ScotPHN report

Scottish Public Health Network (ScotPHN)

'Polishing the Diamonds'

Addressing Adverse Childhood Experiences in Scotland

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Phil Mackie

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Contents

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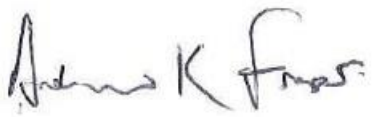
FOREWORD

A very wise, experienced Health Visitor used the analogy, when talking about children that they are like diamonds: their potential is inherent, but they need to be polished with care and attention. Sadly, not all of our children in Scotland are currently being 'polished' with enough care and attention, with a significant number being subjected to Adverse Childhood Experiences (ACEs).

The aim of this briefing paper is to give an overview of ACEs and to provide an insight into the following questions:

1. What does the term Adverse Childhood Experiences (ACEs) mean?
2. What harm dose being exposed to Adverse Childhood Experiences cause?
3. How does being exposed to Adverse Childhood Experiences cause harm?
4. Are there some ACEs that have more of a detrimental effect than others?
5. Are some people more likely to be affected by ACEs than others?
6. How common are ACEs and can we measure how many people are affected in Scotland?
7. What is the economic impact of ACEs in Scotland?
8. What can be done about Adverse Childhood Experiences?

On the basis of these considerations, a number of areas for possible Public Health action / intervention are identified for further discussion.



Andrew Fraser
May 2016

1. What does the term Adverse Childhood Experiences (ACEs) mean?

The term Adverse Childhood Experiences was originally developed in the US in the context of the Adverse Childhood Experiences (ACE) study[1]. It has since been the subject of study in numerous other countries and has been accepted to mean:

> *"intra-familial events or conditions causing chronic stress responses in the child's immediate environment. These include notions of maltreatment and deviation from societal norms"* [2]

Categories are subdivided into overt abuse, neglect (both physical and emotional) and household adversity (see Table 1).

Table 1 – Categories of Adverse Childhood Experience

Abuse	**Neglect**	**Household Adversity**
Emotional Abuse	Emotional Neglect	Domestic violence
Physical Abuse	Physical Neglect	Household Substance Misuse
Sexual Abuse		Household Mental Ill Health
		Criminality
		Separation
		Living in care

1.1 The original ACE study

The original study of Adverse Childhood Experiences[1] was conducted in the United States at Kaiser Permanente from 1995-1997. Over 17,000 people, who were patients enrolled with Kaiser Permanente, completed a survey, answering questions about childhood maltreatment, family dysfunction and current health status and behaviours. A physical examination was also conducted.

The study refers to an ACE score, which is the total count of the ACEs reported by each participant. It used 10 questions to calculate an ACE score out of 10 (Seed Appendix 1).

It has been recognised that there are other types of adverse experiences in childhood, which are also likely to have similar negative effects on health, but these ten were the ones used by this study.

2. What harm does being exposed to Adverse Childhood Experiences cause?

Observed associations between experiencing ACEs and 'ill-health' in its widest definition can be divided into four categories:[3]

- injury and death during childhood;
- premature mortality and suicide;
- disease and illness; and
- mental Illness.

2.1 Injury and death during childhood

Self-harm and suicide have been shown to be more prevalent in the adult populations studied; therefore it is likely that this will be the same in children. Injury rates in childhood have been shown to be more common in areas of socioeconomic deprivation and, therefore, are also likely to be linked to the prevalence of ACEs. However, these are speculative associations as there is a lack of data in this area.

2.2 Premature mortality and suicide

A British study following the 1958 Birth Cohort examined the relationship between experiencing ACEs and premature mortality ≤ 50 years.[2] Men who had experienced 2 or more ACEs had a 57% increased risk of death than men who had experienced no ACEs. The risk for women took the pattern of a graded relationship, a 60% increased risk with one ACE and an 80% increased risk with 2 or more ACEs.

Whilst there is little doubt that the experience of ACEs affects both morbidity and premature mortality, whether ACEs could help to explain Scotland's 'excess mortality' has been studied. Negative early years and childhood experiences were compared in Glasgow and the Clyde Valley to similarly socioeconomically deprived areas in England – Merseyside and Greater Manchester[4]. The difficulties of this were

acknowledged as many of the measures relied on self-reports by the parents and measures of more extreme aspects of household dysfunction were missing. A paper yet to be published acknowledges the difficulties of trying to investigate this hypothesis using routine data. However, it concludes that the role of childhood adversity and attachment experience merits further investigation as a plausible mechanism influencing health in Scotland.[5]

An increased suicide risk has been shown to be linked to the presence of childhood adversity by age seven.[6]

2.3 Disease and illness

Experiencing ACEs has been linked to a whole variety of health harming behaviours and illnesses. The US ACE study[1] findings demonstrated that as the total count of ACEs increases so does the risk of experiencing the following conditions:

- Alcoholism and alcohol abuse
- Chronic obstructive pulmonary disease (COPD)
- Depression
- Foetal death
- Health-related quality of life
- Illicit drug use
- Ischemic heart disease (IHD)
- Liver disease
- Risk for intimate partner violence
- Multiple sexual partners
- Sexually transmitted diseases
- Smoking
- Suicide attempts
- Unintended pregnancies
- Early initiation of smoking
- Early initiation of sexual activity
- Adolescent pregnancy

Mark Bellis, whilst Professor of Public Health at the Centre for Public Health at John Moores University, and his team have studied the impact of ACEs on a sample of the UK population. They showed people who have experienced four or more ACEs when compared to another person who has no experience of ACEs were.[7]

- almost 4 times more likely to smoke;
- almost 4 times more likely to drink heavily;
- almost 9 times more likely to experience incarceration; and
- some 3 times more likely to be morbidly obese.

Those with higher ACE scores were also at greater risk of:

- poor educational and employment outcomes;
- low mental wellbeing and life satisfaction;
- recent violent involvement;

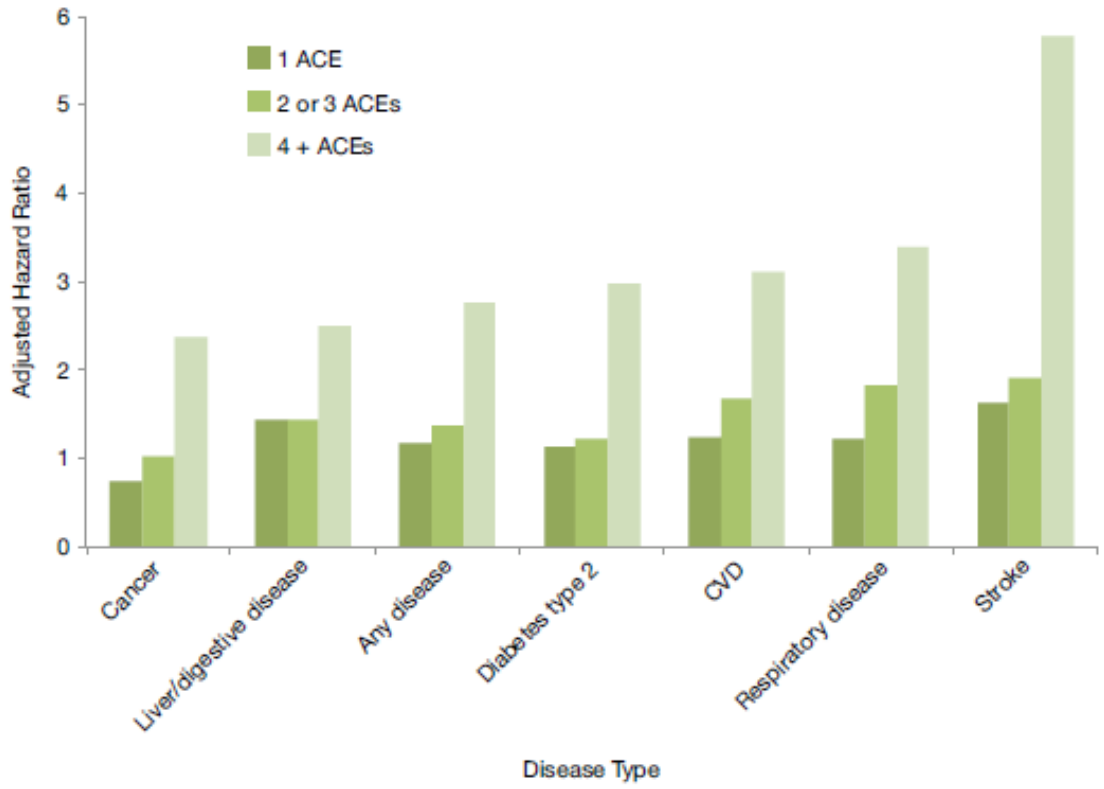
- recent inpatient hospital care;
- chronic health conditions;
- having caused/been unintentionally pregnant aged <18 years; and
- having been born to a mother aged <20 years.

Figure 1 below is based on data from a 2013 survey of 4,000 English adults and produced by the UCL Institute of Health Equity.[3] It demonstrates strongly the relationship between experiencing varying number of ACEs and the increased odds of developing various physical health conditions.

The same paper[3] also uses the same data to show that people experiencing more ACEs develop illness at a younger age. By the age of 69, of those people experiencing 4 or more ACEs, only 20% will not have developed a major illness compared to around 50% of people who have not experienced any ACEs.

Figure 1 Changes in risk of disease with increase history of ACE 2013

Changes in risk of disease development with increased history of ACE, English survey data, 2013



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2.4 Mental Illness

The impact of childhood adversity on the development of adult mental illness has been studied. Using data from the World Health Organisation World Mental Health Surveys, which included 21 countries, six of which were high income countries but did not include the UK, Kessler et al[8] estimated that eradicating childhood adversities would lead to a:

- 22.9% reduction in mood disorders;
- 31.0% in anxiety disorders;
- 41.6% in behaviour disorders;
- 27.5% in substance disorders; and
- 29.8% of all disorders studied.

In terms of mental wellbeing, the adjusted odds ratios for low life satisfaction and low mental well-being have also been shown to increase with the number of ACES experienced in a UK population.[9]

ACEs have also been shown to have an impact, as expected, on developing a mental illness whilst still in childhood. In a US study of 12-17 year olds enrolled with Medicaid in Washington State, the prevalence of a mental health problem rose from 11% in children experiencing no ACES to 44% in those having experienced five or more ACEs.[10]

The development of Borderline personality disorder, seems to be determined by a complex mix of genetic and adverse experiences,[11] however, the role of adverse childhood experiences such as abuse and neglect seems to have a strong effect.[12]

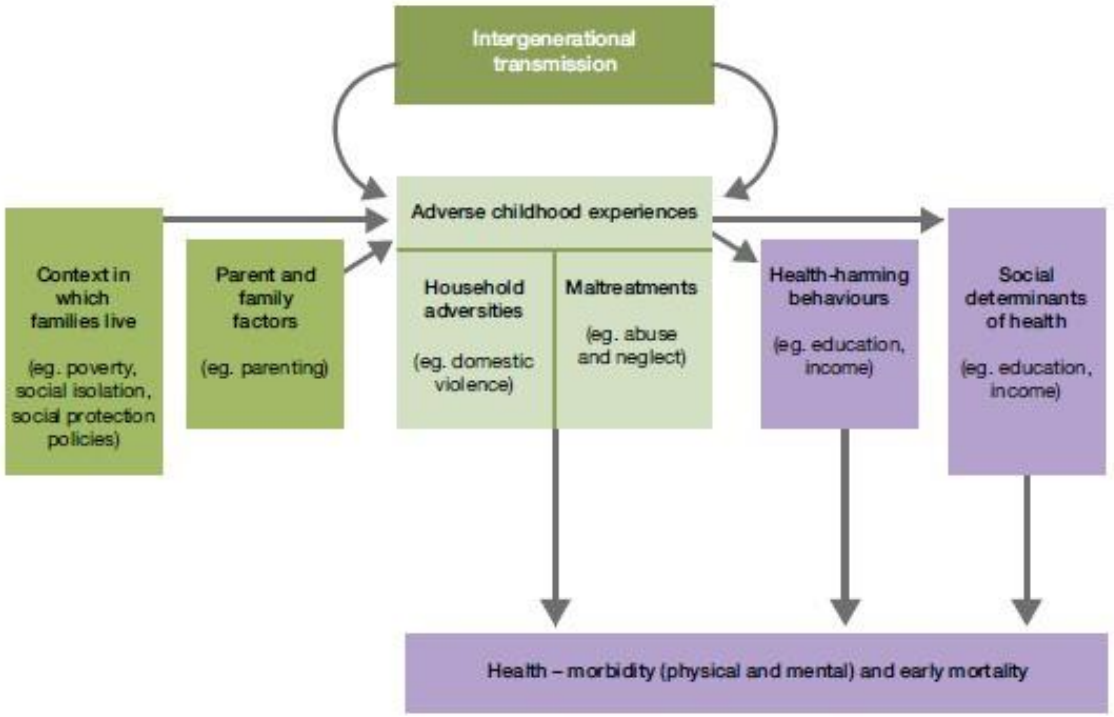
3. How does being exposed to Adverse Childhood Experiences cause harm?

Three mechanisms for how ACEs cause harm have been suggested:

- health-harming behaviours;
- social determinants of health; and
- neurobiological and genetic pathways.

Figure 2 sets out a conceptual framework which explores these mechanisms.

Figure 2 Conceptual Framework of the causes, consequences and intergenerational transmission of ACEs



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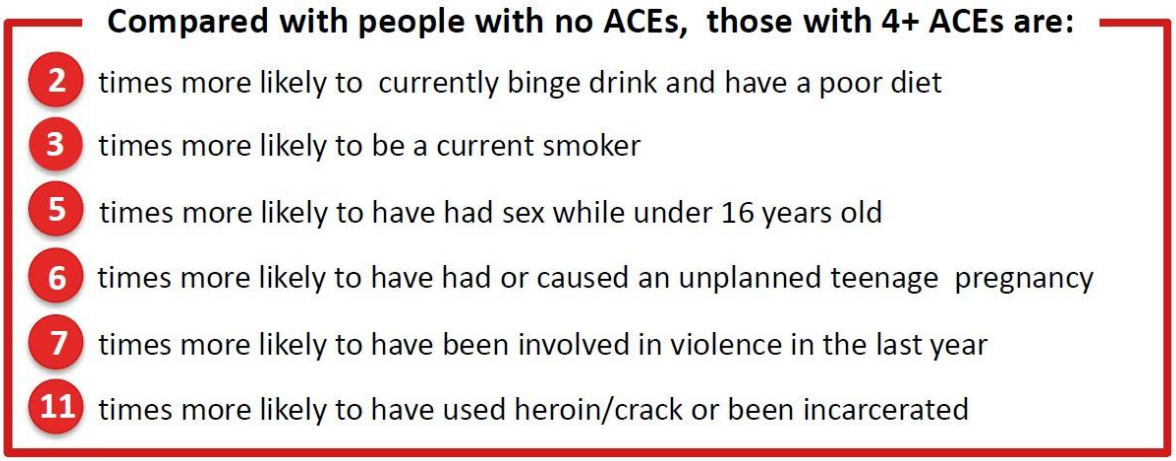
3.1 Health-harming behaviours

As described previously, experiencing ACEs is linked to health-harming behaviours. Figure Three shows the English ACE study's[13] findings of health behaviours in their study population.

Figure 3 English ACE Study Data



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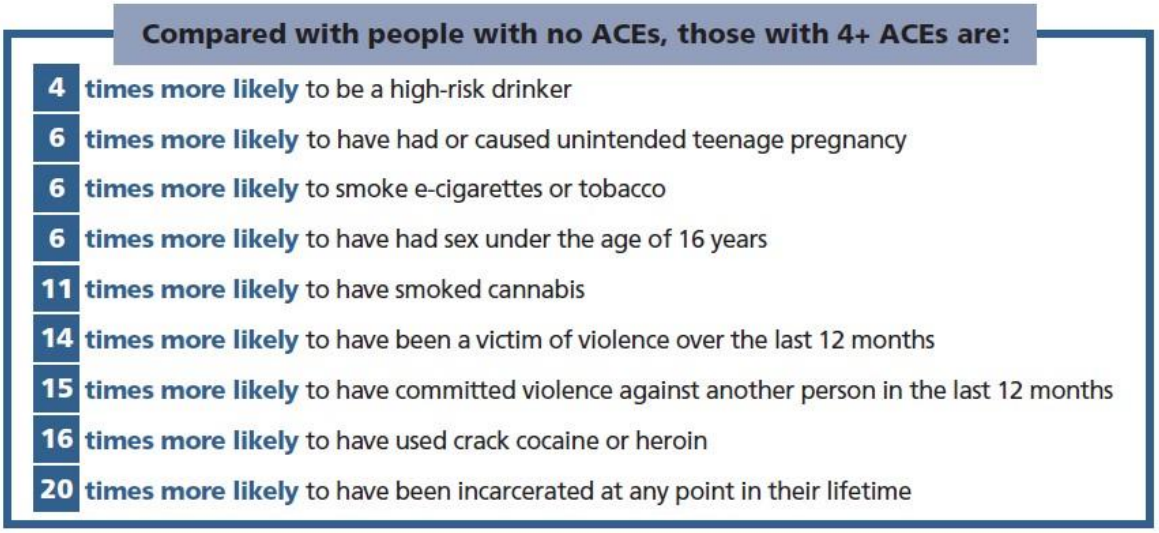
The figures for Wales are even higher (see Figure 4).

Figure 4 Welsh ACE Study Data



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3.2 Social determinants of health

ACEs have been shown to have a negative impact on the social determinants of health such as education, employment and income.

3.3 Neurobiological and genetic pathways

It has been suggested that altered responses to stress can lead to physical changes in the way the brain develops. This is often referred to as 'toxic stress'[15] and is thought to have an effect on how someone adapts to future adverse experiences and in the chance of developing health harming behaviours.[2]

4. Are there some ACEs that have more of a detrimental effect than others?

As outlined above, people who experience more ACEs have a greater chance of developing health-harming behaviours, mental and physical ill health, with those people experiencing four or more ACEs having the greatest chance of being affected.

However, there are also some categories of ACEs for which there is stronger evidence of a detrimental effect. Data from the World Health Organisation are illustrated in Figure 5.

Whilst physical abuse results in the largest number of detrimental effects with either a robust association or limited evidence, sexual abuse just has the larger number of robust associations. Examining the health outcome effect, it is the mental health diagnoses that have the most robust association with all kinds of ACEs. For example, there is a robust association with physical abuse, emotional abuse, neglect, sexual abuse and developing depressive and anxiety disorders and para-suicide.

Physical abuse also has a robust association with eating disorders and childhood behaviours/conduct disorders, whereas sexual abuse also has a robust association with personality disorders and self-harm.

Figure 5 Summary of the strength of the evidence on health outcomes and child maltreatment, WHO 2013

Health outcome	Physical abuse	Emotional abuse	Neglect	Sexual abuse
Depressive disorders				
Anxiety disorders				
Suicide attempts				
Drug use				
STIs / risky sexual behaviour				
Eating disorders				
Obesity				
Childhood behavioural / conduct disorders				
Type II diabetes				
Alcohol problem use				
Cardiovascular disease				
Smoking				
Headaches / migraine				
Personality disorders				
Self-harm				
Arthritis				
Hypertension				
Ulcers				
Chronic spinal pain				
Schizophrenia				
Sexual re-victimisation as an adult				
Sexual perpetration				
Allergies				
Cancer				
Neurological disorders				
Underweight/malnutrition				
Uterine leiomyoma				
Bronchitis/emphysema				
Asthma				
Chronic non-cyclical pelvic pain				
Non-epileptic seizures				

KEY	
Robust association	
Plausible outcome/ limited evidence	
Plausible outcome/ emerging evidence	

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5. Are some people more likely to be affected by ACEs than others?

ACEs have been shown to be related to deprivation with the experience of four or more ACEs being reported by 4.3% in the least deprived quintile and 12.7% in the most deprived quintile.[13] ACEs, therefore, clearly have a role in inequalities. Health harming behaviours were also shown to increase with deprivation, with the exception of binge drinking. However, Bellis *et al*[13] also found a relationship with ACEs and health harming behaviours independent of deprivation. Bellis also notes that whilst deprivation is a strong predictor of health harming behaviours the association is not linear and there are other factors that affect susceptibility or resilience to developing health harming behaviours.

Resilience has been defined as a 'positive adaptive response in the face of significant adversity.' It is thought to transform 'toxic stress' into 'tolerable stress.' Children who end up doing well despite adversity have usually had at least one stable committed relationship with a supportive parent, caregiver or other adult. This seems to buffer them from development disruption and builds skills such as the ability to plan, monitor and regulate behaviour and adapt to changing circumstances.[16]

6. How common are ACEs and can we measure how many people are affected in Scotland?

The original US ACE study found that ACEs were common in their population with almost two-thirds of participants experiencing at least one ACE and more than one in five experiencing three or more ACEs.[17] However, it has been recognised that the 17,000 ACE study participants were mostly of white ethnic origin, middle- and upper-middle class, had been educated to college level and all had jobs and private health care (they were all members of Kaiser Permanente).[18] Therefore, the prevalence of ACEs is likely to be much higher in other, more deprived populations.

In an English study, almost 50% of people reported experiencing a least one ACE and over 8% reported experiencing four or more.[13] In a Welsh sample, the

prevalence was almost 50% of people reported experiencing a least one ACE and 14% reported experiencing four or more.[14] This demonstrates how pervasive the experience of ACE is.

Although, data exists on various aspects of household dysfunction in Scotland[5] no published studies exist to date of the prevalence specifically of ACEs in the general population of Scotland.

However, if English studies have found 9% of the study population have experienced four or more ACEs, then I think it is safe to assume that the prevalence will be at least as high in Scotland, if not higher with our higher levels of morbidity and mortality, equating to **at least** 500,000 people. If the Welsh prevalence of 14% is used this would be nearly 750000 people. If the effects on health-harming behaviours can be assumed to be the same, then those affected can be expected to be:

- two times more likely to binge drink and have a poor diet;
- three times more likely to be a current smoker;
- five times more likely to have had sex while under 16 years old;
- six times more likely to have had or caused an unplanned teenage pregnancy;
- seven times more likely to have been involved in violence in the last year; or
- eleven times more likely to have used heroin/crack or been incarcerated.

If 50% of the Scottish population, as in the English study population, experienced at least one ACE then the health-harming behaviour may be affected in around half of the Scottish population.

7. What is the economic impact of ACEs in Scotland?

Bellis et al produced a very powerful infographic (see Figure 6) based on data from their English household sample survey outlining the percentage of health harming behaviours they estimate could be reduced in England if ACEs were eradicated. The prevention potential for Wales is even greater (see Figure 7).

Figure 6: Benefits of addressing ACE – English Data

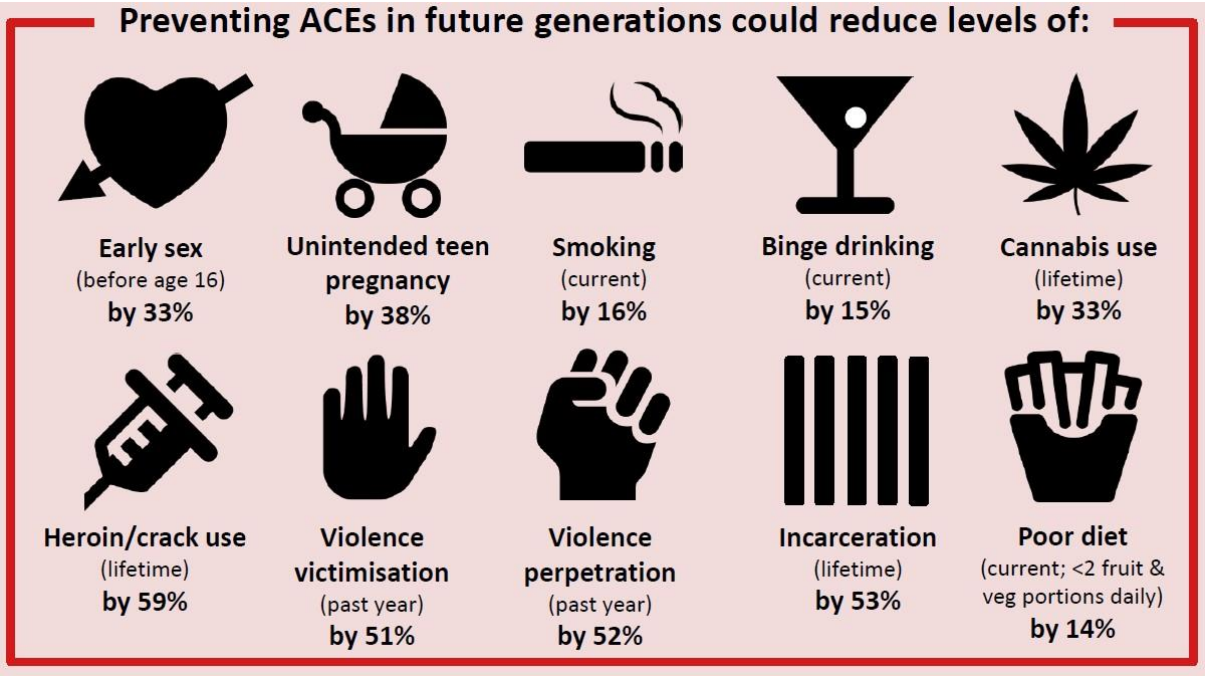

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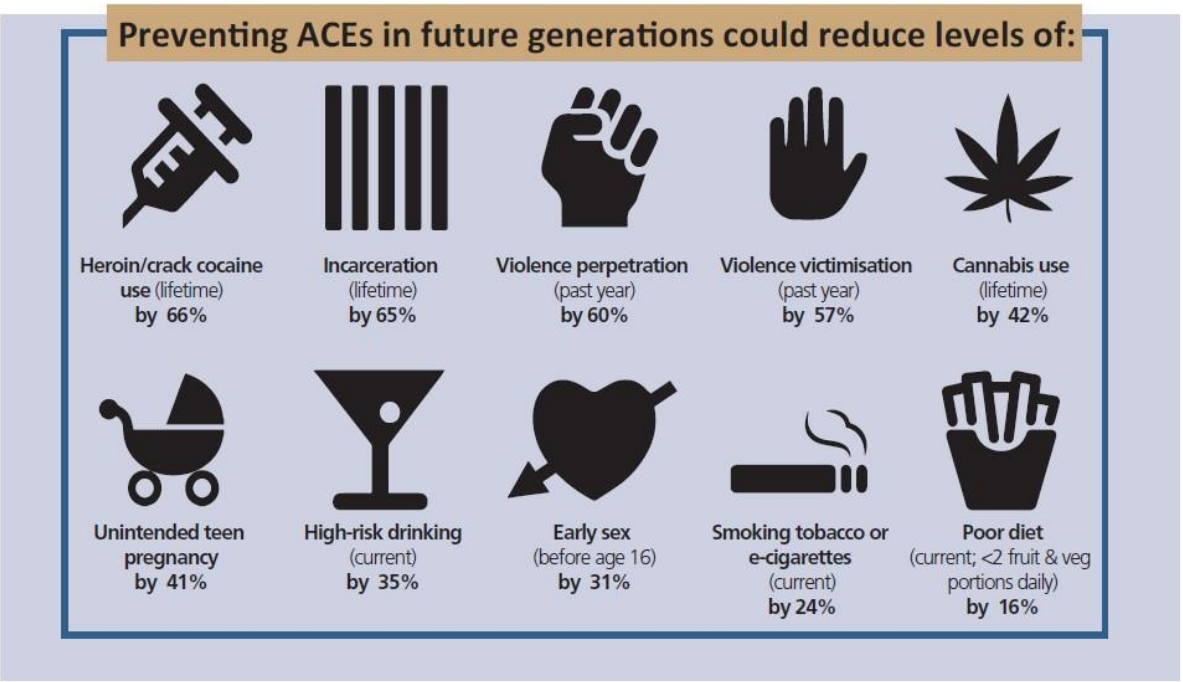
Figure 7: Benefits of addressing ACE – Welsh Data



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There is very little UK data on the exact economic impact of ACEs in society but if the data gathered by Bellis et al in the English and Welsh studies can be generalised to Scotland then the health and economic impacts and the potential economic savings are likely to be very large indeed. However, this only looks at the reduction in health-harming behaviours. If ACEs could be eradicated, or at least reduced, then the prevalence of the physical and mental health conditions outlined earlier would likely be reduced and there would be huge associated cost-savings from the associated health and social care costs, particularly for mental health conditions.[8]

8. What can be done about Adverse Childhood Experiences?

In tackling adverse childhood experiences, Bellis outlines how ACEs should be a consideration across the life course with a focus on prevention, resilience and enquiry.[19]

8.1 Creating wider awareness and understanding about ACEs

It has been recognised that communicating the role of social conditions in child maltreatment and adversity is difficult. That people generally understand the importance of individual behaviours, whereas seeing the link between poverty, lack of access to quality health care or poor educational opportunities and child abuse and neglect is more challenging.[20]

The FrameWorks Institute conducted research[20] into how to increase public understanding of this issue and identified a number of communication challenges that require to be overcome:

- help people to think beyond *individual-level causes* of maltreatment and adversity to see the importance of *societal-level solutions*;
- deepen understandings of cycles of maltreatment;
- expand people's understanding of the effects of poverty to include other social drivers; and
- help people see that addressing child maltreatment and reducing early adverse experiences is *possible.*

The following elements are suggested to be used with people to address the communication challenges identified.

Values: The Value of *Social Responsibility* primes people to view the issue of early childhood adversity as a matter of public concern, and makes them more receptive to societal-level solutions.

Definitions: Definitions of the issues at hand (e.g., neglect, abuse) ensure that audiences are attending to the same concepts.

Explanations: Explanatory Metaphors and Explanatory Chains help the public fill in their gaps in knowledge about *why* early childhood adversity exists and why it matters. Other Explanatory Metaphors can be used to increase knowledge about child development.

Facts and Solutions: Including facts—with *solutions*, crucially—helps to clarify how solutions work, and emphasizes that change is possible.

The aim overall is to create a culture of compassion in a psychologically informed society. In this the anti-stigma campaigns relating to mental health problems may be a useful analogy.

8.2 Preventing ACEs

Clearly, aiming to prevent ACEs rather than deal with the consequences when the damage has already been done makes moral and financial sense. This could help to break the intergenerational cycle of ACEs. Potential areas for action can be divided into three areas[3]:

Context in which families live

Contextual factors include:

- tackling social isolation and increasing community connectedness and social capital;
- mitigating the impact of the recession and austerity measures on families;

- working across sectors including education, public health, health care, work and employment etc;
- tackling inequality and absolute poverty;
- focusing on low wages and insufficient wages rather than just unemployment; and
- examining equity impacts, particularly for families with children and those on lower incomes.

Tackling parental and family risk factors

Parenting programmes offered universally but targeted to those in greater need with multiple risk factors supported and delivered by a range of sectors including education and health.

Tackling household adversity

Household adversity includes problems such as domestic violence, parental substance use and criminality. Suggested strategies include:

- multi-agency teams working across professional and organisation boundaries;
- recognising multiple needs and addressing these holistically;
- flexible and needs-based provision;
- importance of staff recognising and responding to risk factors for ACEs;
- importance of recognising the differing effects for different ages of children;
- gather and share data on the prevalence and clustering of ACEs; and
- advocate for policy options that would reduce the risk factors for childhood adversity such as increasing the price of alcohol.

8.3 Building Resilience

The importance of resilience in the context of improving the outcome of adverse childhood experiences has been outlined. Actions that could strengthen the foundations of resilience have been suggested[16]:

- use scientific knowledge to help identify and support children whose needs are not being addressed adequately by existing services;
- enhance “serve and return” interactions between babies living in disadvantaged environments and the adults who care for them in order to strengthen the building blocks of resilience;
- target the development of specific skills that are needed for adaptive coping, sound decision-making, and effective self-regulation in children and adults;
- develop new frameworks for integrating policies and programmes across sectors that collectively reduce adversity and build capacity; and

- finally, maximize the ultimate effectiveness of all early childhood policies and programs by focusing collectively on the full range of factors that facilitate resilience.

8.4 Enquiry

If adverse experiences in childhood are not known about then opportunities for assistance are missed. Routine Enquiry into Adversity in Childhood (REACh) is a process developed by Lancashire Care[21] whereby adults are routinely asked during an assessment about traumatic/adverse experiences in their childhood so that practitioners can plan interventions appropriately.

REACh provide training for staff from primary care, local authorities, voluntary sector etc. to support them into making routine enquiry about ACEs. In year one, training was provided to a group of Health Visitors, school nurses, family support team and substance misuse practitioners.[22] They found that:

- most participants were not aware of the impact of adversity on later life outcomes before the training;
- following training participants were not reporting difficulties with enquiring;
- there had been no reported increase in service need following the enquiries made;
- participants reported that if disclosures are made the individual will very often have been in services for a period of time and report that (a) they have never been asked about their experiences before and (b) have not self-disclosed;
- participants and managers feel that they are able to create with the individual a more appropriate intervention plan if they have enquired about previous experiences dealing with the root cause of presenting issues rather than the 'symptom';
- participants and managers report that they feel assessments are enhanced by knowledge about adverse experiences; and
- routine enquiry can easily be accommodated into current working practices

Enquiry about ACEs within the context of a medical questionnaire and subsequent enquiry into how that has affected the individual in later life was shown in one

evaluation to lead to a 35% reduction in 'doctor office visits', an 11% reduction in Emergency Department visits and a 3% reduction in hospitalisiatons.[21]

8.5 Consideration of children and ACEs in every situation

Consideration should be given in every encounter as to whether any children are involved in this situation and the possible impact on them. However, it is not always immediately obvious if children are involved.

In a recent study of severe and multiple disadvantage in England[22], while only 21% of the substance treatment adult population in the study were parents living with their own children, another 14% were living with other people's children or had contact with their own children while not living with them (20%).

Amongst the group with the most complex needs i.e. experiencing all three disadvantage domains – homelessness, offending and substance misuse - almost 60% either lived with children or had ongoing contact with their children while not living with them. This clearly demonstrates that there may be children involved in an environment where it is not immediately obvious. The study authors outline the importance of successful co-ordinated interventions with this group.

8.6 Scope for Action in Scotland

The evidence of impact of adverse childhood experiences is compelling as is the case for action from a moral and financial perspective at an individual level and to prevent the repeated cycle of intergenerational transmission.

The role of adverse childhood experiences is already being explored and acted upon in Scotland. However, a short-life working group with appropriate representation may be beneficial as a starting point to map out what further work would be useful and a suggested route forward.

On the basis of this scoping, a number of potential areas for action can be suggested.

8.7 Establishing the priority for addressing ACEs in existing work

The importance of the Early Years has been widely recognised in Scotland and is reflected in many areas of work:

- The Early Years Framework, 2008;
- The Child Poverty Strategy for Scotland, 2011;
- Children and Young People (Scotland) Act 2014;
- NHS Scotland Local Delivery Plan;
- The Health and Homelessness Standards;
- GIRFEC;
- Early Years Collaborative; and
- The Family Nurse Partnership.

Ensuring that the potential for addressing the prevention and management of the consequences of ACE in those policy areas should be identified and specific outcomes identified and delivered.

8.8 Creating an awareness and understanding about ACEs

Use the term ACEs frequently and exploit opportunities to create an understanding about the importance of ACEs, their impact and the risk of intergenerational transmission with colleagues from within the NHS and with other partners such as from the local authority and third sector. This, in turn, will enable them to consider ACEs in all their encounters and to recognise when their patients/clients are experiencing ACEs.

8.9 Data collection on ACEs

Consider whether collecting ACEs prevalence data within Scotland would create greater evidence for and emphasis on the need for action. However, this should not delay action.

8.10 Primary Prevention of ACEs

Continue to advocate for the importance of action and to create policy and strategy on all aspects of household adversity such as domestic violence, substance misuse, mental ill health, teenage pregnancy and poverty, with the aim of reducing the prevalence of these aspects of adversity and hence, reduce the exposure of the children of Scotland.

Continue to offer evidence-based targeted parenting programmes to those with greatest need with multiple risk factors and universally, if possible.

Examine the equity impacts of policies and strategies, particularly for families with children and those on lower incomes.

Continue to work across sectors on increasing community connectedness and improving social capital.

8.11 Secondary Prevention of ACEs

Explore and build upon existing strategies to increase resilience in all children, particularly children in families where there are risk factors for ACEs.

8.12 Tertiary Prevention of ACEs

Initiate research to explore how best to ensure that the longer term consequences of ACEs are effectively managed and the potential for generational transition minimised.

8.13 Establish Routine Enquiry of ACEs

Explore the potential for routine enquiry about ACEs, in appropriate circumstances.

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Appendix 1

1. Did a parent or other adult in the household **often or very often**…

Swear at you, insult you, put you down, or humiliate you?
or
Act in a way that made you afraid that you might be physically hurt?

Yes No If yes enter 1 _____

2. Did a parent or other adult in the household **often or very often**…

Push, grab, slap, or throw something at you?
or
Ever hit you so hard that you had marks or were injured?

Yes No If yes enter 1 _____

3. Did an adult or person at least 5 years older than you **ever**…

Touch or fondle you or have you touch their body in a sexual way?
or
Attempt or actually have oral, anal, or vaginal intercourse with you?

Yes No If yes enter 1 _____

4. Did you **often or very often** feel that…

No one in your family loved you or thought you were important or special?
or
Your family didn't look out for each other, feel close to each other, or support each other?

Yes No If yes enter 1 _____

5. Did you **often or very often** feel that…

You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?
or
Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Yes No If yes enter 1 _____

6. Were your parents **ever** separated or divorced?

Yes No If yes enter 1 _____

7. Was your mother or stepmother:

Often or very often pushed, grabbed, slapped, or had something thrown at her?

or

Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard?

or

Ever repeatedly hit at least a few minutes or threatened with a gun or knife?

Yes No If yes enter 1 _____

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?

Yes No If yes enter 1 _____

9. Was a household member depressed or mentally ill, or did a household member attempt suicide?

Yes No If yes enter 1 _____

10. Did a household member go to prison?

Poverty, parenting and poor health: comparing early years' experiences in Scotland, England and three city regions

http://www.gcph.co.uk/assets/0000/3817/Poverty__parenting_and_poor_health.pdf

ScotPHN report

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