnerable to poorer outcomes such as self-harm and suicide attempt (116–118).

A study from the USA found that each additional ACE experienced by juvenile offenders increased their risk of becoming a serious, chronic offender by 35% (109).

A Welsh study of male prisoners found that 84% had at least one ACE and 46% had four or more (119).

¹⁰ Data includes odds ratios from all available studies. For odds ratios excluding outliers see Hughes et al, 2019 (1).

4.6 Socio-economic outcomes

The detrimental impacts of ACEs can have considerable influence on individuals' long-term socio-economic outcomes. Adults who suffered ACEs are at increased risk of unemployment (14,15), disability retirement (120,121), living in poverty (15) and homelessness (122,123). Thus, adults in deprived communities can report higher levels of ACEs (Box 4.2). Relationships between ACEs and socio-economic outcomes can be mediated by factors including educational attainment, social support (124) and childhood socio-economic disadvantage (125).

Box 4.1: How the impact of ACEs can vary by demographics

Just as the prevalence of ACEs can be socially patterned (see Section 3.5), the impacts of ACEs can also vary by socio-economics, gender, ethnicity and race, and sexuality. For example:

- In Wales, the impact of ACEs on mental well-being has been found to be exacerbated by deprivation (126).
- In the USA, the percentage of children with 4+ ACEs that experience poorer health outcomes has been found to be higher among children living in poverty compared with those with a high family income (81).
- The relationships between ACEs and adult hopelessness (127) and Chronic Obstructive Pulmonary Disease (COPD) (128) have been found to be stronger in women than men. However, in adolescents, the relationship between ACEs and anti-social behaviour has been found to be stronger for males (129).
- The relationship between ACEs and outcomes such as health-harming behaviours, anti-social behaviours and depressive symptoms varies by ethnicity or race (56,130–132).
- Studies suggest a stronger link between ACEs and early sexual debut for sexual minorities (133).

Box 4.2: ACEs can drive deprivation

Although ACEs are experienced by individuals in all sections of society, those living in areas of higher deprivation are often at increased risk of ACE exposure (Section 3.5). Furthermore, since ACEs impact on a wide range of educational, health and social outcomes, individuals with ACEs often find themselves with fewer employment and social opportunities as they enter and move through adulthood. This can inhibit social movement, limiting people to deprived areas. It can also mean that their own children grow up in deprived areas, with greater risk of being exposed to ACEs (see Section 4.7). Individuals living in deprivation can also have lower access to resilience resources, making the mental and physical health impacts of ACEs harder to cope with. In other words, ACEs can drive and trap family generations in cycles of deprivation and poverty (134).

4.7 Intergenerational effects

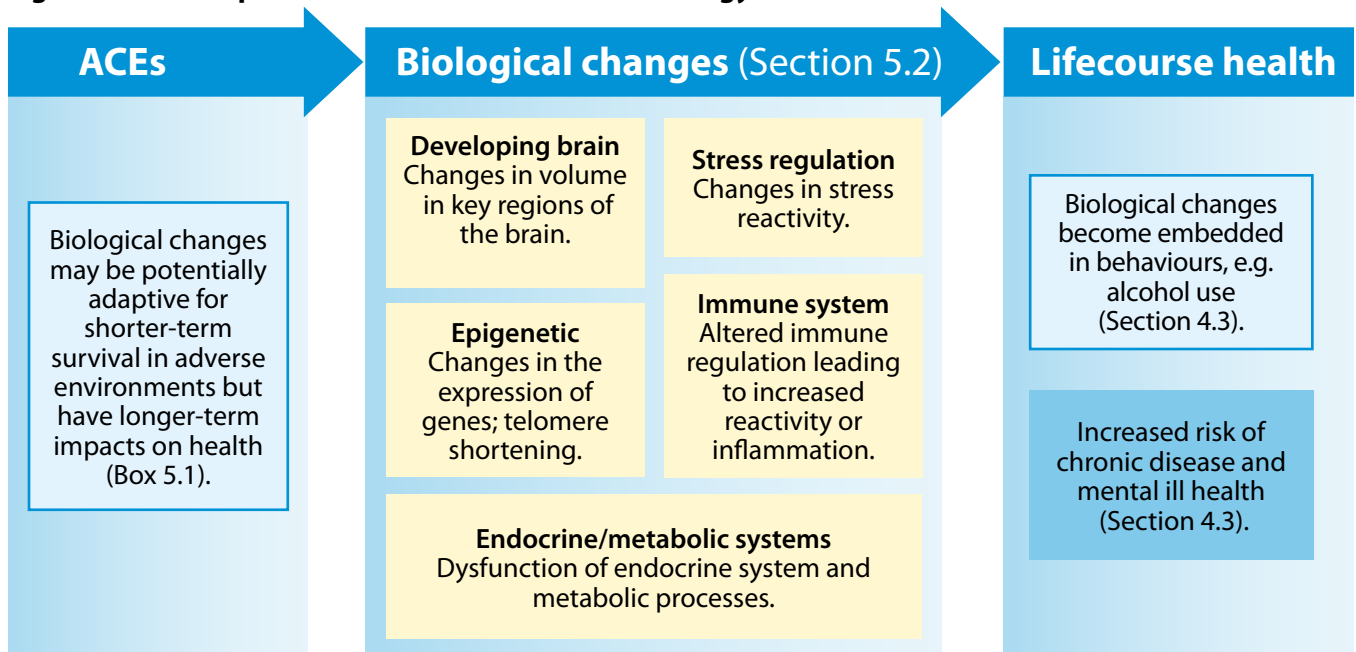
The sequelae of ACEs can extend across generations, with the children of individuals who have suffered ACEs having increased risk of developmental problems, mental health problems, health problems including lower birthweight and asthma, emotional and behavioural difficulties, and risk behaviours such as smoking (135–140). In addition, parents who experienced ACEs as a child can be at increased risk of exposing their own children to ACEs (141). Although the mechanisms of transmission are not fully understood, there are likely to be multiple pathways relating to: biological changes in the parent and foetus (e.g. epigenetic changes, see Section 5), parental mental health problems, health-harming behaviours such as alcohol/drug use or poor diet, social learning and environmental factors such as low socio-economic status or social isolation (138,142–148) (see also Section 5).

5. The biology of ACEs

- Early brain development enables the growing child to adapt for optimal survival in the environment they live in, but leaves the brain susceptible to negative exposures in childhood.
- Toxic stress can impact on an individual's biology, including brain development and stress and immune regulatory systems, increasing risks of later mental and physical ill health.

Stressful experiences early in life can result in biological changes in the body (149). These changes are thought to be adaptive strategies that enable an individual to survive within adverse environments (150) (Box 5.1). Whilst they can be protective in the short term, these adaptations can increase the risk of cognitive defects, psychopathology, chronic disease and social problems in the longer term, and can impact on subsequent generations (Figure 5.1).

Figure 5.1: The impact of ACEs and toxic stress on biology



Box 5.1: The adaptive nature of ACEs

Biological changes that arise from ACEs are thought to be adaptive strategies, protecting the survival of individuals living in stressful circumstances, but at costs to longer-term health and longevity (a trade-off). For instance:

- Although studies are inconsistent, child maltreatment has been related to increases in key inflammatory mediators (151). These mediators respond to injury and promote cell repair, helping to heal the body from trauma in the short term, but can lead to systemic inflammation and increased risk of chronic conditions in the longer term.
- Early life stress, particularly exposure to violence, has been associated with acceleration of puberty. This may be an adaptive strategy that increases the chances of an individual's reproduction, but at costs to longer-term mental and physical health (150).
- From an evolutionary perspective, pre-term birth may be a maternal or foetal biological strategy in response to stressful circumstances that increases the chance of survival, but at longer-term cost to health or risk of infant mortality (152).

5.1 Early brain development

Human brains take over two decades to fully develop, with slow growth thought to provide the time needed to fully adapt to life as an adult (153). In the first two years of life, a baby's brain grows from around a third to 80% of its adult volume (154). While genes provide the basic scaffolding for development, the brain adapts to what the child sees, hears and feels. Connections that are used become stronger, whilst those that are not are discarded (known as neural pruning). This process of pruning creates efficient pathways, enabling the brain to send information quickly (155). Primitive brain structures that respond to danger (e.g. the amygdala) develop first and areas for higher cognition (e.g. the prefrontal cortex) develop last. This enables the child to adapt to their environment, yet also leaves the brain susceptible to negative exposures in early childhood. Some emotional stress (positive stress) poses no harm. However, stress that is frequent, chronic and uncontrolled can be toxic to the developing child (Box 5.2), impacting substantially on a child's brain development, and stress, immune, endocrine and metabolic systems (Section 5.2). ACEs such as exposure to caregiver IPV may even affect a child's brain and body in utero, since maternal stress during pregnancy is known to impact on development of a growing foetus (156).

Box 5.2: The impact of stress on the brain



Positive stress: not harmful, and helps to develop healthy coping mechanisms and problem-solving skills. Involves brief activation of the stress response, elevating heart rate, blood pressure and hormonal levels. Homeostasis recovers quickly through the body's natural coping strategies.



Tolerable stress: not harmful, but does not support development. Involves time-limited activation of the stress response that results in short-term systemic changes. Homeostasis recovers through the buffering effect of a caring adult or other interventions.



Toxic stress: can be harmful. Prolonged activation of the stress response in children disrupts brain architecture and increases risk of health disorders. Prolonged allostasis establishes a chronic stress response.

Source: Adapted from Bucci et al, 2016 (157).

5.2 The effects of toxic stress on the brain and body

Brain development

ACEs can impact on a growing brain's structure and function. The elevation of stress mediators such as cortisol can destroy or stunt the growth of neurons in stress-sensitive areas of the brain such as the prefrontal cortex, the hippocampus and the amygdala (158). The interaction of these three regions is essential for healthy emotion regulation, and these areas of the brain are commonly affected by ACEs (159). Studies show that early adversity can lead to volume reduction in frontal cortical structures, structural abnormalities in the amygdala, and smaller hippocampus regions of the brain (159,160). This may account, at least in part, for the similar risks of poor outcomes seen between individuals with ACEs and those with traumatic brain injury (TBI) (Box 5.3).

Box 5.3: Traumatic brain injury (TBI)

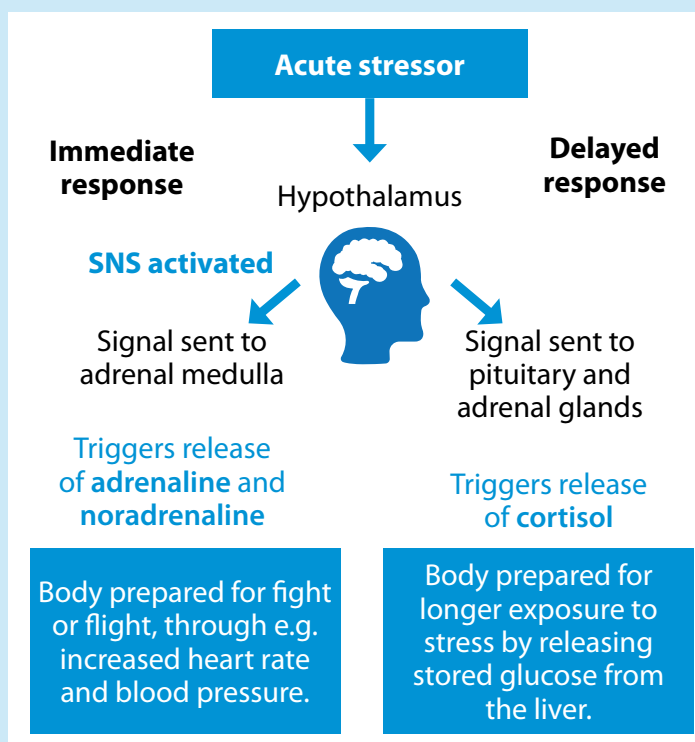
TBI is damage to the brain from an external force, such as an assault, fall or blow to the head. This type of injury can affect brain structures and functions such as memory, attention and emotional regulation, and increase risks of impulsive behaviour and poor social skills. Although the causal mechanisms are unclear, experiencing a TBI in childhood can also increase risks of perpetrating crime and involvement in violence (161), similar to the risks associated with ACEs (see Section 4).

The stress regulation system

The stress system (Box 5.4) is key to humans' survival. It is a process of protection that gets the body ready to react to danger. However, if the activation of stress hormones is prolonged, what is initially an adaptive response to a stressor can ultimately become maladaptive and destructive. Chronic stress from ACEs impacts on stress reactivity, as well as the dysregulation of other systems including immune, endocrine and metabolic systems. This can lead to changes in the regulation of key hormones such as cortisol and adrenaline, and reduced responsiveness to these hormones, making it harder for an individual to recover from a stressor (162). Chronic activation of the stress response leads to progressive wear and tear, often referred to as allostatic load (6). This can increase the rate of aging and the onset of illnesses such as cardiovascular disease and mental illness (163).

Box 5.4: Responding to stress (157,164–166)

The body's stress response is a complex mechanism. When a potential threat is sensed by the amygdala, a distress signal is sent to the hypothalamus, triggering the sympathetic nervous system (SNS) and the release of adrenaline and noradrenaline into the bloodstream. This immediate response to stress increases the heart rate and blood pressure and prepares the body for fight or flight. If the brain perceives ongoing danger, there is also a delayed response: the SNS continues to be activated, but the release of cortisol is triggered. This helps the body deal with longer exposure to stress by ensuring the body has a steady supply of energy. Cortisol also inhibits non-essential functions. Following stress, it is important that the body returns to normal. Prolonged activation of stress hormones can be toxic to the brain and body. For more detailed information on the stress response system see Bhushan et al, 2020 (162).



The immune system

Toxic stress can lead to immune dysregulation, increasing vulnerability to infection, chronic inflammation and autoimmunity (where the immune system attacks its own healthy cells and tissues) (162). Chronic inflammation can increase the risk of later chronic diseases such as cancer or cardiovascular disease (167).

The endocrine system and metabolic activity

The endocrine system is a communication system formed by a network of glands and organs, that uses hormones to co-ordinate essential bodily functions such as metabolism, growth and development, reproduction and response to stressors such as injury or stress. Stress can impair the endocrine system, leading to a number of issues such as impaired growth, weight gain or loss, early or delayed puberty, reproductive problems and dysregulation of metabolic processes (162). Toxic stress can increase the risk of metabolic problems such as high blood pressure, insulin resistance and excess fat, increasing the risk of diseases such as cardiovascular disease, type 2 diabetes and obesity (162).

Epigenetics

Epigenetics is a field of study that explores how environmental factors change the expressions of genes (i.e. the way they work). Epigenetic processes can regulate gene activity by turning on or off certain genes, changing the amount of protein synthesised by a gene, or influencing when a gene is expressed throughout the life course. Evidence suggests that early life adversity is associated with premature genetic aging (marked by a shorter telomere length – structures at the end of a chromosome that protect against chromosome degradation), increasing the risk of certain chronic diseases (162). The toxic stress of ACEs may not only impact the individual themselves, but could be transmitted across generations at a genetic level. ACEs have been associated with epigenetic changes that impact brain development, cognition, behaviour and health (168). Early research also suggests that the earlier the changes occur in the child's life, the more likely it is that the impacts will be enduring and passed on to future generations (168). Indeed, epigenetic changes can also occur in utero, where stress during pregnancy can affect the expression of a number of key genes in the placenta, affecting the health of the offspring (156). For further information on epigenetics see Bhushan et al, 2020 (162).

6. The financial and social costs of ACEs

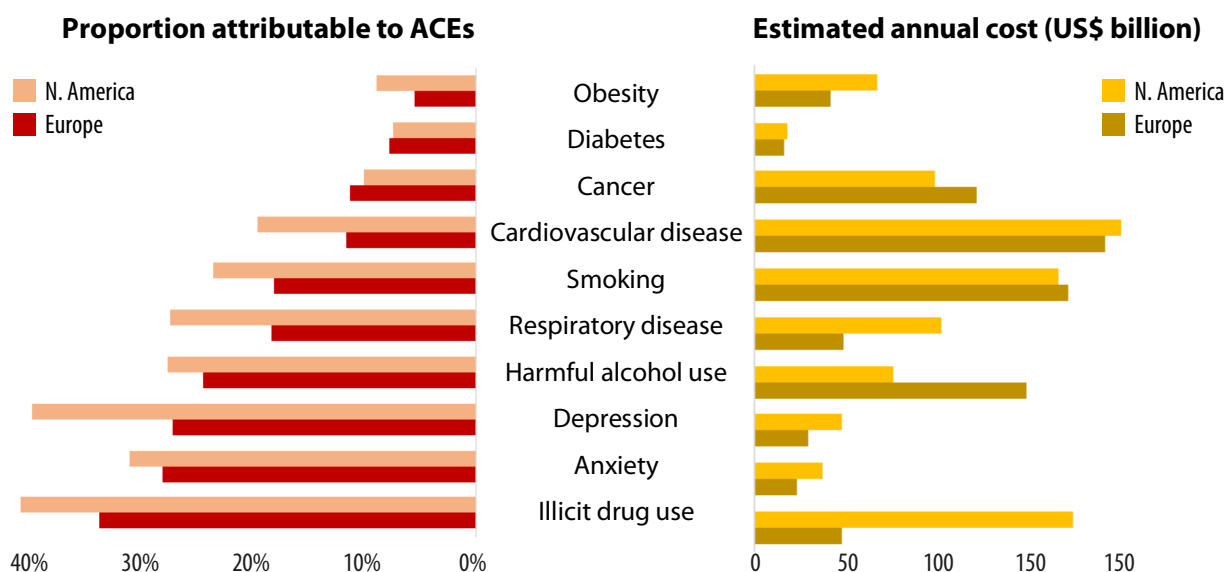
- There are vast financial costs associated with ACEs, both in childhood and in the longer term due to their health and social impacts across the life course.
- The annual financial costs of the life course health impacts of ACEs have been estimated to be equivalent to at least 2.7% of gross domestic product [GDP] in the WHO European region and 3.6% of GDP in North America.

The financial costs of ACEs to society are vast. In childhood, ACEs can impose major costs on a range of services and systems, including:

- **Health services**, e.g. treatment for acute injuries and physical and mental illness associated with ACE exposure.
- **Social care services**, e.g. for family intervention and child protection systems.
- **Education systems**, e.g. special education and behavioural management.
- **Criminal justice systems**, e.g. incarceration of perpetrators of maltreatment and juvenile justice costs.

In the longer term, the health and social impacts of ACEs lead to ongoing health, social care and criminal justice demands, as well as unemployment and lost productivity due to illness or premature death. Based on the impact of ACEs on four major health risks (harmful alcohol use, smoking, illicit drug use and obesity) and six major causes of ill health (anxiety, depression, diabetes, cancer, cardiovascular disease and respiratory disease), the annual health burden of ACEs in 2017 has been estimated at 24.6 million Disability-Adjusted Life Years¹¹ (DALYs) in the WHO European region and 12.9 million DALYs in North America. The financial costs associated with this are estimated to be \$581 billion for the European region (equivalent to 2.7% of GDP) and \$748 billion in North America (equivalent to 3.6% of GDP) (12).

Figure 6.1: Proportion of risks and causes of ill health attributable to ACEs and estimated annual costs, WHO European region and North America



11 Sum of the years of life lost due to premature mortality and years lived with a disability, due to prevalent cases of a health condition or disease.

Figure 6.1 shows the proportion of each of the included risk factors and health conditions estimated to be attributable to ACEs (population attributable fraction) and the annual financial cost associated with this for the WHO European region and North America. In calculating the total ACE-attributable cost, duplication of DALYs between risk factors and causes of ill health was removed (i.e. DALYs for smoking attributable to cancer). In line with the cumulative impacts of ACEs on health, the cost analysis found that the vast majority of the health and financial costs of ACEs could be accounted for by individuals that had suffered multiple ACEs (77% in Europe, 82% in North America (12)).

Using a similar methodology, estimates of the costs of ACEs in 2019 across four health risk behaviours (smoking, alcohol use, illicit drug use and high body mass index [BMI]) and eight causes of ill health (anxiety, depression, violence, type 2 diabetes, cancer, cardiovascular disease, stroke and respiratory disease) have been calculated for 28 European countries (169). These costs and the equivalent proportion of national GDP they represent are shown in Table 6.1.

Table 6.1: Estimated annual costs of ACEs across four health risks and eight health conditions in 28 European countries (169)

Country	ACE-attributable costs (US\$ billion)	Equivalent % of GDP	Country	ACE-attributable costs (US\$ billion)	Equivalent % of GDP
Albania	0.4	2.8	Montenegro	0.1	2.1
Belgium	7.5	1.4	Netherlands	28.1	3.1
Czech Republic	5.7	2.3	North Macedonia	0.2	1.5
Denmark	8.1	2.3	Norway	11.0	2.7
Finland	11.0	4.1	Poland	14.7	2.5
France	38.0	1.4	Romania	8.5	3.4
Germany	129.4	3.4	Russian Federation	50.0	2.9
Greece	2.4	1.2	Serbia	1.4	2.8
Hungary	3.9	2.4	Spain	16.8	1.2
Ireland	7.7	2.0	Sweden	6.1	1.1
Italy	30.4	1.5	Switzerland	20.5	2.9
Latvia	1.9	5.5	Turkey	8.4	1.1
Lithuania	1.8	3.3	Ukraine	9.3	6.0
Moldova	0.5	4.0	United Kingdom	78.6	2.8

GDP=Gross domestic product. GDP (current US\$) 2019.

In addition to the economic costs of ACEs presented here, the total financial costs of ACEs will include wider social costs to individuals, families and communities. For example, when someone commits a crime, there is a potential social cost on the victim and wider family/community, the criminal justice system and the economy, depending on the crime committed. Social costs can include those relating to e.g. criminal activity, unemployment, low educational attainment and poor health behaviours, which are associated with experiencing ACEs (see Section 4). Understanding the full range of social impacts from ACEs should be a research priority in order to identify the wider financial implications on society as whole.

7. Preventing and responding to ACEs

- A range of approaches can prevent the impacts of ACEs (primary prevention) and respond to ACEs and their consequences (secondary prevention), including policies and legislation programmes to strengthen families, the provision of education and life skill development, and good quality response and support programmes.
- A number of interventions cut across multiple ACE types, addressing common risks.
- Developing resilience in children is crucial for mitigating the impact of ACEs and equipping children with the skills to cope with future challenges throughout the life course.

Preventing and responding to ACEs and their impacts across the life course (and generations) requires the implementation of a comprehensive package of prevention, involving governments, society and the private sector (170). A broad range of approaches can prevent ACEs (primary prevention) and others can respond to ACEs and their consequences (secondary prevention). However, often, approaches are capable of both primary and secondary prevention at the same time. For instance, programmes responding to ACEs and their consequences within a family (secondary prevention) may also be protecting an unborn child from ACEs in the future (primary prevention). Approaches include:



Policies, legislation and strategies that **promote the social determinants of health and human rights, address inequalities in health and genders**, and aim to **alter norms, behaviours and environments that promote ACEs** provide a critical foundation for ACE prevention and response (170).



Strengthening families and developing and maintaining safe, stable, nurturing relationships and environments for children, families and wider communities are essential in preventing and responding to ACEs and supporting those affected. Approaches can include parenting programmes, as well as strengthening economic support for families (170,171).



Provision of **education** and opportunities to **develop life skills** can help children deal with stress, manage emotions and behaviour, and resolve conflict (170). Children can be educated on specific ACEs (e.g. sexual abuse). Schools also provide important opportunities for children to develop relationships and a sense of belonging outside of the family. Education can extend to other groups, such as professionals, to raise awareness of ACEs and improve support.



Response and support services can reduce the impact that adversity has on children and adults. Services can include psychological support, health services to address the health impacts of abuse, or practical support such as legal advice or shelter. Some support interventions have also been found to counter the toxic stress response, improving biological functioning.



Multi-component programmes combine different strategies to address multiple risk factors at the same time. Elements may be implemented at a community level through the provision of programmes or services, or at a family level, combining parental and child elements of prevention.

Over the next seven sections, these five broad approaches are used as a framework to discuss effective or promising interventions for the prevention and mitigation of ACEs, including child maltreatment (Section 7.1), and exposure to household or parental: intimate partner violence (Section 7.2), alcohol problems (Section 7.3), drug misuse (Section 7.4), incarceration (Section 7.5), mental illness (Section 7.6), and parental separation (Section 7.7). A summary is presented in Table 7.8. Additional strategies are also included that can help to mitigate the harmful effects of ACEs, including building resilience - the ability to cope with or recover from the effects of adversity (Section 7.10), and ACE- or trauma-informed practice (Section 7.11).

7.1 Preventing and responding to child maltreatment

Child maltreatment causes emotional and physical harm and can have far reaching consequences across the life course (Section 4). The Sustainable Development Goals set a target to end all forms of violence against children (see Section 8). To help achieve this, the WHO's INSPIRE resource sets out seven evidence-based strategies to prevent violence against children (Box 7.1) (172). The accompanying *INSPIRE Handbook: Action for implementing the seven strategies for ending violence against children* (173) explains how to choose and implement interventions for each strategy. These strategies have most effect

In the WHO's European ACE surveys, 18% of students had experienced physical abuse, 10% emotional abuse and 6% sexual abuse as a child.

if they are part of a comprehensive plan, with strategies working in combination with each other. The following sections provide more detail on effective or promising interventions (see Table 7.1 for a summary).

Box 7.1: INSPIRE: Seven strategies for ending violence against children (172)

Implementation and enforcement of laws - Ensuring the implementation and enforcement of laws to prevent violent behaviours, reduce excessive alcohol use, and limit youth access to firearms and other weapons.

Norms and values - Strengthening norms and values that support non-violent, respectful, nurturing, positive and gender-equitable relationships for all children and adolescents.

Safe environments - Creating and sustaining safe streets and other environments where children and youth gather and spend time.

Parent and caregiver support - Reducing harsh parenting and creating positive parent-child relationships.

Income and economic strengthening - Improving families' economic security and stability, reducing child maltreatment and intimate partner violence.

Response and support services - Improving access to good-quality health, social welfare and criminal justice support services for all children who need them, including for reporting violence – to reduce the long-term impact of violence.

Education and life skills - Increasing children's access to more effective, gender-equitable education and social-emotional learning and life-skills training, and ensuring that schools environments are safe and enabling.



Addressing societal norms and values

Legislation that prohibits corporal punishment of children has the potential to reduce child physical abuse, and is most effective when covering all settings (including the home) (174). Many countries have banned corporal punishment in all settings (174). Public knowledge of and attitudes towards child maltreatment can be targeted through **public awareness-raising and education programmes**, that disseminate messages via television, radio, printed materials and the Internet, or through targeted training programmes (e.g. Prevent It, Box 7.2). Programme aims can include raising awareness of child maltreatment, addressing social and gender norms that promote abuse, promoting positive parenting and encouraging disclosures and/or reporting of abuse. These programmes can improve knowledge, attitudes and behaviours relating to abuse (175) and can promote debate and preventative action. However, there is limited evidence of their impact in reducing child maltreatment (176).

Box 7.2: Prevent It**Location:** Canada.**Type:** Educational workshop for adults.**Content:** Provision of information on child sexual abuse, survivor and professional accounts, and opportunities for reflection.**Evidence:** Associated with improvements in behaviour, knowledge and attitudes towards child sexual abuse (175).**Website:** <https://littlewarriors.ca/prevent-it/>**Strengthening families**

Interventions can be targeted at parents to improve their knowledge of child development and parenting skills and strengthen parent-child relationships. These approaches are known as parenting programmes, and a vast range of such programmes are used to strengthen parenting and families across the world with varying levels of evidence (e.g. Nordic countries (177)). One type of parenting programme is **parenting education** (e.g. Incredible Years, Box 7.3; ACT, Box 7.4; Voimaperheet, Box 7.5), which is often group-based and delivered in community settings. Some parenting education programmes focus on specific problems, such as how to prevent abusive head trauma in infants (178), whilst others take a more general approach. A second type of parenting programme is **home visiting programmes** (e.g. Nurse-Family Partnership, Box 7.6). These aim to develop parenting practices, promote a safe home environment and improve family support (e.g. through referral to services) through a series of home visits during pregnancy and post-partum. Parenting programmes have been successful in reducing child maltreatment and child injuries, reducing risk factors for child maltreatment such as harsh parenting and promoting protective factors such as positive strengths based parenting practices (179,180). Although programmes may be resource intensive, they have been found to offer substantial return on investment in some locations and populations (181–183).

Box 7.3: Incredible Years**Location:** USA and other countries.**Type:** Prevention and treatment programme for families with children up to 12 years of age.**Content:** Aims to promote positive parenting strategies and reduce harsh discipline, as well as prevent and treat young children's behaviour problems and promote their social, emotional, and academic competence. The programme has prevention and treatment versions for different age groups.**Evidence:** Associated with increased parental nurturing, decreased use of harsh discipline, and reduced child behavioural problems (184,185).**Website:** <https://www.incredibleyears.com/>**Box 7.4: ACT Raising Safe Kids****Location:** USA and other countries.**Type:** Group-based parenting education.**Content:** Teaches positive parenting skills to parents and caregivers of children (0-10 years).**Evidence:** Associated with decreases in harsh parenting, negative discipline and child behavioural problems, as well as increases in nurturing behaviour (186).**Website:** www.apa.org/act

Box 7.5: Voimaperheet**Location:** Finland.**Type:** Internet-/telephone-based parent training for childhood disruptive behaviour.**Content:** Based on the Strongest Families programme developed in Canada, parents whose children display high levels of parent-reported behavioural problems have access to psychoeducational material (e.g. online videos and exercises) and 10 weekly telephone calls with a family coach.**Evidence:** Associated with fewer behavioural problems, improved parenting skills and less need for mental health support services (187,188).

In the UK, parenting interventions for children with conduct disorder are estimated to save £9,288 per child over 25 years, exceeding the average cost of intervention by around 8 to 1 (189).

Box 7.6: Nurse-Family Partnership**Location:** USA and other countries.**Type:** Home visiting for first-time, low-income mothers.**Content:** Trained nurses make regular visits from pregnancy through to the children's 2nd birthday, developing trusting relationships and offering advice and support.**Evidence:** Associated with a reduction in child maltreatment (a 48% decrease at a 15-year follow up (190)), improvements in women's prenatal health and economic self-sufficiency, reductions in child injuries, and improvements in early child mental health, cognitive and language development, and school readiness (190). Impacts may extend into youth and early adulthood, particularly amongst girls (e.g. reduced engagement with the criminal justice system) (191).**Website:** <https://www.nursefamilypartnership.org/>

In the UK, Nurse-Family Partnership for at-risk mothers has been estimated to provide a benefit of £1.94 per £1 invested (192).

Families can also be supported through **income and economic strengthening interventions**, such as child support payments, tax credits and subsidised childcare. These approaches improve families': financial security; ability to provide children with basic necessities (e.g. food and shelter) and safe and nurturing child care; and parental stress (172,193), which are risk factors for child maltreatment.

Other potentially effective interventions include those aimed at reducing parental burnout, which has a strong link to child maltreatment (194). Emerging evidence suggests that parental psychoeducation focusing on the reduction of parental stressors, and parental support groups that provide space to share family difficulties, can both reduce parental burnout levels, as well as neglect and abuse towards children (195). Work to strengthen families may also offer valuable opportunities to support parents with their own toxic stress effects (e.g. support to help regulate their own stress responses, Box 7.7).

Box 7.7: Addressing the toxic stress response

With ACEs and toxic stress potentially affecting an individual's biology (see Section 5), a number of interventions have been found to improve stress hormone balance and neurologic, endocrine, immune, metabolic and genetic function, which counter the toxic stress response. These include: supportive relationships, quality sleep, balanced nutrition, physical activity, mindfulness practices, experiencing nature, and trauma-specific mental health services (22).



Providing education and life skills

For children, programmes to improve education and life skills, or to raise awareness of the risks of abuse can be helpful. For instance, **pre-school enrichment programmes** aim to develop young children's physical, social, emotional and cognitive skills, and are often delivered alongside parent programmes or family support (e.g. Sure Start, Box 7.8). Emerging evidence suggests that they can prevent child maltreatment and improve parenting practices (171). **School-based violence prevention programmes** aim to teach children about sexual abuse, how to recognise and avoid harmful situations, body ownership, how to distinguish between appropriate and inappropriate forms of touching and disclosing abuse to a trusted adult. Programmes can be effective at strengthening protective factors against child abuse (e.g. knowledge of sexual abuse/protective behaviours) and may increase disclosures (196). However, long-term impacts on child maltreatment are not known. A further approach involves the **training of health and other professionals**, such as teachers, social workers and police, to increase awareness of child maltreatment and improve confidence to identify and respond to it. The WHO's clinical guidelines for responding to children and adolescents who have been sexually abused provide recommendations on identification and clinical care for victims, and guidance on how to organise services and training for health-care providers (197). The SEEK primary care training programme (Box 7.9) has been associated with some positive improvements for both professionals and parents (198,199).

Box 7.8: Sure Start

Location: UK.

Type: Parent and child support (up to 4 years of age).

Content: Sure Start children's centres target parents and young children living in the most disadvantaged areas. They provide support for children's learning, health, well-being and social and emotional development.

Evidence: Associated with reductions in risk factors for child maltreatment, including negative parenting practices (171).

Box 7.9: Safe Environment for Every Kid (SEEK)

Location: USA.

Type: Screening and referral by health professionals in paediatric primary care.

Content: Following training, health professionals use a parent screening questionnaire at regular check-ups for problems in the child's family and home environment between 0 and 5 years of age. Where they are required, referrals can then be made to community services.

Evidence: Associated with improvements in professionals' knowledge, skills and ability to address parents' psychosocial concerns, and reductions in child maltreatment (198,199).

Website: <https://seekwellbeing.org/>



Providing support and response services

Interventions can also help to reduce the harmful impacts of child maltreatment by providing psychological support and health services. These include **counselling and therapeutic approaches**, which support children, parents and caregivers to better cope with the impacts of a child's exposure to maltreatment. These approaches have shown benefits including improvements in children's mental health and reductions in behavioural problems, reductions in parental depression and emotional distress, and improved parenting practices and family functioning (200–202). For children affected by sexual exploitation (a specific form of child sexual abuse) **child sexual exploitation response programmes** can support physical and mental health. Interventions include: focused health and/or social services, including harm reduction programmes to prevent

the spread of diseases (e.g. sexually transmitted infections), intensive case management, psychoeducational therapy and residential programmes (203). Whilst certain interventions can benefit psychosocial outcomes (e.g. safe and stable housing) and health-compromising behaviours (e.g. transactional sex), more rigorous evaluations are needed to determine the most effective approach (203). Children affected by child maltreatment can also be supported to improve biological functioning, countering the toxic stress response (Box 7.7).



Implementing multi-component interventions

Interventions that combine strategies have been successful in addressing child maltreatment or its risk factors. For instance, in the USA, Triple P Positive Parenting Program (Box 7.10) has been trialled at a community level and shown a positive impact on child maltreatment, child out-of-home placements and child maltreatment injuries (204). At a family level, the Strengthening Families Program (see Box 7.11), that combines parental, youth and family skill-building elements, has been successful in improving factors such as positive parenting and parenting efficacy (205). In Europe, programmes such as Sure Start (Box 7.8) provide multiple components for parents and children such as child care, home visits and parental support. In lower-income countries, Parenting for Lifelong Health (Box 7.12) offers a range of programmes for parents and children to prevent violence with minimal resources, and has been associated with improvements for caregivers and children (206,207).

Box 7.10: Triple P

Location: USA and other countries.

Type: Multi-level system of prevention for families with children up to 12 years of age.

Content: Aims to promote positive parenting strategies, and social competence/emotional self-regulation in children (through effective parenting). The programme covers five levels, ranging from universal media campaigns (level 1) to intensive support for high-risk families (level 5).

Evidence: Found to have a positive impact on child maltreatment, child out-of-home placements and child maltreatment injuries (204).

Website: <https://www.triplep.net/glo-en/home/>

Box 7.11: Strengthening Families Program

Location: USA and other countries.

Type: Skills training for high-risk families.

Content: Parenting skills, children's social skills and family life skills. Parent sessions can include alcohol/drug relapse prevention, family relationships, parental supervision, communication and use of positive reinforcement. Child sessions include problem-solving/coping skills.

Evidence: Effective in improving positive parenting and parenting efficacy, and reducing child mental health problems, delinquency and substance abuse (205).

Website: <https://strengtheningfamiliesprogram.org>

Box 7.12: Parenting for Lifelong Health

Location: South Africa and other low- and middle-income countries.












Type: Affordable group-based parenting programmes.

Content: Aims to establish and sustain nurturing relationships between parents and caregivers and their children through strengthening parenting skills and caring behaviours, and promoting alternatives to violent discipline.

Evidence: Associated with improvements in parenting practices and caregiver mental health, reductions in substance use among caregivers and adolescents, improved household finances and reductions in caregiver abuse and corporal punishment (206,207).

Website: <https://www.who.int/teams/social-determinants-of-health/parenting-for-lifelong-health>

Table 7.1: Interventions that can prevent or mitigate the impacts of the ACE child maltreatment

Strategy	Target group	Strength of evidence
 Public awareness-raising/education programmes	General public	◆
 Income and economic strengthening	General public	◆
 Parenting education	Parents	■ ◆ ○
 Home visitation	Parents	■ ◆
 Pre-school enrichment (with family support)	Parents, families	□ ◆
 School-based violence prevention (sexual abuse)	Children	◆
 Training of health sector and other professionals	Professionals	□ ◆
 Counselling and therapeutic approaches	Children, parents	◆ ●
 Child sexual exploitation response programmes	Children	○
 Multi-component programmes – community level	Parents, families	■ ◆
 Multi-component programmes – family level	Parents, families	■ ◆

Effective* in: ■ preventing ACEs ◆ preventing risk / increasing protective factors ● mitigating impact of ACEs
 Promising** in: □ preventing ACEs ◇ preventing risk / increasing protective factors ○ mitigating impact of ACEs

*supported by 2+ well-designed studies/systematic review ** supported by 1 well-designed study

7.2 Preventing and responding to exposure to intimate partner violence

Intimate partner violence (IPV) can affect parental functioning, parent-child relationships and child development (208). Children affected by IPV are at increased risk of other ACEs and of involvement in IPV in later life (208,209). The WHO's RESPECT framework (Box 7.13) identifies seven evidence-based strategies for the prevention of IPV against women and provides a set of action-oriented steps to support their implementation (210). Additional strategies, such as reducing access to, and the harmful use of, alcohol (see Section 7.3), also have the potential to reduce IPV (211). The following sections provide more detail on effective or promising interventions (see Table 7.2 for a summary).

In the WHO's European ACE surveys, 13% of students had been exposed to caregiver IPV as a child.

Box 7.13: RESPECT: Preventing violence against women (210)

Relationship skills strengthened – Strategies aimed at women and men to improve skills in interpersonal communication, conflict management and shared decision-making.

Empowerment of women – Economic and social empowerment such as microfinance plus gender and empowerment training, creating safe spaces and mentoring to build empowerment skills.

Services ensured – The provision of services for survivors, including police, legal, health and social services.

Poverty reduced – Strategies targeting women or the household to alleviate poverty such as cash transfers, savings, microfinance loans and labour force interventions.

Environments made safe – Efforts to create safe schools, public spaces and work environments.

Child and adolescent abuse prevented – Establishing nurturing family relationships, prohibiting corporal punishment and implementing parenting programmes.

Transform attitudes, beliefs and norms – Challenging harmful gender attitudes, beliefs, norms and stereotypes that uphold male privilege and female subordination, and that justify violence and stigmatise survivors.



Addressing societal norms and values

Laws that criminalise IPV and are enforced can act as a deterrent, sending a clear message across society about the unacceptability of IPV and helping to shift social norms around its use. Many countries have legislation relating specifically to IPV or family violence, although laws vary across countries. With gender roles and stereotypes being risk factors for IPV, programmes that work with different gender groups to promote gender equality and address harmful social and cultural gender norms can be effective. **Empowerment programmes**, such as microfinance initiatives with gender equality training, aim to increase the social and economic power of women, and have shown promise in preventing IPV across some settings, particularly those with more positive pre-existing views on gender roles (212). Emerging evidence suggests that empowerment programmes providing adults (particularly couples) with communication and relationship skills may also be effective in preventing IPV (212). Although these types of programmes have largely been implemented and evaluated in low- and middle-income countries, improvements in gender equity (e.g. a decline in the wage gap between genders) have also been linked to reductions in violence against women in the USA (213). **Programmes to alter social and cultural norms** through social marketing campaigns and working with key groups, such as men and boys, have also found some success in changing the social and cultural gender norms that support IPV (212), although evidence on IPV outcomes remains limited.



Strengthening families

As with the prevention of child maltreatment, approaches to prevent IPV among parents can involve the provision of parenting programmes such as **parenting education** and **home visiting programmes** (see Section 7.1). These programmes offer opportunities for health professionals to identify risks for IPV in parents and improve support through referral to services. They can also include dedicated IPV components that aim to raise parental awareness of IPV and the consequences for the child, reduce IPV risk factors (e.g. parental stress, poor emotional regulation and communication), promote non-violent conflict resolution and reflect on gender and/or parental childcare roles. There is emerging evidence that parenting interventions such as parenting education can be effective in reducing IPV and related risk factors, particularly those targeting abusive fathers (208,214). However, evidence is mixed for home visitation programmes that include an IPV component (e.g. educating about abusive relationships; mitigating risk factors for IPV). Although some studies report reduced household IPV (215), others have found the inclusion of an IPV component to be no more effective than standard home visitation programmes, or even ineffective or potentially harmful (216,217).

A further approach to preventing IPV is through **income and economic strengthening**. Interventions can aim to build women's economic resources and empowerment (see also *empowerment programmes*), and rebalance dependent marital relationships that reinforce gender inequalities and increase vulnerability to violence (218). As well as cash transfers (e.g. to women who care for children) and microfinance opportunities, these programmes may offer vocational training or skill-building education that can help women develop employment opportunities. Where interventions have been evaluated (mainly in Sub-Saharan Africa), research has generally reported a reduction in women's experience of IPV, although there have also been some reports of harmful effects (e.g. experiencing increased controlling behaviour by partners) (219). In communities where it is non-normative for women to work outside of the home, working women may be at increased risk of IPV (220).



Providing education and life skills

IPV prevention can involve working with school-aged children, to raise awareness of the importance of healthy, caring and supportive relationships, and signs of controlling, manipulative and abusive dating relationships. **School-based dating violence programmes** aim to equip students with skills and resources to develop healthy relationships, and to support themselves and others in abusive relationships. These programmes can also use bystander approaches to provide students with the skills to intervene to challenge harmful social norms and behaviours in their peers. They can be effective in preventing IPV perpetration (221,222).






















Providing support and response services

Providing psychological and practical support for children and parents affected by IPV can help mitigate the harmful effects of IPV exposure among children. This can include offering **counselling and therapeutic support** to children and parents, either jointly or separately. Child focused interventions, including child-/sibling-centred play therapy and group treatment, have been found to improve children's mental health and behaviours, as well as attitudes and knowledge relating to anger and violence (223). Whilst evidence for parent interventions is less clear, some interventions have been associated with improved parent IPV coping skills, parental physical and mental health, and reduced exposure to IPV in the home (214,215,224–226). A related, but wider approach is offering **support for survivors of IPV to increase safety and lessen harms** for themselves and their children. This includes the provision of shelter (temporary, safe accommodation for women and children who have left an abusive relationship), information, counselling and therapeutic support, skill-development (e.g. safety planning), and referral to services. Interventions provided during (and before/after) a shelter stay can be effective in improving children's attitudes, knowledge, behaviours, and parent's parenting skills, whilst emerging evidence also suggests improvements in children's mental health (227). Further work on IPV prevention involves **working with perpetrators of IPV**, often within criminal justice settings. The most common approaches evaluated are group-based CBT and/or psychoeducation, but other approaches have included holistic models that address a perpetrator's unique risk factors, motivational interviewing, mindfulness, and acceptance and commitment therapy (228). The effectiveness of these types of programmes in preventing recidivism remains

inconclusive (229), although certain types of delivery appear to be more effective than others (for instance those where high-risk perpetrators receive the highest intensity of intervention (228)). Given that those affected by IPV, whether as a victim or perpetrator, may have experienced ACEs themselves, additional support could be offered to parents and children in the form of interventions that address the effects of toxic stress and improve biological functioning (Box 7.7).

Table 7.2: Interventions that can prevent and mitigate the impacts of the ACE children’s exposure to IPV

Strategy	Target group	Strength of evidence
	Empowerment programmes	General public <input type="checkbox"/>
	Change social/cultural gender norms (e.g. media awareness; work with men/boys)	General public <input type="checkbox"/> 
	Income and economic strengthening	General public <input type="checkbox"/>
	Parent education (with IPV component)	Parents <input type="checkbox"/> 
	Home visitation (with IPV component)	Parents <input type="checkbox"/> 
	School-based dating violence programmes	Children <input checked="" type="checkbox"/> 
	Counselling and therapeutic approaches	Parents <input type="checkbox"/>  
		Children <input type="checkbox"/> 
	Work with IPV perpetrators	Offenders <input type="checkbox"/> 
	Approaches to support survivors to increase safety and lessen harms	Parents and children <input type="checkbox"/>  

Effective* in: preventing ACEs  preventing risk / increasing protective factors  mitigating impact of ACEs  Evidence mixed/unclear
 Promising** in: preventing ACEs  preventing risk / increasing protective factors  mitigating impact of ACEs

*supported by 2+ well-designed studies/systematic review ** supported by 1 well-designed study

7.3 Preventing and responding to parental alcohol problems

Harmful alcohol use can impair caregiving capacity and is often linked to other difficulties such as mental illness and violence. Reducing harmful alcohol use is a global public health priority targeted in the Sustainable Development Goals (see Section 9). The WHO has set out a range of overarching actions to achieve this goal and identified a set of cost-effective 'best buys', effective interventions and other recommended interventions that can reduce harmful alcohol use (230) (Box 7.14). While this evidence does not specifically consider impacts on parental drinking, reducing harmful alcohol use at a population level will in turn lead to fewer children exposed to parental alcohol use. Measures to reduce population alcohol consumption also reduce risks of other ACEs such as child maltreatment and intimate partner violence (231,232) (see Sections 7.1 and 7.2). The following sections highlight interventions that focus on alcohol-using pregnant women or parents, and their infants or children (see Table 7.3 for a summary).

In the WHO's European ACE surveys, 16% of students reported living with someone who abused alcohol while they were growing up.

Box 7.14: WHO actions on reducing the harmful use of alcohol (230)

- | | |
|--------------------|--|
| Overarching | <ul style="list-style-type: none"> • Implement the WHO global strategy to reduce harmful use of alcohol through multi-sectoral actions in the recommended target areas. • Strengthen leadership and increase commitment/capacity to address harmful use. • Increase awareness and strengthen the knowledge base on the magnitude and nature of problems caused by harmful use of alcohol by: awareness programmes, operational research, improved monitoring and surveillance systems. |
| Best buys | <ul style="list-style-type: none"> • Increase excise taxes on alcoholic beverages. • Enact/enforce bans or comprehensive restrictions on exposure to alcohol advertising. • Enact/enforce restrictions on physical availability of retailed alcohol. |
| Effective | <ul style="list-style-type: none"> • Enact/enforce drink-driving laws and blood alcohol concentration limits via sobriety checkpoints. • Provide brief psychosocial interventions for people with hazardous/harmful alcohol use. |
| Recommended | <ul style="list-style-type: none"> • Carry out regular reviews of prices in relation to level of inflation and income. • Establish minimum prices for alcohol where applicable. • Enact and enforce an appropriate minimum age for purchase or consumption of alcoholic beverages and reduce density of retail outlets. • Restrict or ban promotions of alcoholic beverages in connection with sponsorships and activities targeting young people. • Provide prevention, treatment and care for alcohol use disorders and comorbid conditions in health and social services. • Provide consumer information about, and label, alcoholic beverages to indicate the harm related to alcohol. |



Addressing societal norms and values

Increasing the price of alcohol and restricting its availability are two of the most effective strategies for reducing harmful alcohol use in the general population (233,234). These types of restrictions can reduce both parental alcohol consumption and violence towards children. For instance, in the USA, it has been estimated that one less alcohol outlet per 1,000 people would reduce the probability of severe violence towards children by 4% (235). In some countries (e.g. Scotland, Wales), legislation sets a minimum price at which a unit of alcohol can be sold, preventing the sale of cheap, strong alcoholic drinks associated with harmful drinking.

Maternal use of alcohol during pregnancy can affect a developing foetus, placing children at risk of Foetal Alcohol Spectrum Disorder (FASD, Box 7.15). Public awareness campaigns have been used to address drinking in pregnancy, including the use of warning labels and educational pamphlets. Some countries (e.g. France) have made it a legal requirement for all alcohol products to include warnings about the health impacts of drinking in pregnancy. In France, this led to a positive shift in social norms around drinking in pregnancy (236), but there is limited evidence of effectiveness in changing the behaviour of pregnant women (237).

Box 7.15: Foetal Alcohol Spectrum Disorder (FASD)

FASD is an umbrella term for a group of conditions that can affect children if their mother drinks alcohol in pregnancy (238). Problems can include physical defects, brain and central nervous system problems such as intellectual disability, and social and behavioural issues such as poor social skills and attention problems (239).



Strengthening families

Parents that use alcohol can be offered support via **parenting programmes** (see Section 7.1), which aim to improve parent behaviour and maternal/child well-being. For parents of children with FASD, **parenting programmes** help them to understand and manage FASD-related behaviours and deficits and can improve parenting outcomes and child behaviour (240). **Home visitation programmes** (see Section 7.1) have also been offered to alcohol-using pre and postnatal women, including alcohol treatment, counselling, social support, pregnancy care, education and parenting skills. However, more evidence is needed to determine their effectiveness in affecting alcohol use or maternal/infant health (241,242).



Providing education and life skills

Pregnant women and women of childbearing age can be targeted with **educational interventions** that warn about the risks of alcohol use during pregnancy (see also *addressing societal norms and values*) (243). These can improve knowledge about the risks of drinking in pregnancy, but there is limited evidence of a reduction in alcohol use (244–246). Children of parents with an alcohol problem can be supported through **school-based interventions**, which can increase students' coping, self-esteem, social skills and addiction-related knowledge (including awareness of the risks of travelling in a car with a parent under the influence of alcohol) (247). Programmes are often group-based and include peer support, practical exercises and discussions for children (247).



Providing support and response services

Pregnant women, parents and affected children can all be supported either to reduce alcohol use or to alleviate the effects of prenatal alcohol use. For pregnant women, this includes **screening and brief intervention**, which is typically conducted in health care settings and involves health professionals asking pregnant women about their use of alcohol. Those that report alcohol consumption are offered a short, structured therapy session that includes advice on ceasing or reducing alcohol use (241). A second approach is **counselling and therapeutic support**, such as cognitive behavioural therapy, motivational interviewing or psychotherapy (248). Both of these approaches can be effective in reducing prenatal alcohol use, but their impacts on foetal, infant and other maternal outcomes is unclear (241,248).





For parents with harmful alcohol use, **counselling and therapeutic approaches** can address alcohol use and other issues, such as relationship problems, mental illness and poor parenting skills (224). They can reduce parental alcohol use and improve child/family outcomes (224,249). **Integrated treatment programmes** have also been used, which address parents' alcohol use, physical, social and mental health needs, as well as children's needs through parenting programmes and child-centred services (250). These programmes can reduce parental substance use, including alcohol, and can improve parent and child outcomes (250–252). Given the links

between childhood adversity and later adoption of harmful behaviours (see Section 4), parents with harmful alcohol use may also benefit from interventions that can counter the toxic stress response (Box 7.7). Children with FASD can also be offered interventions to alleviate the effects of prenatal alcohol use. There is emerging evidence that **pharmacological interventions** can address associated symptoms and deficits (253) and that **counselling and therapeutic approaches** can improve areas of child functioning, such as social skills (240).

Implementing multi-component interventions

A further approach to mitigating the impacts of parental alcohol use involves both parents and children in wider family interventions. For instance, **multi-component family-focused interventions** include a parent, child and/or family component and aim to increase supportive and nurturing parenting in alcohol abusing parents, as well as increase problem-solving and coping skills in children (247). One effective programme is the Strengthening Families Program (254) (Box 7.11).

Table 7.3: Interventions that can mitigate the impacts of the ACE parental alcohol abuse on children

Strategy	Target group	Strength of evidence	
	Parenting programmes	◆ ●	
	Home visitation	✱	
	Educational interventions	◆	
	School-based interventions	●	
	Screening and brief intervention	□	
	Counselling and therapeutic approaches	Pregnant women	□
		Parents	■ ●
		Children with FASD	○
	Pharmacological treatment	Children with FASD	○
Integrated treatment programmes	Parents and children	■ ◆ ●	
	Multi-component programmes - family level	◆ ●	

Effective* in: ■ preventing ACEs ◆ preventing risk / increasing protective factors ● mitigating impact of ACEs ✱ Evidence mixed/unclear
 Promising** in: □ preventing ACEs ◇ preventing risk / increasing protective factors ○ mitigating impact of ACEs

*supported by 2+ well-designed studies/systematic review ** supported by 1 well-designed study

7.4 Preventing and responding to parental drug misuse

Parental drug misuse is associated with parenting deficits, poor family relationships and detrimental child physical, psychological and cognitive development (255). Preventing and responding to illegal drug production and use is a global priority targeted in the Sustainable Development Goals (see Section 9). Both illegal drugs and misuse of legal drugs can have significant health and social impacts. The United Nations Office on Drugs and Crime (UNODC) supports Member States in addressing drug use and drug use disorders in the same way as any other health condition, that is by implementing drug prevention strategies and providing treatment, health care, and rehabilitation services (256). International standards, which include recommended evidence-based and cost-effective interventions and policies for drug use prevention, have been developed by the UNODC and WHO and are provided in Box 7.16 (255). Although only a few of these strategies focus specifically on parents, a reduction in the misuse of drugs at a population level will translate into reductions in parental use of drugs. The following sections highlight interventions that focus largely on drug-using pregnant women or parents, and their children (see Table 7.4 for a summary).

In the WHO's European ACE surveys, 3% of students had lived with someone who abused drugs when they were growing up.

Box 7.16: UNODC and WHO international standards on drug prevention, by setting (255)

Family	<ul style="list-style-type: none"> • Home visitation to provide support and improve parenting skills. • Interventions for pregnant women with substance abuse disorders. • Parenting skills.
Community	<ul style="list-style-type: none"> • Community-based multi-component initiatives to address substance use. • Media campaigns to general populations on risks associated with drug use. • Mentoring to develop relationships between children and non-related adults.
School	<ul style="list-style-type: none"> • Early childhood education for children in disadvantaged communities. • Personal and social skills education. • Classroom environment improvement programmes. • Policies to keep children in school and improve attendance. • Policies on substance use which use non-punitive mechanisms to address incidents of use transforming it into an educational opportunity. • Addressing individual child vulnerabilities to reduce risk of substance use in later life.
Health	<ul style="list-style-type: none"> • Brief intervention, involving one-to-one counselling sessions conducted in health care settings or part of school-based and workplace programmes with individuals at risk because of their substance use.
Work	<ul style="list-style-type: none"> • Interventions including prevention, policies, counselling and referral to treatment.



Addressing societal norms and values

The UN conventions on drug control provide an international framework for the control of narcotic drugs and psychotropic substances outside of medical use (257). Across countries, although laws differ, there is legislation prohibiting the use of drugs and/or the possession of drugs for personal use. Whilst evidence on the effectiveness of drug laws is lacking, legislation sends a strong message about the acceptability of drug use behaviours across society.



Strengthening families

For parents with problematic drug use, **home visitation programmes** (see Section 7.1) can provide parent support, which can include drug treatment, counselling, social support, pregnancy care, education and parenting skills. However, there is currently insufficient evidence for these programmes to determine their effectiveness in reducing maternal drug use or other maternal or infant health outcomes (241,242).



Providing education and life skills

For children of drug-involved families, **school-based interventions** aim to increase knowledge on substance use, self-esteem and coping strategies. They are typically group-based, including peer interventions and can be effective in increasing children's addiction-related knowledge, coping, self-esteem and social skills (247).



Providing support and response services

Pregnant women, parents and infants affected by prenatal drug use can all be supported either to reduce drug use or to alleviate the effects of prenatal drug use. **Screening and brief intervention** (see Section 7.3) can be provided to all pregnant women at antenatal health care visits to identify those using drugs, who can be provided with advice and support such as a brief intervention or referral to detoxification services. Although there is some evidence suggesting such programmes can reduce substance use in pregnant women, more high quality research would be useful in determining effectiveness (241). **Counselling and therapeutic programmes** have also been targeted at pregnant drug users. These include contingency management (which reinforces positive behaviours) and motivational interviewing (a cognitive behavioural intervention that helps pregnant women explore and resolve ambivalence to substance use behavioural change). Although some reviews suggest that these programmes offer no additional benefits for drug abstinence levels compared to usual care, others suggest that contingency management may be effective for treatment retention and drug abstinence among pregnant women (258–260). For pregnant women and parents, **integrated treatment programmes** address drug (or alcohol) use, parents' physical, social and mental health needs, and children's needs through parenting programmes and child-centred services. For pregnant women, integrated treatment can have a positive impact on child development and functioning as well as parenting skills, although evidence for reduced substance use is unclear (261). For parents, integrated treatment can be effective in reducing maternal substance use and improving parenting and child outcomes, but has not been shown to be significantly more effective than non-integrated programmes (250–252). Given the links between childhood adversity and later adoption of harmful behaviours (see Section 4), parents with problematic drug use may also benefit from interventions that can counter the toxic stress response (Box 7.7).





For infants affected by prenatal drug use, **supportive interventions** aim to increase infant comfort and minimise the physiological effects of withdrawal. These include swaddling, gentle awakening, quiet environments, increased opportunities for non-nutritive suckling, optimal sleep positioning and rooming-in (where parents provide care for their infant in a home-like environment in hospital). Additionally, **pharmacological interventions** aim to respond to the symptoms of neonatal abstinence syndrome which can occur as a result of in-utero opioid exposure. However there is limited high quality evidence available to determine effectiveness of these two intervention types (262,263).



Implementing multi-component interventions

For families, some **multi-component family-focused interventions** such as the Strengthening Families Program (see Box 7.11) can be effective (and cost-effective) in improving positive parenting, and reducing mental health problems, delinquency and substance abuse amongst children (254).

Table 7.4: Interventions that can mitigate the impacts of the ACE parental drug abuse on children

Strategy	Target group	Strength of evidence
 Home visitation	Parents	✱
 School-based interventions	Children	●
 Screening and brief intervention Counselling and therapeutic approaches Supportive interventions Pharmacological treatment Integrated treatment programmes	Pregnant women	□
	Pregnant women	□
	Children	✱
	Children with FASD	✱
	Pregnant women, parents, children	■ ◆ ●
 Multi-component programmes - family level	Parents and children	◆ ●

Effective* in: ■ preventing ACEs ◆ preventing risk / increasing protective factors ● mitigating impact of ACEs ✱ Evidence mixed/unclear
 Promising** in: □ preventing ACEs ◇ preventing risk / increasing protective factors ○ mitigating impact of ACEs

*supported by 2+ well-designed studies/systematic review ** supported by 1 well-designed study

7.5 Responding to children’s exposure to parental incarceration

Incarceration can impact on family members, including through disrupted relationships with the incarcerated household member, experiencing shame or stigma, and increased risk of poverty, homelessness and poor mental well-being (264,265). Whilst there is a lack of evidence on the prevention of parental incarceration specifically, there is a wide range of evidence on the prevention of crime more generally, and particularly on early intervention and the prevention of youth crime (266). Juvenile delinquency is thought to be a risk factor for adult criminal behaviour (267). Effective interventions include (268):

In the WHO’s European ACE surveys, 5% of students had lived with someone who had been incarcerated while they were growing up.

- Community interventions for children and adolescents that focus on the prevention of anti-social behaviour and children’s development, through changing individual, family or school risk factors.
- Community interventions focusing on neighbourhood-level problems.
- Situational prevention programmes that reduce opportunities for offending in the environment and the probability of crime occurrence (e.g. alleviating vulnerabilities in the built environment).
- Policing approaches, such as problem-oriented policing.

The following sections describe interventions that mitigate the harmful effects of parental incarceration on children (see Table 7.5 for a summary).

Strengthening families

One approach to mitigating the impact of parental incarceration is to provide **parenting education programmes** (see Section 7.1) adapted for use in prison settings (e.g. Incredible Years) (269). These programmes can increase parenting skills and parent-child relationships, although their effects have been found to decay over time (270). In contrast to traditional parenting education, which often includes joint parent-child sessions, the nature of the intervention setting (i.e. prison) often dictates content, with group discussion, video vignettes and role-play used as substitutes. Specifically designed prison parenting programmes include components on parenting from a distance and preparing for the transition home (271). Some programmes have child visitation components or include the child in the parenting programme, but there is little evidence to suggest this increases programme effectiveness (270). The characteristics of institutional settings, such as the permitted length, frequency and degree of contact during visits, can influence the extent to which parents can use their parenting skills or enhance their relationships with their children.



Providing support and response services



Parents and their children can be supported through **counselling and therapeutic approaches**, such as family therapy with the incarcerated parent and child, or support groups for children affected by parental incarceration. However, evidence on the effectiveness of prison-based family therapy for incarcerated parents and children is unclear (272). Various community-based programmes to support children of incarcerated parents are available and can include mentoring programmes and peer support groups, yet there is a lack of research to determine their effectiveness (273).

A further approach to mitigating the impact of parental incarceration involves the provision of specific prison facilities for parents and children to continue parent-child relationships. For instance, **prison nursery programmes** typically provide separate living arrangements to allow the mother to remain the child's primary caregiver (274). Many countries have a legal provision for babies, but not older children, to live in prison with their mothers on the premise that separating a mother and infant can cause attachment issues for babies; however, older children's educational and social development can be impeded by residing in prison. Prison nursery programmes can include a parenting component focusing on parenting skills, child development and parent-child relationships. Although their effectiveness in improving parenting skills/behaviours, parent-child relationships and maternal well-being is unclear (275), prison nurseries can support positive adaptation in young children in the areas of attachment and development/behavioural outcomes (275–277). Further, post-release, mothers are more likely to retain custody of children and have less recidivism (275,278).

A similar approach is to provide **community residential facilities**, offering structured, secure environments where mothers can live in the community with their children. Programmes often include a parenting component as well as targeted support for those with co-occurring mental health and substance misuse issues. Programmes vary in terms of content, facilities and security level. Some view parenting as a form of employment and allow women eligible for work release to return to the family home during the day to care for children and return to the prison at night. Others provide accommodation which does not resemble a prison from the outside and staff do not wear uniforms, where children can live with their mothers and attend school. Although evidence is currently unclear, early findings suggest these programmes may be effective in reducing both parental reoffending and future child offending (279). Other non-custodial alternatives are available in some countries, such as the suspension of sentences for mothers until their child is of a certain age, or a ban on the imprisonment of pregnant women who meet certain sentence conditions (280).

Parent-child visitation programmes also allow for the development of parent-child relationships by providing visiting areas for prisoners and children separate from the main prison. When supplemented with peer support for the child in the community and support for mothers in prison, these programmes can improve parent-child relationships, parenting-related stress, and child coping and academic achievement (281). Other initiatives include subsidising transport and lodging for visiting family members. Where visitation in prison settings is not possible, other programmes facilitate contact between prisoners and their children via videoconferencing technology, or through literacy programmes where parents record reading books on audiotapes for their children, however evidence of the effectiveness of such programmes is unclear (281).

Table 7.5: Interventions that can mitigate the impacts of the ACE parental incarceration on children

Strategy	Target group	Strength of evidence
 Parenting education programmes	Parents	◆
	Counselling and therapeutic approaches	✱
	Prison nursery programmes	●
	Community residential facilities	○
	Parent-child visitation programmes	◆ ○

Effective* in: ■ preventing ACEs ◆ preventing risk / increasing protective factors ● mitigating impact of ACEs ✱ Evidence mixed/unclear
Promising** in: preventing ACEs ◇ preventing risk / increasing protective factors mitigating impact of ACEs

*supported by 2+ well-designed studies/systematic review ** supported by 1 well-designed study

7.6 Responding to children's exposure to parental mental illness

Parental mental illness can affect parenting capacity, parent-child relationships, child behaviour and psychosocial outcomes across the life course (282–284). Perinatal and maternal mental illness is associated with poor birth outcomes and can negatively affect parent-infant attachment, child mental health outcomes, and development (285,286). The WHO's Mental Health Action Plan (2013-2030) identifies a range of broad strategies that can be used to prevent mental disorders or improve well-being in the general population (Box 7.17). Whilst these strategies do not target parents specifically, improving mental health at a population level will impact on parents. The period during and after pregnancy in particular is a key risk period for parental mental illness (Box 7.18). The following sections highlight interventions that focus specifically on addressing or mitigating the effects of mental illness in parents (see Table 7.6 for a summary). With parental mental illness often co-occurring with other ACEs (e.g. alcohol use, drug use, parental separation), interventions to address parental mental health may also help to build resilience against other ACEs.

In the WHO's European ACE surveys, 11% of students had lived with someone experiencing a mental illness when they were growing up.

Box 7.17: Broad strategies to prevent mental illness and promote well-being (287)

- Antidiscrimination laws and campaigns that address stigmatisation/human rights violations.
- Promotion of rights, opportunities and care of individuals with mental disorders.
- Early childhood programmes, life skills training and parenting programmes.
- Early identification and treatment of emotional and behavioural problems.
- Provision of healthy living and working conditions.
- Protection programmes that address child abuse and other forms of violence.
- Social protection for the poor.



Addressing societal norms and values

Although not evaluated in terms of mental health, legislation and policy are important in protecting against parental mental illness through improving some of the key environmental, financial and work-related factors related to parental mental illness (e.g. housing, child benefit, parental leave (288)).

Box 7.18: Perinatal mental disorders

Across studies from multiple countries, approximately 10% of pregnant women and 13% of those who have given birth have a mental disorder, with depression or anxiety the most common types (289,290). Additionally, around 10% and 9% of men experience prenatal and postpartum depression respectively. The majority of research has focused on mothers, where postpartum depression has been found to have long-term effects on the mother, her relationship and her children (291). Perinatal mental disorders are associated with increased risks of negative child outcomes such as premature delivery, emotional and behavioural problems, insecure mother-infant attachment, low cognitive development and poor infant growth (292).



Strengthening families

Parents with mental illness can be supported through **parenting programmes** (see Section 7.1) that include mental health elements (e.g. increasing knowledge on how mental health affects parenting capacity; coping strategies). Established parenting programmes (e.g. Triple P) have been adapted to incorporate mental health components. For Triple P, effects included reduced parental anxiety, stress, dysfunctional parenting and child behaviour problems (293). In general, however, while programmes for parents with mental illness improve parenting skills, other outcomes remain unclear (294–297). Emerging evidence also suggests that **home visitation programmes** (see Section 7.1) that include a mental health component can reduce maternal depression (298,299). However, it is unclear whether they can affect other mental disorders or whether standard programmes (i.e. not adapted) can improve mental health (300–304). The characteristics of home visitors such as warmth, listening and empathy may facilitate the building of supportive relationships with parents and lead to a reduction in stress, which can be a factor in mental disorders such as depression (305).



Providing education and life skills

For children of parents with mental health difficulties, emerging evidence suggests that **educational interventions** can improve children's mental health literacy and mental disorder symptoms (306,307), although effects on coping skills and self-esteem are unclear (307,308). These interventions increase children's knowledge of mental illness and coping skills, and can incorporate peer support techniques.



Providing support and response services

An effective approach for pregnant women or parents with mental illness is the provision of psychological and medical support. This can involve **counselling and therapeutic approaches**, such as peer support, counselling, cognitive behavioural therapy (CBT), interpersonal therapy and psychotherapy, which can reduce depression and improve mental health in the perinatal period (177,309–313). **Pharmacological treatment** for symptoms of mental disorders can increase rates of response and remission of postnatal depression (314) and can be combined with other psychological therapies. It has also been used as a preventative intervention for pregnant women with previous postnatal depression, although its effectiveness is currently unclear (311). Given links between childhood adversity and mental health problems in later life (See Section 4), interventions that can counter the toxic stress response (Box 7.7) may also be useful to parents suffering from mental illness. For children affected by parental mental illness, **counselling and therapeutic approaches** such as CBT, psychotherapy and supportive therapies aim to increase children's psychosocial well-being and/or resiliency to parental mental illness. Emerging evidence suggests that these approaches are effective in improving problem-based coping skills in children of parents with a mental disorder, although their impact on other child outcomes is mixed (315).



Implementing multi-component interventions

A further effective strategy involves working with the wider family, through **multi-component family-focused interventions** (see Section 7.3) that aim to address parental mental illness, as well as improve parenting skills, parent-child relationships and child behavioural and emotional problems. Interventions include CBT, psychotherapy and psychoeducational therapy, and may include a parent, child and/or family component. These interventions can be effective in improving parental symptoms, functioning and parenting competence (316,317). In addition, programmes have been found to improve child emotional and behavioural problems, cognitive functioning and more secure attachment (e.g. Toddler-Parent Psychotherapy; Preventive Intervention Project; Family Talk, Box 7.19) (318–321).

Box 7.19: Family Talk Intervention





Location: USA and other countries.

Type: Psychoeducation for families experiencing parental mental illness.

Content: Over a number of sessions, parents are helped to build their understanding of mental illness and improve confidence and skills in talking about mental illness with their family. The intervention involves parent, child and whole family sessions.

Evidence: Associated with reduced child emotional problems and anxiety as well as improved prosocial behaviour (321).

Table 7.6: Interventions that can mitigate the impacts of the ACE parental mental illness

Strategy	Target group	Strength of evidence
	Parenting programmes	■ ◆ ●
	Home visitation	□
	Educational interventions	●
	Counselling and therapeutic approaches	■ ●
	Pharmacological treatment	■
	Multi-component programmes - family level	■ ◆ ●

Effective* in: ■ preventing ACEs ◆ preventing risk / increasing protective factors ● mitigating impact of ACEs
 Promising** in: □ preventing ACEs ◆ preventing risk / increasing protective factors ● mitigating impact of ACEs

*supported by 2+ well-designed studies/systematic review ** supported by 1 well-designed study

7.7 Responding to children's exposure to parental separation

In the WHO's European ACE surveys, 17% of students had parents who had separated or divorced when they were growing up.

There are many reasons why parents may separate, including parental breakdown of relationships, forced separation due to conflict, or extended periods of separation for economic reasons. Parental separation can involve distress, conflict and major changes to family functioning (e.g. relationships, finances, living arrangements and social networks) (322), which can place strain on families and affect the health and well-being of parents and children. The majority of literature on parental separation focuses on parental relationship breakdown. Subsequently, this section also focuses on parental separation in terms of parental relationship breakdown.

Parental separation may have negative or positive consequences for a child, depending in part on whether, and how, separation impacts on conflict between parents (including IPV; Section 7.2), financial issues, living arrangements, parent-child relationships, parental mental health, housing or other living conditions, and access to sources of resilience, support and development for the child (323). However, in general, studies suggest that parental separation can lead to a range of negative impacts on children's psychological and physical health, as well as academic performance (324). There is a lack of evidence on the prevention of parental separation or divorce. However, equipping people with the skills to generate healthy, positive relationships and family environments, and to manage sources of stress is paramount, and should help to reduce the need for parental separation. Building skills for healthy relationships, including conflict resolution and problem-solving, can start early in life and is often included in school-based life skills programs. Relationship education can also be provided to couples in adulthood (e.g. premarital programmes) and can increase relationship quality and communication in the short term (325). For struggling relationships, counselling and therapeutic services such as couples therapy can be effective in improving relationship distress and poor mental health (325). If the development of relationship skills or use of counselling is unsuccessful, then a number of interventions can help to mitigate the effects of parental separation or divorce on children (See Table 7.7 for a summary).



Addressing societal norms and values

In many countries, legislation exists around children's welfare and parental responsibilities in the event of divorce. Whilst the impacts of legislation have not been evaluated, such legal requirements have the potential to help parents come to an agreement over subsequent living or caring arrangements and help to protect children's emotional and physical health, as well as financial resources.



Strengthening families

For divorced or separated parents, parenting programmes (see Section 7.1) aim to improve coping skills, parent-child relationships and parent and child adjustment, as well as reduce parental conflict. Universal or targeted (e.g. for high-conflict families) programmes can improve children's post-separation adjustment and parenting practices (326,327). Additionally, court-affiliated divorcing parents' education programmes can improve co-parenting conflict, parent-child relationships, child well-being, parent well-being, and re-litigation (326). As well as the Parenting When Separated programme (322) (Box 7.20), other programmes showing signs of success include the New Beginnings Programme (328,329) and Dads for Life (330), both from the USA. Long-term programmes appear to be more effective than shorter-term programmes (322).

Box 7.20: Parents Plus: Parenting When Separated

Location: Ireland.

Type: Group psychoeducational programme for parents preparing for/going through separation or divorce.

Content: Includes discussion on the effects of separation on children/families, parenting skills, coping skills, and cooperative communication.

Evidence: Positive impacts on goal attainment, parenting satisfaction, child and parent adjustment and inter-parental conflict.



Website: www.parentsplus.ie



Providing support and response services

Children of separated and divorced parents can be supported emotionally through **psychoeducational interventions** that are often school-based and aim to help children adjust to changes and develop coping skills. Group-based interventions have been found to improve children’s mental health, adaptation to parental separation, behaviours and competence, although the quality of the evidence is often weak (331).

Table 7.7: Interventions that can mitigate the impacts of the ACE parental separation (212)

Strategy	Target group	Strength of evidence
 Parenting programmes	Parents	●
 Psychoeducational interventions for children of separated or divorced parents	Children	○

Effective* in: preventing ACEs preventing risk / increasing protective factors mitigating impact of ACEs

Promising** in: preventing ACEs preventing risk / increasing protective factors mitigating impact of ACEs

*supported by 2+ well-designed studies/systematic review ** supported by 1 well-designed study





7.8 Cross-cutting themes for prevention

Table 7.8 summarises the different strategies that have shown promise or effectiveness in preventing and/or mitigating the effects of ACEs across the different ACE types (Sections 7.1 to 7.7). Many of the strategies can be seen to overlap, highlighting the cross-cutting themes common to the prevention of ACEs. One of the most common strategies involves working with parents to develop safe and stable relationships with their children, strengthen parenting skills, and (in some instances) help to address specific ACEs (e.g. parental mental illness or substance misuse). These programmes help to establish positive environments for children from the very beginnings of life, with the potential to impact on secure relationships and early childhood development. Work to strengthen families may also offer valuable opportunities to support parents affected by ACEs, through addressing and treating any toxic stress effects they may have themselves (Box 7.7). School-based prevention for children and adolescents is a further common theme, where the development of life skills can help children not only build resilience to protect against the effects of different ACEs, but also the skills to develop healthy intimate relationships for themselves and their offspring in the future. Across all ACEs, the provision of effective response and support services to those affected are vital, helping individuals and wider families cope with the emotional and physical effects of traumatic experiences. The better and earlier the support given to children and adults affected by ACEs, the better the chances of mitigating effects on health and reducing the likelihood of intergenerational transmission. Systemic practice across sectors (e.g. health, social, education, criminal justice) will help to widen the support available for those affected by ACEs, whilst making multi-sector collaboration on ACEs easier.

7.9 Reducing the impact of ACEs on brain and biological development

Increased understanding of how ACEs can alter biological development is providing new measures of not only the harms ACEs cause but also which interventions are effective at preventing or counteracting their impacts on children's biological systems (see Section 5). A number of interventions have been found to improve cortisol levels in the brain among children affected by ACEs, as well as the impact of adversity on brain development and epigenetic regulation. For instance, addressing more extreme adversity, the Bucharest Early Intervention Project aimed to place young, abandoned children (with an average age of 21 months) living in institutional care into high-quality foster care. Compared to those not fostered, these children were found to have improved neurodevelopmental and epigenetic outcomes (e.g. displayed longer telomeres, which is associated with a longer lifespan) (17). Similarly, Strong African American Families (SAAF) is a seven-week programme for youths (10-14 year olds) and their caregivers, supporting them during the transition from adolescence to teenage years. Youths affected by adversity who enrolled in the programme have been found to have a range of improved outcomes compared to controls, including those relating to epigenetics and the immune system. Studies find that the earlier children are engaged in intervention, the better the outcomes, with the first few years of life being a critical period for intervention (17). Evidence suggests that a wide range of interventions can counter the toxic stress response. For instance, supportive relationships, quality sleep, balanced nutrition, physical activity, mindfulness practices, experiencing nature, and trauma-specific mental health services have all been shown to improve stress hormone balance and neurologic, endocrine, immune, metabolic, and genetic functioning (20–22,162).

Table 7.8: Effective/promising interventions to prevent and/or mitigate the impacts of ACEs, or prevent risk factors for ACEs

Strategy		Child maltreatment	Exposure to household/parental:					
			IPV	Alcohol use	Drug use	Mental illness	Incarceration	Separation
 Addressing societal norms and values	Implementation/enforcement of laws (e.g. banning violent punishment of children by caregivers)	✓	✓	✓	✓		✓	
	Empowerment programmes (e.g. microfinance, gender equality and relationship skills)		✓					
	Public awareness-raising and education programmes	✓						
	Change social/cultural gender norms (e.g. media awareness; work with men/boys)		✓					
	Income and economic strengthening	✓	✓					
 Strengthening families	Parenting programmes	✓	✓		✓	✓	✓	
	Pre-school enrichment (with family support)	✓						
	School-based prevention or education programmes	✓	✓	✓	✓			
	Other educational interventions	✓						
	Training of health sector and other professionals	✓						
 Providing response and support services	Counselling and therapeutic approaches	✓	✓		✓			
	Approaches to support survivors to increase safety and lessen harms	✓	✓					
	Screening and brief intervention			✓	✓			
	Pharmacological treatment			✓	✓			
	Prison nursery programmes					✓		
 Implementing multi-component programmes	Community residential facilities for incarcerated mothers and their children					✓		
	Incarcerated parent-child visitation programmes					✓		
	Psychoeducational interventions for children of separated or divorced parents						✓	
	Community level	✓						
	Family level	✓		✓	✓			

7.10 Building resilience to mitigate the impact of ACEs across the life course

- Many individuals do not experience adverse outcomes from ACEs, displaying resilience to their harmful effects.
- Developing resilience in children is crucial for mitigating the impact of ACEs and equipping children with the skills to cope with future challenges throughout the life course.
- A range of individual, family, community and system factors can help develop resilience.

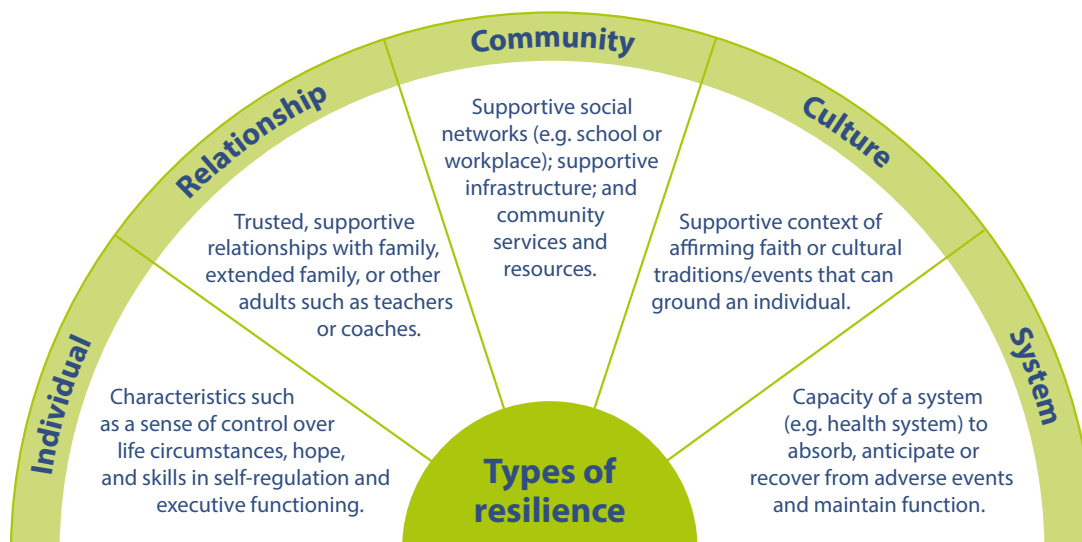
Many individuals with ACEs avoid adverse outcomes; a characteristic referred to as resilience (332). Resilience is “the dynamic process of adapting and responding well individually or collectively in the face of challenging circumstances, economic crisis, psychological stress, trauma, tragedy, threats, and other significant sources of stress. It can be described as an ability to withstand, to cope or to recover from the effects of such circumstances and the process of identifying assets and enabling factors” (333). Genetic differences mean that children are born with variations in traits and abilities. Individual resilience is the product of an interaction between internal (child predispositions) and external (social) factors. If we think of resilience as a type of umbrella, and adverse experiences as drops of rain, we can see that those individuals with stronger umbrellas (greater resilience) will be less impacted by any raindrops than those with weaker ones (Figure 7.1). An individual’s umbrella may become stronger or weaker over time as sources of resilience are gained or lost across the life course. Furthermore, an individual’s umbrella may be able to offer less protection from heavier rainfall (i.e. multiple forms of adversity).

Types of resilience include those relating to the individual, relationships, communities, cultures and systems (Figure 7.2). These different types of resilience can interact. For instance, building individual resilience can help people to build stronger social networks and communities (community resilience), whilst building resilient communities can support the development of individual resilience (334). Developing resilience in children is crucial for mitigating the impact of experiencing ACEs and equipping children to cope with future challenges. Resilience can also be developed in adults with a history of ACEs. Strategies to build resilience can be implemented in multiple sectors (e.g. education, health, criminal justice) and at multiple levels (e.g. individual, community, system). This section presents evidence for resilience-building interventions that can address the impacts of experiencing ACEs in general, regardless of the specific ACE(s) experienced. Wider strategies, such as work to reduce socio-economic inequalities, develop social capital and increase economic stability, are not covered in this section but are likely to have an important role in building types of resilience.

Figure 7.1: Resilience can protect against the harmful effects of ACEs



Figure 7.2: Types of resilience (18-19, 335-336)



Strengthening families and trusted relationships

Resilience can be developed through strengthening families (e.g. through **parenting programmes**; see Section 7.1) and developing trusted relationships. For instance, **mentoring interventions**, such as Big Brothers, Big Sisters (Box 7.21), can connect children with a caring adult or peer, at school or in the community, with whom they can build a supportive relationship and who will act as a positive role model for the child (170). These programmes can have an effect on multiple outcomes, including attitudinal, social, psychological, conduct, academic, and health outcomes (337).

Box 7.21: Big Brothers, Big Sisters

Location: USA and other countries

Type: Mentoring programme

Content: Connects children facing adversity with caring adults to develop one-to-one mentoring relationships that support social and emotional development and help children reach their potential.

Evidence: Effective in improving school engagement and achievement and relationships with parents and teachers, as well as protecting against the use of substances and physical fighting (170).



Educational and skill-building interventions

School-based programmes aim to build children’s internal (e.g. problem-solving, self-regulation) and/or external (e.g. peer support, community participation) resilience. Programmes include CBT, mindfulness, social and emotional learning, life skills development, and psychological well-being therapy, among others (338). Universal school-based resilience programmes can be effective in addressing depressive symptoms, internalising and externalising problems, general psychological distress (338) and some risk behaviours e.g. adolescent illicit substance use (339). Similar approaches can be used with adults. Resilience promotion programmes for adults can be based on a range of approaches including CBT, positive psychology, interpersonal therapy and mindfulness and can be conducted, online or face-to-face, and in groups or individually. In the USA, they have been effective in increasing coping skills and problem-solving (340–342).



Providing support and response services

Children and adults affected by adversity can be given support to help them cope with negative impacts. **Trauma-focused cognitive behavioural therapy** aims to reduce symptoms of PTSD amongst children who have experienced adversity, in addition to providing support for caregivers. It can be effective in reducing posttraumatic stress symptoms over time (343) as well as improving parenting practices (344,345). In general, studies suggest it can also affect other outcomes such as depression and behaviour problems, although some studies have shown no significant effect. Children and adults affected by ACEs may also benefit from interventions that address the toxic stress response and improve biological functioning (Box 7.7), helping to build resilience.



Multi-component interventions

Some programmes aim to develop community resilience. **Community-based programmes** achieve this through the activation of local resources and the strengthening of social relationships (346) (e.g. Communities That Care (347–349), Box 7.22). Such programmes may include opportunities for engagement and social interaction and/or the provision of services, facilities and resources (334).

Box 7.22: Communities That Care

Location: USA and other countries.

Type: Strategy development process.

Content: Empowers local communities to identify strong risk and weak protective factors in their community and select proven intervention programmes to address them.

Evidence: Effective in increasing protective factors (e.g. pro-social behaviour) and reducing risk factors including delinquency and substance use (347–349).

8. Development of ACE- or trauma-informed practice

- Trauma-informed practice (TIP) is being used across a variety of services, including health, schools, and criminal justice.
- Although research is currently lacking, there is emerging evidence that TIP can have some positive outcomes for both children and adults.

While there is no standardised definition of trauma-informed practice (TIP), the Substance Abuse and Mental Health Services Administration (SAMHSA) state that a trauma-informed approach “**realises** the widespread impact of trauma and understands potential paths for recovery; **recognises** the signs and symptoms of trauma in clients, families, staff and others involved with the system; **responds** by fully integrating knowledge about trauma into policies, procedures and practices; and seeks to actively resist **re-traumatisation**” (350). These four underlying assumptions are accompanied by six key principles (Box 8.1). The goal of TIP is to support resilience and self-efficacy, and to create a safe environment for service users (351). TIP seeks to remove the power differentials between care providers and service users, and promote service user empowerment. It involves recognition of the effects of trauma and common coping strategies (352), acknowledging the barriers to engagement, rather than labelling service users as non-adherent. For practitioners, TIP underlines the importance of knowing your own history and reactions, self-care and caring for service users without taking on their trauma (353). Given that an individual’s choice of career may be influenced by their personal history, this is particularly important in the public sector where professionals may have a high prevalence of ACEs themselves (e.g. child service providers (354)). TIP is a whole systems approach within which staff have the knowledge and skills to refer to trauma-specific support services, such as trauma-focused CBT¹² if necessary (355).

Efforts to create a shared definition of TIP and consistency in practice across organisations will be hugely beneficial to both service users and practitioners. In Wales, UK, a National Trauma Practice Framework has been developed to support a consistent approach to TIP across the country. The framework presents an agreed definition of TIP and a shared understanding of what TIP means at different levels of practice (e.g. community, organisation-wide, frontline workers, and practitioners delivering specific trauma-therapy)¹³.

To become trauma-informed, organisations must shift how services are organised and delivered. Many TIP models involve routine enquiry or screening (356) (Box 8.11). Thus, the first stage in organisational change can be to assess current levels of trauma awareness (357), for which a growing number of tools are available¹⁴. There is a great interest in TIP, but often approaches are poorly defined and vary in what is delivered, how and with whom. Few approaches have been evaluated to consider their longer-term impacts (358). However, there is tentative support for both universal and targeted approaches, particularly with vulnerable groups such as children in foster care.

When trauma is not recognised or understood by practitioners, there can be unintended harms for both service users and practitioners. Potential service users may not wish to engage with services, or may be triggered by aspects of care and re-traumatised if they feel they are not believed or supported. Practitioners may experience emotional costs of empathising with clients’ trauma (359), threatening their own well-being and limiting their care for service users.

12 Trauma-focused CBT is a form of psychotherapy that addresses the needs of children regarding their traumatic life experiences, and works comprehensively with children and parents/caregivers to teach children new skills in managing their affective, cognitive and behavioural responses (409).

13 The framework is available from <https://traumaframeworkcymru.com/>.

14 Trauma-Informed Services Self Assessment Scale and Planning Protocol (410); ARTIC (411).

Box 8.1: Underlying assumptions and key principles for trauma-informed practice (350)**Assumptions**

- **Realisation:** Understanding how trauma impacts individuals, families and organisations.
- **Recognition:** The identification of signs of trauma.
- **Response:** System-level responses occur by applying principles of TIP.
- **Resisting re-traumatisation:** For service users and staff.

Principles

- **Safety:** Service users feel physically and psychologically safe; safety is considered in the physical setting, and promoted in interpersonal interactions.
- **Trustworthiness and transparency:** The organisation is transparent in its decisions and operations in order to build trust with service users, families, staff and other stakeholders.
- **Peer support:** Collaboration with individuals with lived experience of trauma to promote recovery and healing.
- **Collaboration and mutuality:** Power and decision-making are shared and input from all organisational levels is valued.
- **Empowerment, voice and choice:** Individuals' strengths and experiences are recognised and built upon; service users are supported in shared decision-making and goal setting.
- **Cultural, historic and gender Issues:** Moving beyond stereotypes and biases to be responsive to the racial, ethnic and cultural needs of different individuals.

Maternity and parents exposed to trauma

Some existing home visiting programmes (e.g. the Nurse-Family Partnership, Box 7.6) have incorporated trauma-informed elements (360), and trauma-specific interventions that address pregnancy and parenting issues are being developed and evaluated (361,362). In addition, routine enquiry for ACEs has been trialled as part of health visiting services for mothers with young children. Compared to a comparison group that did not receive routine enquiry, those that did were less likely to report experiencing parental stress, and more likely to have greater caregiver knowledge about sources of community help and support (363).

Children exposed to trauma and the family setting

TIP approaches have been used with children and families (Box 8.2, Box 8.3) with some success, and are beginning to be used to support non-parental caregivers (e.g. foster, adoptive or kinship) of vulnerable children, often with behavioural issues. Such approaches may improve caregivers' knowledge of trauma (364) and reduce caregiver stress by improving caregiver perceptions of their caregiving ability (365).

Box 8.2: Child-Adult Relationship Enhancement

Location: USA.

Type: Skills-based intervention working with children and their caregivers or professionals.

Content: Uses the three P principles (Praise, Paraphrase and Point-out behaviour) to connect children to supportive adults and includes trauma education to help caregivers understand trauma-related behaviours (366).

Box 8.3: Strengthening Family Coping Resources

Location: USA.

Type: Family-focused programme adopting TIP for high-risk families (367).

Content: Aims to reduce symptoms of traumatic stress and enhance coping skills, based on individual needs. Training includes trauma assessment, safety promotion and strengthening family relationships (368).

Evidence: Associated with a reduction in child behaviour problems and parental stress, and improvements in family functioning (368).

Early child care settings

There is little research on the effectiveness of TIP in early formal child care (369). However, trauma-informed pre-school programmes are emerging (Box 8.4) that aim to decrease the negative impact of toxic stress on children's development.

Box 8.4: Head Start Trauma Smart

Location: USA.

Type: Pre-school programme.

Content: TIP training for the child's support network, individual intensive trauma-focused CBT for trauma-exposed children, classroom consultation by mental health specialists providing skills-based training, and peer mentoring for staff to support delivery.

Evidence: Associated with an improvement in teacher-rated student behaviours for those for students who received intensive services (370).

School-based interventions

Recognising/responding to trauma in schools and other educational establishments may help to create educational environments that address academic, behavioural and socio-emotional problems. TIP is increasingly being promoted and adopted in schools (371) (Box 8.5, Box 8.6) and some programmes have been associated with improvements in children's emotion regulation, classroom behaviour and attainment (372). However, better quality evidence would be useful to support implementation (373,374). In areas of the UK, partnership working between the police and schools has been implemented, which enables children exposed to caregiver IPV to receive timely support in their school. Any impact on the child's behaviour or school work can then be understood in the context of trauma, rather than being perceived as problem behaviour (Box 8.7). Trauma-informed practice is also beginning to be developed within further education and higher educational settings (e.g. universities, Box 8.6).

Box 8.5: Healthy Environments and Response to Trauma in Schools

Location: USA.

Type: Whole-school approach aiming to promote academic success for students impacted by trauma (375).

Content: Universal elements such as changes in school policies, and training and consultation for school staff on trauma-sensitive practices, burnout and stress.

Box 8.6: Whole-school approach to ACE awareness and trauma-informed practice

Location: Wales, UK.

Type: ACE awareness and trauma-informed practice training in education settings.

Content: Comprehensive ACE awareness and trauma-informed practice training programme increasing staff understanding of ACEs and their impact, and how to help children build resilience (376). The training has been delivered to primary and secondary schools throughout the country, as well as pre-school settings and parents groups. The approach is also being taken forward with further education colleges and universities with a view to the whole education sector in Wales being ACE aware and trauma-informed. This will ensure continued support for children, young people and adults wherever they enter and leave the education system, and for those working within it.

Box 8.7: Operation Encompass

Location: UK.

Type: Partnership between police and educational services.

Content: Following an incident of police-attended caregiver IPV where a child or young person has been exposed to or involved in the incident, information is shared by the police with the child's school safeguarding lead before the start of the next school day. This information allows the school staff to better understand the child's home experiences and allows immediate support to be given to the child. Any changes in the child's behaviour or school work can then be understood in the context of trauma, rather than being perceived as problem behaviour. Schools involved in Operation Encompass are invited to attend training that includes the impact of caregiver IPV on children and families, and how best children can be supported.

Trauma-informed primary healthcare

Primary care has been a focus for TIP, due to its universal coverage and being a first point of contact for people with histories of trauma and toxic stress, including manifestations such as mental health issues. Typically, interventions have focused on training professionals, introducing methods of identifying trauma, and the provision of resources for clinicians/patients (377). A number of studies have shown some support for the feasibility and acceptability of TIP in primary care (378,379). However, as current evidence is limited (380), further research exploring the impact of these approaches would be useful.

Approaches in criminal justice

TIP has been used in criminal justice settings, focusing on supporting the needs of those involved in the system. Approaches include ACE training for professionals (Box 8.8, Box 8.9). Although evidence is lacking, there is some evidence suggesting that prisons with TIP can experience decreases in violence towards staff and inmates, and improvements in inmates' mental health (381).

Box 8.8: ACE training for police, partners and wider criminal justice

Location: Wales, UK.

Type: ACE awareness training delivered to police and partners including prison and probation staff across the country.

Content: Comprehensive ACE awareness training increasing understanding of ACEs, confidence and competence in using TIP in practice (382).

Box 8.9: Enhanced Case Management

Location: Wales, UK.

Type: ECM, underpinned by trauma-informed training and the Trauma Recovery Model (383).

Content: Training in TIP for staff in youth justice settings dealing with children with complex needs; understanding of a child's history through multi-agency meetings held by a psychologist and other professionals; tailored delivery of interventions.

Evidence: Associated with improvements in: staff understanding of children's histories, provision of services, positive child-staff relationships, and child outcomes such as increased emotional-regulation and greater self-worth (384).

General public

Whilst TIP is usually implemented within services and targeted at service users, TIP approaches can also be implemented across whole communities via public awareness campaigns. For instance in Wales, the “Time to be Kind” campaign aimed to raise awareness of adversity in children’s lives among the general public through a TV advertisement (Box 8.10) (385). Additionally, in the UK, a short animated film on ACEs was made available to the public (as well as professional groups), detailing the way in which ACEs impacted on a young boy growing up and highlighting the need for ACE-aware services. The film was received positively, with almost 90% of people agreeing that the film gave them a better understanding of the long-term effects of ACEs (386).

Box 8.10: Time to be Kind

Location: Wales, UK.

Type: Public awareness campaign.

Content: The campaign included public engagement with social media, and short films were aired on television across Wales in 2019 and 2021 urging people to be kind and showing people that compassion and kindness can make a positive difference to those affected by ACEs.

Evidence: As a result of seeing the 2021 film, 64% of people reported intentions to be kinder to others, 66% intended to try and help members of their community and 71% were more likely to check in on friends, family and neighbours (387).

Website: <https://aceawarewales.com/time-to-be-kind/>

Common approaches

Across settings, staff training in trauma awareness and TIP principles is needed. Training often includes information on the effects of trauma, creating feelings of safety for clients, avoiding the emotional impacts of clients’ trauma, and how to provide self-care (388). There is evidence that training can improve staff knowledge, attitudes and behaviours in the short term, but effects in the longer term are unknown (388). Routine enquiry or screening for ACEs may help to identify individuals with ACEs and inform their future care, with a number of screening tools available (389,390) (Box 8.11).

Current challenges and future directions

Although the adoption of TIP has been gaining momentum in recent years, there remains a number of challenges, including how TIP is defined, what components are needed to achieve it, and how it differs from the principles of good general care (358). With little known about TIP’s effectiveness, a further challenge is to demonstrate that this approach makes a difference and improves lives (391). This needs to involve the documentation of specific system- and individual-level practice changes and their impact on trauma-affected children and their families (391).

Box 8.11: Screening or routine enquiry for ACEs

Screening or routine enquiry for ACEs typically involves service users completing a tool to measure their past exposure to ACEs, either before or during contact with a health or other professional. Responses to the tool can then be discussed during the contact to enable service users to reflect on how their childhood history may be affecting their current health, and to inform any additional support needs. The approach has most commonly been used in health settings, including primary care, maternity, paediatric and specialist services (380). In California, USA, for example, the state-wide ACEs Aware programme is providing training to healthcare providers and incentivises them to implement routine ACE screening with Medicaid patients (those on low incomes receiving public health insurance) in order to identify and treat clinical risk of toxic stress. Implementers are provided with training on how to implement toxic stress-responsive interventions within clinical practice and a range of resources to help them develop cross-sector networks of care, in order to enable patients identified as being in need of additional support to access appropriate treatment and care (<https://www.acesaware.org/>).

The increasing use of screening or routine enquiry for ACEs has raised some concerns primarily relating to limited evidence on its effectiveness. However, studies to date have generally found ACE screening to be feasible and acceptable to both patients and practitioners, with screening improving the provider-patient relationships and often appreciated by patients as a tool for improving their health (380,392,393). Concerns include the potential for offending patients, re-traumatising or stigmatising those with ACEs, the potential for a difference in subsequent services based on an individual's ACE count, and eroding trust between patients and service providers, as well as the ethics of screening if there are no effective treatment options for those identified as vulnerable (394). However, where screening has been implemented, these concerns have often not been reflected in patient feedback (379). A recent review concluded that more evidence was required to recommend screening programmes for ACEs (395), with further research required to identify appropriate tools, approaches and most critically whether it has benefits to patients' health.

9. Links to and learning from other international innovation

9.1 ACEs and the sustainable development goals

The United Nation's 2030 sustainable development goals are a set of 17 goals that aim to tackle current global challenges, improving health and well-being whilst protecting the planet. ACEs are a cross-cutting factor for many SDGs, and various SDGs specifically address individual ACEs (e.g. SDG target 16.2: end abuse, exploitation, trafficking and all forms of violence against children).



ACEs are a threat to the attainment of the SDGs, particularly those targeting poverty, good health and well-being, quality education, gender equality, reduced inequalities, peace, justice and strong institutions. Whilst addressing ACEs will support the attainment of the SDGs, achieving a broad range of SDGs provides a powerful foundation for preventing ACEs, addressing the underlying social determinants of poor health, and supporting effective response strategies across the life course. Work to address ACEs, whether at a local, regional or national level, will contribute to our global commitment to attaining a better, more peaceful and sustainable future for everyone. This section summarises links between ACEs and SDGs.



Goal 1: Ending poverty in all forms everywhere.



Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture everywhere.



Goal 10: Reduce inequality within and between countries.

Those living in the most deprived communities are often most at risk of experiencing ACEs (396). The combination of ACEs and poverty can promote conditions for ongoing trauma. For example, those living in more deprived communities are less likely to be able to access support to mitigate the impacts of ACEs. Experience of ACEs also increases risks of poor academic achievement, unemployment, and physical/mental poor health, influencing socio-economic outcomes across the life course (14).



Goal 3: Ensure healthy lives and promote well-being for all at all ages.

ACEs can increase the risks of poor health and well-being (Section 4). Preventing ACEs would help to ensure healthy lives and well-being through the reduction of long-term conditions such as cardiovascular disease and cancer (see Section 4.3). Preventing ACEs would contribute to the SDG target to end preventable deaths of newborns and children under 5 years of age (SDG target 3.2). Achieving universal health coverage, and access to sexual and reproductive health-care services (SDG target 3.8) has a critical role in preventing and responding to ACEs. Health services are often the first point of contact for those at risk of, or who have experienced, ACEs and can help respond to ACEs, address risk factors, and inform and implement policies and prevention. Strengthening the prevention and treatment of substance abuse (SDG target 3.5) has the potential to reduce children's ACEs, and address associated outcomes (38).



Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Experience of ACEs can affect a child's development, ability to learn and risk of school drop-out (Section 4). Addressing ACEs supports children's educational and social development, and employment opportunities (14). Schools can support children with ACEs, helping to mitigate any negative effects. Provision of quality education, increased school participation, and promotion of lifelong learning can protect against involvement in violence (172,397). Quality pre-school education can prevent child maltreatment, improve child outcomes and support parents (398,399).



Goal 5: Achieve gender equality and empower all women and girls.

Addressing child maltreatment and intimate partner violence will support the achievement of SDG targets to eliminate all forms of violence against women and girls (SDG target 5.2) and harmful practices, such as child, early and forced marriage, and female genital mutilation (SDG target 5.3). Violence is a gender-based issue, with violence against women and girls rooted in gender inequalities and harmful gender roles and norms (400).



Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.

ACEs can place a heavy strain on health and criminal justice systems, and social and welfare services. They can erode the economic fabric of communities as local economies are impacted by workforce absenteeism, lost productivity and loss of human capital, and face disincentives for investment and economic development (400). Building community resilience through, for instance, strengthening community trust and cohesion may go some way to protecting against the effects of ACEs as well as improving community safety.



Goal 16: Promote just, peaceful and inclusive societies.

The SDGs recognise ACEs as impeding sustainable development, with a number of targets specifically addressing violence (SDG target 16.1: significantly reduce all forms of violence and related death rates everywhere; SDG target 16.2: end abuse, exploitation, trafficking and all forms of violence against children). Experience of ACEs increases the risks of engagement in violence as a perpetrator and victim during childhood and adulthood (38) (see also Section 4.4).



Goal 17: Strengthen the means of implementation and revitalise the global partnership for sustainable development.

ACEs impact on the priorities of multiple sectors and effectively preventing and responding to them requires a multi-sector approach informed by data and evidence. This can be supported by strengthening global data on the extent and impacts of ACEs, sharing evidence and practice, building knowledge and capacity, and developing partnership working at local, national and international levels.

9.2 ACEs and the United Nations Convention on the Rights of the Child

In 1989, world leaders adopted the United Nations Convention on the Rights of the Child (UNCRC)¹⁵. In this international agreement, nations have promised to protect and fulfil rights for children, so that they can grow, learn, play, develop and flourish with dignity. A number of the articles in the UNCRC relate directly to the prevention and response of ACEs. For instance:

- Article 19 states that governments must do all they can to ensure that children are protected from all forms of violence, abuse and neglect and bad treatment by their parents or anyone else who looks after them;
- Article 34 states that governments must protect children from all forms of sexual abuse and exploitation;
- Article 35 states that governments must protect children from being abducted, sold or moved illegally to a different place in or outside their country for the purpose of exploitation; and
- Article 39 states that children who have experienced neglect, abuse, exploitation, torture or who are victims of war must receive special support to help them recover their health, dignity, self-respect and social life.

Other articles relate indirectly to the prevention of ACEs and their consequences through improving wider socio-economic determinants of health, including Article 24 (every child has the right to the best possible health), Article 26 (every child has the right to benefit from social security), Article 27 (every child has the right to a standard of living that is good enough to meet their physical and social needs and support their development) and Article 28 (every child has the right to an education).

¹⁵ <https://www.unicef.org/child-rights-convention>

9.3 ACEs and international policy

Preventing and addressing the impacts of ACEs supports multiple global commitments, including those to prevent violence against children and all forms of violence across the life course; improve maternal, child and population health and well-being; build healthy, stronger and resilient communities; and reduce health, social and gender inequalities. For instance, across the WHO European Region, preventing ACEs is an increasing priority and substantial developments have been made, with an increase in coordinated action and the development of national action plans on child maltreatment prevention and protection (16). Member states have adopted, and are implementing various calls for action that specifically aim to: prevent and respond to interpersonal violence (including child maltreatment), directly or indirectly address the underlying causes, and mitigate associated impacts. Embedded across these calls is the adoption of a life course approach that recognises that adult health and illness are rooted in health and experiences in previous stages of the life course. Building commitment to a life course approach aims to improve health and well-being, promote social justice, and contribute to sustainable development and inclusive growth and wealth in all countries. Underpinning and supporting these calls for action are global and regional strategies, action plans and resolutions that aim to address interpersonal violence and its root causes. Despite this, few specifically focus on ACEs collectively, and further efforts are required to develop a cohesive and inclusive approach to preventing and responding to ACEs.

9.4 ACEs and related international work programmes

WHO's thirteenth general programme of work 2019-2023: *Promote health, keep the world safe, serve the vulnerable* (401) is based on the SDGs and a commitment to achieve health-related SDGs. At the heart of the work programme are three, interconnected strategic priorities to address SDG goal 3 in particular: ensure healthy lives and promote well-being for all at all ages. These strategies are: achieving universal health coverage, addressing health emergencies, and promoting healthier populations. Whilst universal health coverage will have a critical role in improving both the prevention and response to ACEs, preventing and mitigating the effects of ACEs is likely to contribute to healthier populations via relationships between ACEs and future ill health (see Section 4). Furthermore, since the impacts of ACEs such as health-harming behaviours and chronic illnesses are linked to risks of communicable disease, such as COVID-19 (Box 9.1) (402), there is also potential for a reduction in ACEs and its consequences to impact positively on efforts to achieve better protection from future health emergencies. There are a number of other international programmes of work relevant to ACEs (Box 9.2).

Box 9.1: The impact of COVID-19 on ACE exposure and effects

Managing the COVID-19 pandemic has placed huge burdens on societies, diverting attention and resources away from the prevention and response of ACEs. The pandemic is likely to have increased the risk of ACE exposure and exacerbated effects (403,404), through:

- Lockdown restrictions, which have seen families forced to stay within their own homes for long periods of time, and have increased risk factors for ACEs such as parental unemployment and parental stress.
- The disruption of social support networks or services, which have hindered opportunities to escape or cope with traumatic home settings, or detect and support adversity.
- The disruption to programmes or services that help prevent or ameliorate the effects of ACEs, such as parenting programmes or youth support services.
- The unequal burden of the COVID-19 pandemic across society; those that have previously suffered ACEs are more likely to have been negatively affected by the pandemic due to having higher risks of chronic conditions associated with greater risks of disease severity, or mental illness due to social isolation.

Box 9.2: Examples of international programmes of work relating to ACEs**UNICEF**

One of UNICEF's strategic goals (2022-2025) is to protect every child, including adolescents, from violence, exploitation, abuse, neglect and harmful practices. Addressing gender inequalities is one of nine change strategies to progress SDGs and children's rights (405).

UNOCD

The UNOCD's programme of work (2021-2025) is clustered around five main themes, which include working with member states to address and counter the world drug problem as well as promoting crime prevention and criminal justice (406).

UNDP

A strategic aim of the UNDP is working towards gender equality and the reduction of gender-based violence, as well as working towards the eradication of poverty (407).

World Bank group

The World Bank group share a number of commitments related to ACEs, such as work towards ending extreme poverty and to promote shared prosperity (408).

10. Limitations in ACE knowledge and key research agendas

Research into the prevalence of ACEs, their impacts, and best practice for their prevention and management is rapidly growing. However, there remains a number of important limitations in ACE research and key areas for future exploration. These include:

- **Developing a shared definition of ACEs, including a shared understanding of what should be considered an ACE.** There is no universally agreed definition of ACEs. This means that definitions used by studies can often vary, making comparisons across studies more challenging. Furthermore, studies often focus on a specific set of ACEs that affect children in the home environment, but children can suffer a wide range of other ACEs such as parental death, bullying in school, community violence, persecution, forced migration and exposure to war, terrorism or natural disasters. Incorporating knowledge across a broader range of ACEs and responses is an important aspect for future work. Equally, achieving a shared understanding of what should be regarded as an ACE would help to clarify understanding and increase the consistency of future studies.
- **Consistent measurement of ACEs.** There is inconsistency in how ACEs are measured across studies, particularly for studies involving children, for which there is limited data. Although ACE tools are increasingly being used with children, most studies focus on specific ACE types (e.g. child maltreatment) and few measure cumulative ACEs. More consistent data collection would promote early prevention, inform the provision of support, evidence the impact of prevention, and help to evaluate progress.
- **Continued data collection on ACEs.** A number of countries have implemented ACE surveys using large, representative samples. The continuation of these large-scale studies would aid understanding of ACE prevalence and efforts to advocate for change.
- **Better understanding of the relationship between ACEs and poverty.** Childhood poverty can adversely impact on socio-economic status and health later in life and there are debates around whether it should be included as an additional ACE. ACEs can drive and trap family generations in cycles of deprivation and poverty, due to their impact on employment and social and living opportunities, which can restrict social movement. Furthermore, in low-income settings, it may be difficult to disentangle child neglect from a lack of material resources available to families (e.g. food, housing) (69). Future work to understand more clearly the relationships between ACEs and poverty is important.
- **Greater use of cohort and longitudinal studies.** Many studies have relied on the use of cross-sectional, retrospective studies with adults to establish links between ACEs and health harms. Greater use of cohort studies and longitudinal studies with children, such as the ongoing FinnBrain research project in Finland¹⁶, would provide a better understanding of children's life experiences and help to further identify which ACEs cause the most harm and which factors across the life course can offer most protection.
- **Greater use of brain and biomolecular science.** Brain and biomolecular science can help elucidate how ACEs impact on later health outcomes. Further research linking brain and biomolecular science with epidemiology could help to identify which ACEs cause the most harm to development, critical periods (e.g. stages of life) in which ACEs cause the most harm, whether and how harm from ACEs can be reversed, and what can offer protection from potential harm.
- **Greater evidence on therapeutic interventions that can treat toxic stress.** Research is beginning to identify evidence-based interventions that can counter the neurologic, endocrine, metabolic, immune and genetic impacts of toxic stress. Future research is needed to further elucidate the mechanistic pathways, identify biomarkers of toxic stress, and develop therapies that target the underlying toxic stress physiology.

¹⁶ In Finland, FinnBrain research is a prospective, longitudinal study aiming to identify the combined influence of environmental and genetic factors on child development and later health outcomes. Launched in 2010, the study is following a cohort of parents and children from pregnancy onwards, and is focusing on early life stress and its influence on health. In addition to asking parents about ACEs at different stages of the project, children (now aged nine years) are being interviewed about their ACEs. Brain and biomolecular data have been collected from the newborn period onwards. For more information see: <https://sites.utu.fi/finnbrain/en/>.

- **Developing a shared understanding of trauma-informed practice (TIP).** TIP approaches are often poorly defined and vary in what is delivered, how and with whom. Work to generate a shared definition of TIP and the components needed to achieve it would be helpful in driving practice forward. This should be an international consensus, and therefore led and developed by the WHO.
- **Expanding the evidence base on ACE enquiry.** While ACE enquiry (or screening) offers an effective method of establishing individual needs and informing future care, there are concerns around its use that need addressing. Further research is required to identify appropriate enquiry tools, approaches and potential benefits or harms to patients' health.
- **Expanding the evidence on the impacts of TIP practice.** Evaluations of TIP approaches are limited, particularly in terms of their longer-term impacts. With little known about TIP's effectiveness, a further challenge is to develop the evidence base on this approach and its potential to make a difference and improve lives (391).

Future work addressing these limitations and key research agendas will support greater understanding of how countries and populations are affected by ACEs and the causes and consequences of ACEs, as well as the development of evidence-based options for their prevention and the moderation of their impacts on health across the life course.

11. Conclusions

A great deal of research on ACEs has been implemented over the last few decades. This work has been fundamental in generating understanding of how populations are affected by ACEs, the impact that ACEs can have on individuals' biology, health and behaviour, as well as on wider public services, communities and societies; and the factors that build resilience and protect against ACEs' potentially harmful effects. Whilst ACEs are not new issues in themselves, bringing together childhood adversities that can cluster in people's lives and considering these adversities together offers a fresh perspective on these important issues. Moreover, an understanding of ACEs allows multiple sectors and agencies to recognise that the issues they see in people's lives, whether health, education, social or criminal justice related, are often rooted in the same childhood adversities and resulting toxic stress response. This may support a response that targets the root causes of key societal issues (including the prevention of ACEs) rather than managing the symptoms. Solutions to ACEs, like the impacts of ACEs, span all sectors of government and public service, and work to address ACEs can provide a shared understanding and shared terminology to allow better joined up solutions to prevention, resilience and trauma-informed responses.

Research suggests that ACEs are common in populations around the world (Sections 3.1 and 3.2) and more prevalent in certain demographic groups (Section 3.5). ACEs can be driven by poverty and inequity, and be a contributor to poverty and inequity, as individuals are started on a less healthy, happy and productive life course (Box 4.1). The interrelationship between ACEs and inequalities requires greater understanding along with how to break the cycles connecting them. Greater clarity on the prevalence of ACEs is also needed, particularly through establishing shared definitions of ACEs, greater consistency in data collection, and agreement on what should be included as an ACE or considered separately as a broader determinant of health (e.g. poverty, racial discrimination). This will help to better understand both geographical and socio-demographic variation in ACEs, informing prevention and enabling support to be provided to those who need it most.

ACEs have the potential to impact substantially on people's health and well-being (Section 4). Much evidence has been derived from cross-sectional studies that provide a snapshot of individuals' current circumstances. Cross-sectional studies provide valuable, timely data on the extent and impact of ACEs within a population. However, understanding should be enhanced through the use of longitudinal research involving cohorts of individuals over time. Such longitudinal research has the potential to incorporate individuals' experiences throughout the life course and could help identify which types of ACEs have the greatest impact on health and when. In a similar way, life course research should also improve our understanding of what makes some people less likely to experience long-term harm than others (Section 7.10). The use of brain and biomolecular science has enriched our understanding of the impact of ACEs (Section 5) and further work in this field will help identify which biological changes are permanent, and which can be reversed and how, feeding into TIP and other supportive interventions (Section 7).

With a growing evidence base on what can be effective in preventing ACEs or their harms (Section 7), there is much we can already put in place to reduce the burden that ACEs places on individuals and society and to help generate safer and fairer environments for all. Whilst many interventions focus on reducing single ACEs (e.g. child maltreatment, intimate partner violence) there are a common set of intervention themes across many ACE types, with strategies often overlapping (Section 7.8). These include:

- Working with parents to develop safe and stable relationships with their children and strengthen parenting skills.
- School-based prevention to build life skills and resilience, as well as develop relationship skills.
- The provision of effective toxic stress and trauma-informed response and support for those affected by ACEs.

Whilst these approaches aim primarily to reduce ACEs and their harms, it is likely that additional health and well-being benefits and savings (see Section 6) will be derived from their implementation. The better and earlier the support given to children and adults affected by ACEs, the better the chances of mitigating effects on health and reducing the likelihood of intergenerational transmission (Section 4.7). Importantly, research shows that many people exposed to ACEs do not experience harmful effects and that factors such as having a trusted, supportive relationship with an adult or good social support in the community can make people more resilient. Whilst our understanding of the effectiveness of interventions to strengthen resiliency is expanding (Section 7.10), further work to explore what works for different groups of individuals would help to target interventions and improve support.

As our understanding of ACEs and their impact has grown, so too has the interest in providing trauma-informed practices (TIP) to those affected (Section 8). With TIP approaches in their relative infancy, further work is needed to generate a shared definition and understanding of TIP approaches and improved consistency of what is delivered. Work to establish the longer-term impacts of TIP approaches would also help to identify the benefits and importance of its use in different areas of practice. Importantly, TIP approaches have the potential to benefit not only individuals involved in services, but also the well-being of staff involved in their care (see Section 8).

It is likely that the COVID-19 pandemic has increased the risk of ACE exposure and exacerbated the health effects of ACEs (Box 9.1). As countries continue to manage COVID-19 risks and protect populations from infection, further research is needed to explore how reduced services and forced changes in lives (e.g. more home working, school closures etc) impact on the risks of children experiencing adversity and the health impacts of those already suffering from the effects of ACEs (e.g. reduced health services for chronic conditions). Greater recognition of the unintended impacts of COVID-19 restrictions could help to inform solutions that address both future COVID-19 and ACE risks. The pandemic has also raised issues about how ACEs can be prevented when people are isolated within their homes. It should accelerate our thinking on how social media and other digital utilities and communications can be used to prevent, identify and respond to ACEs, as well as how we provide support to those already affected.

Increasingly, nations, regions, cities and communities have an aspiration to be ACE and trauma-informed, where ACEs are prevented wherever possible, resilience is a shield for those who still suffer ACEs, and TIP and toxic stress-responsive interventions are available for those who sadly still suffer from their consequences across their life course. Through bringing together the current research on ACEs, their impact and the evidence on prevention, mitigation, resilience and TIP, we hope this document can help bring these aspirations at least a little closer.

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