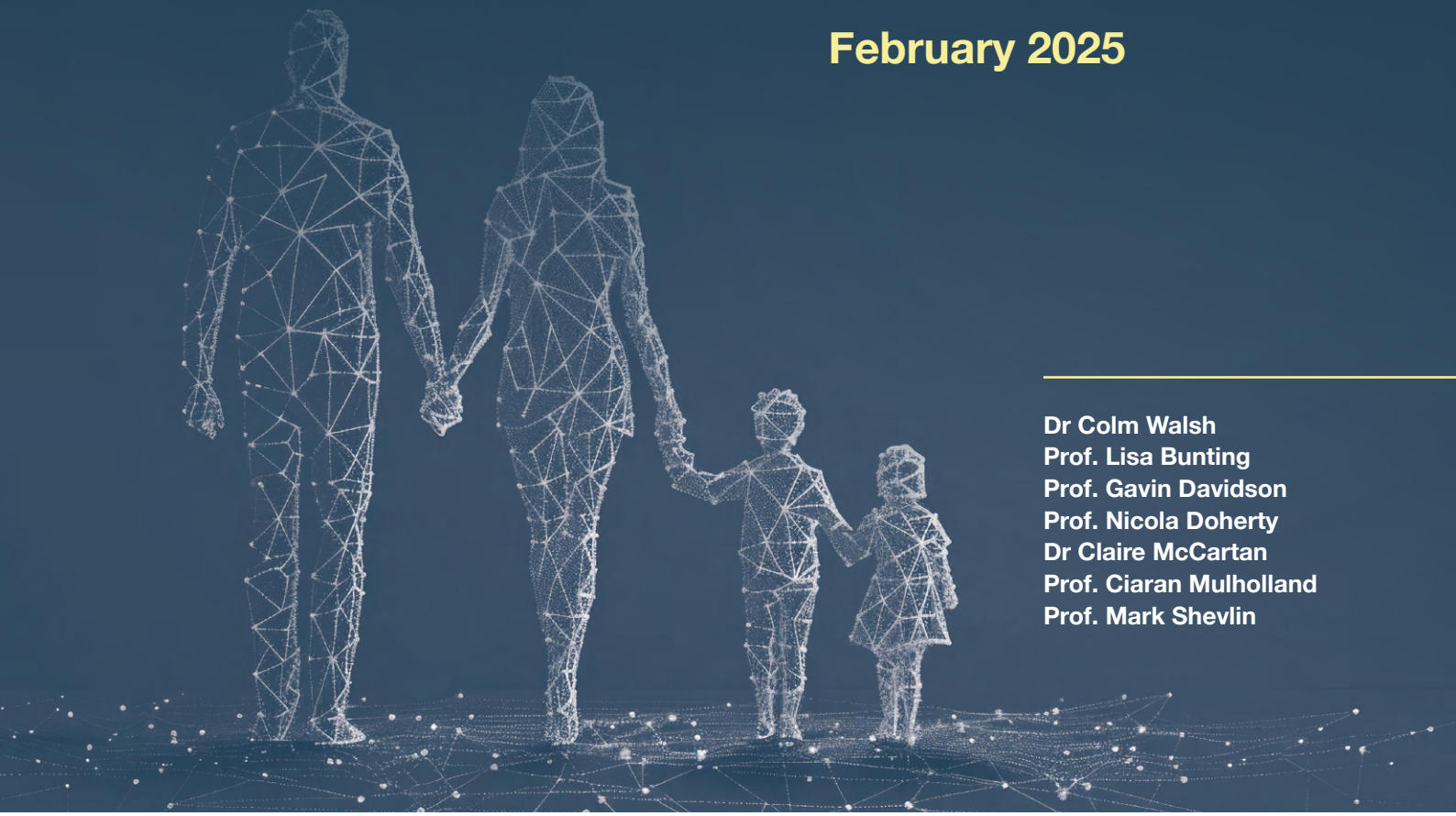
The Executive Programme on Paramilitarism & Organised Crime

The Prevalence and Impact of Adverse Childhood Experiences in Northern Ireland

February 2025



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Finally, thanks to all of the participants in the survey for their time and willingness to be involved. We hope that these survey findings will help acknowledge some of the very difficult experiences that people have had, and also inform how we support people, and prevent trauma and adversity, in the future.

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Foreword

The publication of this first comprehensive study of Adverse Childhood Experiences (ACEs) in Northern Ireland represents a significant milestone in our understanding of trauma's impact on our society. This research, commissioned by the Executive Programme on Paramilitarism and Organised Crime, and led by Queen's University Belfast, provides robust evidence of how both historical conflict and ongoing violence and harm continue to shape the lives of our citizens.

The findings are both striking and sobering. That 60% of our adult population reports at least one ACE, with nearly one in five experiencing four or more ACEs, represents a major public health challenge. More specifically, the finding that 30% of respondents reported conflict-specific adversities illuminates the unique context of trauma in Northern Ireland. Perhaps most concerning is the evidence that, despite being almost 27 years past the Good Friday Agreement, our younger generation continues to experience trauma related to paramilitary activity.

This research reveals a clear pattern of how trauma and disadvantage interact and compound one another. Both ACEs and conflict-related trauma are disproportionately concentrated in our most socio-economically disadvantaged communities. The correlation between higher ACE exposure and poorer life outcomes – from educational achievement to chronic health conditions – points to a pressing need for enhanced investment in targeted intervention and support. These findings make a compelling case for us all to reconsider how we design and deliver public services.

The implications of this research extend far beyond any single department or agency. They demand a fundamental rethinking of how we approach service delivery across all sectors. We need to continue to develop and embed trauma-informed approaches throughout our public services, from education to healthcare, from social services to justice. This means training our workforce, redesigning our systems, and ensuring that every interaction with public services supports recovery and healing.

We must develop specific strategies for areas experiencing higher levels of trauma exposure, recognising that breaking cycles of intergenerational trauma requires sustained, long-term commitment and resources.

This report provides us with both evidence and impetus for change. Most importantly, it reminds us that addressing trauma – both historical and ongoing – is essential to building a more peaceful and prosperous Northern Ireland for all.

Naomi Long
Justice Minister

Executive Summary

Adverse Childhood Experiences (ACEs) and their implications

Adverse Childhood Experiences (ACEs) encompass various forms of abuse, neglect, and household dysfunction occurring before the age of 18. They can also involve exposure to violence, particularly in conflict-affected areas.

Globally, ACEs are recognised as significant determinants of health, educational, and social outcomes across the life-course, with higher exposure to adversity during childhood correlating to poorer outcomes across physical and mental health, substance use, and behavioural trajectories.

Research consistently demonstrates that ACEs co-occur, creating a cumulative burden that amplifies risk for negative outcomes, including intergenerational effects.

Despite decades of research highlighting the pervasive and detrimental impact of ACEs, much of the literature focuses on familial and individual-level adversities, often overlooking the unique challenges posed by conflict-affected environments. Political and community violence may compound ACE exposure, yet the prevalence of such adversity and the factors that elevate risks remain underexamined in global prevalence studies. This gap is particularly concerning given that over 500 million children globally are estimated to live in conflict-affected areas, making the need for context-specific research urgent.

ACEs in conflict-affected contexts

Conflict settings present distinct challenges that intensify childhood adversity. Exposure to paramilitary threats, collective violence, and the conflict-related bereavement represent forms of trauma that extend beyond the home. However, traditional ACE frameworks, such as the original 10-item ACE measure, inadequately capture these experiences. For example, while international studies have documented conflict-related trauma in regions such as Serbia and Kashmir, Northern Ireland—a region historically impacted by decades of political unrest known as the Troubles—lacks comprehensive, population-based research on ACEs.

Existing studies in Northern Ireland reveal high levels of stress, mental health challenges, and adverse outcomes linked to the Troubles, particularly among those exposed to paramilitary and state violence. However, these studies have been limited by small sample sizes, narrow age groups, and a lack of robust, population-level data, leaving critical gaps in understanding the scale, nature, and impact of conflict-related ACEs.

Aim of the current study

This study aimed to address these gaps by conducting a nationally representative survey of adults in Northern Ireland to:

1. Estimate the prevalence of childhood exposure to traditional ACEs, as well as conflict-related adversities.
2. Examine the relationships between ACEs, conflict-related exposures, and outcomes in physical health, mental health, behavioural and educational outcomes.
3. Identify mitigating factors that buffer against the effects of ACEs, with a focus on community cohesion and support mechanisms.

Methods

The study utilised a stratified random probability survey to capture nationally representative data on ACE exposure among adults in Northern Ireland. A total of 1,200 participants, aged 18 and over, were recruited through random sampling of residential addresses, ensuring geographic and socio-economic representativeness. Data were collected via face-to-face, computer-assisted personal and self-interviewing methods, with participants providing information on childhood adversities, conflict-related exposures, and various health, behavioural, and social outcomes. This approach ensured a robust and representative sample for examining the prevalence and impacts of ACEs within Northern Ireland.

Key Findings

1. High Prevalence of ACEs and Conflict-Related Adversities:

- 60% of adults reported at least one ACE, and 17.6% experienced four or more ACEs (a critical threshold for elevated risk).
- 30% reported conflict-specific adversities, including witnessing violence (47.5%), receiving paramilitary threats (12.2%), and conflict-related bereavement (8.7%).
- ACEs and Troubles/conflict-related adversities were disproportionately concentrated in deprived communities, highlighting socio-economic inequities. For example, compared with 12.8% in the least 20% deprived areas, 24.4% of those in the top 20% most deprived areas reported experience 4+ ACEs.

2. Impacts on Childhood and Adult Outcomes:

- **Childhood**: Higher ACE exposure correlated with poorer educational outcomes, including increased school exclusions (9 times higher among those with 4+ ACEs) and special educational needs (4 times higher likelihood).
- **Adulthood**: Adults with 4+ ACEs were 5 times more likely to report chronic health issues, 14.8 times more likely to experience PTSD, and 9.6 times more likely to have a diagnosed mental health condition. Adults were also 12.4 times more likely to have experienced domestic violence as an adult, 19 times more likely to have experienced assault in the previous year, and 27.8 times more likely to have lived with someone who had been in prison.
- **Health-Harming Behaviours**: Elevated ACE exposure was associated with higher rates of excessive alcohol consumption (1.9 times), previous year illicit drug use (3 times), smoking (2.6 times), and reduced physical activity (2 times), all contributing to long-term health burdens.

3. Intergenerational and Community-Level Patterns:

- Parental ACE exposure predicted higher ACE prevalence among their children, emphasising the cyclical nature of trauma.
- Communities affected by poverty and conflict showed compounded risk, with conflict-specific adversities often layered onto other forms of deprivation.

4. Age and Gender Differences:

- Older age groups (45–64) reported higher rates of conflict-related adversities, reflecting direct experiences during the Troubles, while younger cohorts (18–24) were not immune to ongoing paramilitary violence even in post-conflict Northern Ireland.
- Gender differences included higher rates of sexual abuse among females and paramilitary threats among males.

5. **Mitigating the effects of ACEs:**
- Benevolent (positive) childhood experiences (BCEs) dampen the effects of ACEs
- Even among those who experience the highest levels of adversity, exposure to benevolent childhood experience can have an ameliorating effect over the long term. For example, the percentage of respondents with current depression reduces from 52.3% to 22.6% among the highest ACE group.

Policy Implications

The findings underscore the urgent need for targeted interventions to address ACEs, particularly in conflict-affected and deprived areas. Key recommendations include:

1. **Trauma-Informed Approaches**: Integrating trauma-informed care across education, health, and social services to address the long-term impacts of ACEs.

2. **Conflict-Sensitive Interventions**: Designing programs that account for the distinct nature of conflict-related adversities, including paramilitary violence and bereavement.

3. **Community and Economic Investment:** Addressing socio-economic inequities by investing in deprived communities to mitigate the compounded effects of deprivation and adversity.

4. **Intergenerational Focus:** Breaking the cycle of trauma through family-centred approaches that support both parents and children.

5. **Enhanced Data Collection:** Expanding research on conflict-related ACEs to inform global and local policies, ensuring that interventions are evidence-based and context-specific.

Conclusion:

This study highlights the significant burden of ACEs in Northern Ireland, shaped by both familial adversities and the legacy of conflict. By addressing these challenges through informed policy and practice, Northern Ireland has an opportunity to break cycles of adversity, promote resilience, and support future generations. The findings contribute to a growing global discourse on the importance of recognising and responding to ACEs in conflict-affected settings.

Introduction

Adverse Childhood Experiences (ACEs)

Childhood experiences, whether positive or adverse, can have lasting impacts. Adverse Childhood Experiences (ACEs) include physical and sexual abuse, poor family functioning, and violence exposure (Ports et al., 2020). ACEs can be experienced as physically and/or emotionally harmful, or even life threatening (Abate, Marshall, Sharp, and Venta, 2017), and when they are, they are some of the most commonly experienced stressful events among children (Kidman, et al., 2019; Agnew, 1992; 2013).

Much of the ACE literature has tended to focus on those experienced within the context of the family home, as this is where younger children experience the greatest level of harm (Felitti et al., 1998; Hughes et al., 2017). We also know that adversity is also experienced outside of the family home, and when the wider context of children's lives is characterised by violence and abuse, it is particularly harmful (Bellis et al., 2023). Indeed, the environment is central to the experience of adversity (Vaidya et al., 2024), and it is in part the deviation from environments that would normally be expected to be experienced that characterise an adverse childhood experience (McLaughlin, Weissman and Britan, 2019). In sum, they are the kind of experiences that children under the age of 18 are exposed to that are potentially traumatic, and that while experienced during childhood, a person often remembers as an adult (UNICEF, 2019). While definitions can vary across the literature (McLaughlin, Weissman and Britan, 2019), Ports et al. (2020:18) describe ACEs as:

> ***…a term used to refer to a collection of potentially traumatic exposures that individuals may experience during the childhood ages 0-18 years. Exposure to ACEs is related to increased risk for a host of negative health outcomes and can limit life opportunities, including educational attainment and employment, which can have far reaching impacts beyond a single time-period, person or generation. The wide-ranging health and social consequences of ACEs underscores the importance of preventing ACEs before they happen.***

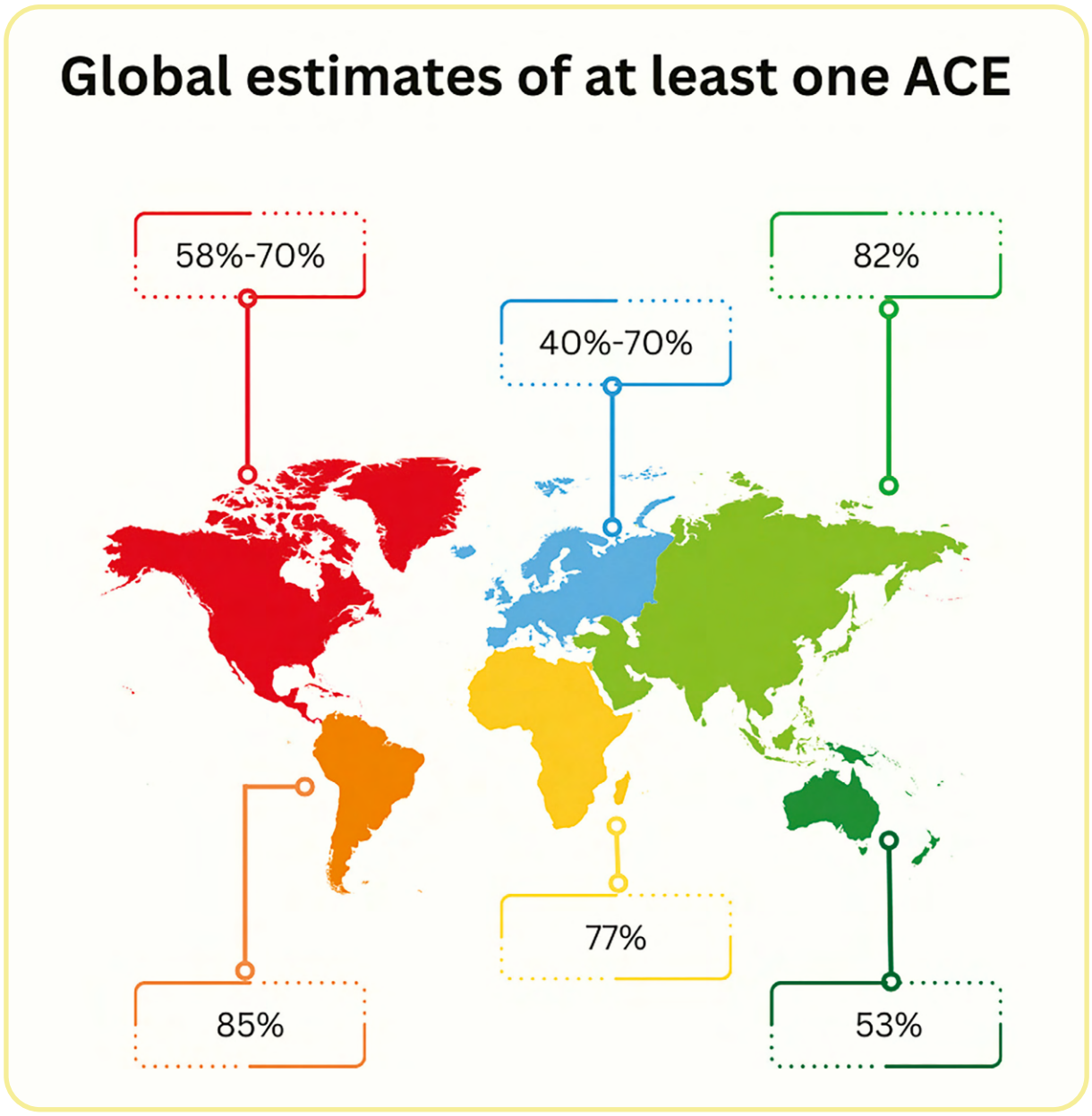


Figure 1: Global ACE prevalence

Since the late 1990s, there has been growing interest in the impact of early adversity on long-term outcomes (Bellis et al., 2014). The concept of ACEs, first coined by Felitti et al. (1998), has provided a shared language to better understand and measure, with greater specificity, exposure of difficult life events during childhood within a population (Madigan et al., 2023), and their enduring impact (Anda et al., 2006). Studies have consistently demonstrated a clear link between high levels of exposure to childhood adversity and poor physical health, mental health, behavioural and economic outcomes in adulthood (Davidson et al., 2010). That is, exposure to adversity, and exposure in greater doses, is predictive of more negative outcomes throughout childhood and even into adulthood. Indeed, there is evidence that this even extends across generations (Ng et al., 2013; (Bellis et al., 2014; Ford et al., 2024).

Prevalence of ACEs: population estimates

What the ACEs research to date has illustrated, is just how common adversity is within society. In one of the largest synthesis of studies to date, Madigan et al. (2023) pooled 206 samples with a combined population of more than 500,000 individuals to estimate prevalence. They found that on average, 41% of the international population had experienced at least one ACE. In their review of past-year violence against children, Hillis et al. (2016) used 38 reports to pool data for 96 counties worldwide. They found that globally, a conservative estimate is that excluding moderate forms of violence such as spanking, 1 billion children experience violence. Prevalence rates range from around half of the youth population in North America (Kessler et al., 2010), to 31% in Europe among those in the later teens (see Table 1). Since 2010, the WHO has invested in, and supported 10 European counties to capture prevalence of ACEs among adult students (18-25). With a combined sample of more than 14,000 individuals, almost half (46.2%) of the sample had experienced at least one ACE, and 5.6% had experienced more than four (Hughes et al., 2019). In raw numbers, the evidence suggests that over 55 million children in the European region are affected by violence and abuse (WHO, 2015).

Table 1: Minimum affected by violence (Hillis et al. 2016)

	2-14	15-17
Africa	50	51
Asia	68	48
Latin America	34	33
Europe	8	31
North America	56	58
Oceania	-	40

Estimates, however, vary between counties with figures ranging from 40% (Bellis et al., 2023) and 70% of the European population; between 58% and 70% of the North American population (Bhargay and Swords, 2023); 85% in the South American context (Soares et al., 2016); 77% in the African context (Cluver et al., 2015); and 82% in parts of Asia (Ahmad Dar et al., 2022) (see Table 2). The difference in these figures is not surprising. Indeed, the findings are not directly comparable (Ports, 2020). Different studies use different methods and sample different populations. Some capture data among children, others among young adults, and others capture data among adults. Some of them capture purposive samples (like school/college classes), and their selection may not be representative using this approach. Indeed, in their review, Carlson et al. (2020) found that less than one-fifth (16%) outside of the US were representative of the population. Another reason is that the numbers involved are not sufficient to estimate national prevalence (Bellis et al., 2023).

Despite their limitations, they do provide an insight into the scale of harm experienced during childhood and nod to its potential impact. Nevertheless, they all tend to illustrate an important point. Exposure to adversity can be harmful and using high-quality data, we can estimate just how harmful these experiences can be and in what ways they impact on people's lives.

Table 2: Global prevalence of ACE groups

Authors	Year	Population	Country	Min. 1 ACE	4+ ACE
Ahmad Dar et al	2022	Representative-Young adults	Kashmir	82.2	54
Astridge et al	2013	Systematic review-Children	Global		39.6
Bellis et al	2014	Representative- Adults	England	46.4	8.3
Carlson et al	2020	Systematic review- Children	Global	41-97	
Cluver et al	2015	Representative-Children	South Africa	77	20
Hughes et al	2019	Young adults	EU	46.2	5.6
Madigan et al	2023	Meta-analysis-Adults	Global	60.1(EU estimate 53)	16.1 (EU estimate 5.6)
Marryat et al	2019	Representative- Children	Scotland	65	3
Merick et al	2018	Representative- Adults	USA	77	16
Pace et al	2022	Systematic review -Adults	Europe	65.2	
Soares et al	2016	Representative-Children	Brazil	85	5
UNICEF	2019	Representative Adults	Serbia	70	40
Velminsky et al	2020	Representative-Young adults	Czechia	62.2	9.9
Walsh et al	2019	Representative- Children	New Zealand	53	3

Exposure and impact

Another interesting observation from ACEs studies is that, across studies and contexts, there is a gradient of impact, the more adversities the higher the risk of negative outcomes, and that adversities tends to co-occur. That is, if you experienced one type of adversity, you are at much greater risk of also experiencing another.

Dong et al (2004) took the original data compiled by Felitti and colleagues (1998) and quantified this. They estimated that 87% of those who reported exposure to one form of adversity would report being exposed to another. This idea of co-occurring adversity, or poly-victimisation (Finkelhor et al., 2009), also captures a cumulative burden of wider health and social issues (Lewis, 2019). For instance, compared with those who report no ACEs, children with adversity are twice as likely to develop diagnosable mental health issues (McLaughlin, Weissman and Britan, 2019). In an English adult population study, Bellis et al. (2014) found that 13.6% of poor diet and more than half (59%) of heroin or crack cocaine use was related to exposure to adversity. So, while ACEs do not account for all complex issues in their entirety, their importance for informing and delivering public services is clear. It is estimated that one third of all mental health disorders are attributable to ACEs (Kessler et al., 2010) and having been exposed to four or more ACEs appears to be particularly salient when predicting outcomes at a population level. For instance, Bellis et al. (2014) modelled the risk of four or more ACEs compared with none and found that this group were more than seven times more likely to be the victim of violence (in the past year), seven times more likely to be the perpetrators of violence (in the past year) and eleven times more likely to ever have been in custody. Thus, understanding exposure, and who is likely to have been exposed to greater levels of ACEs should be a significant policy priority.

Figure 2: Odds ratios of outcome among individuals with 4+ ACEs compared with 0 ACES (Bellis et al., 2023)

Globally, a meta-analysis of more than 200 studies involving 500,000, mainly American adults, found that 16% had experienced 4 or more ACEs (Madigan et al., 2023), and this was associated with particularly negative outcomes.

While the prevalence figure is significantly lower in other places such as England (9%, Bellis et al., 2014), the risk for this sub-group is nonetheless significant. Hughes et al. (2017) reported that those reporting four or more ACEs were: up to three times more likely to report moderate smoking, heavy alcohol use, poor self-rated health, cancer, heart disease, and respiratory disease; up to six times more likely to report sexual risk taking, mental ill health, and problematic alcohol use; and more than seven times more likely to report problematic drug use and interpersonal and self-directed violence. Similarly, an umbrella review of systematic reviews and meta-analyses (Sahle et al., 2021) found ACEs to be associated with increased risk of anxiety disorders, internalising disorders depression and suicidality.

This elevated exposure affects a significant minority of the population, and given the potential cross-cutting impact, it is important to know where exposure clusters. In two representative studies of UK adults in England (Bellis et al., 2014) and in Wales (Public Health Wales NHS Trust, 2015), 9% of the English population and 12% of the Welsh population had experienced four or more ACEs. In both cases, there was a significant and positive correlation between ACE frequency and negative outcomes.

It is important to note that while the research shows that adversity cuts across socio-economic, religious and political boundaries, it is in the poorest communities that the burden is experienced most (Bellis et al., 2023).

The increased interest in understanding ACEs has, in part, been driven by increased understanding of their impact on individuals and communities (Hughes et al., 2019). Despite being committed to providing the best start for children in Northern Ireland (Department of Education, 2021), the reality is that many live in harmful contexts, and it is within these contexts that futures are disrupted, and potential is not realised. As mentioned, there is also the gradient or dose-response effect, where the more types of adversity experienced, the greater the impact. For instance, Hughes et al. (2019) found that in their review of more than 14,000 young adults across Europe, those with more than four ACEs were twice as likely to smoke, four times more likely to report problem substance use, six times more likely to report therapy, and seventeen times more likely to report attempting suicide.

Thus, the interesting observation is not so much that experiencing difficulties during childhood is almost ubiquitous, but that these difficulties cluster, and for those groups within which they cluster, exposure is associated with negative impacts across number of areas of life, such as altered patterns of socio-emotional and behavioural functioning (Dube, 2019; McLaughlin, Weissman and Britan, 2019; Vaidya et al., 2024) which themselves are implicated in health and justice-related outcomes (Ports et al., 2020). Adversity, even single events, can be experienced cyclically. In other words, when individuals experience even one form of adversity, they can be victims of this over and over again.

Factors that influence ACE exposure and impact

In their review of 10 European studies, Hughes et al. (2019) found that there was a significant gender difference in reported exposure to ACEs. This was also observed in a state-of-the-art review of literature by Bellis and colleagues (2024). They found that while emotional abuse was more commonly reported by young adult females across thirteen countries in the European region, males were more likely to experience physical abuse. This implies (with some degree of confidence) that both exposure and impact are at least partially influenced by social norms and cultural context. It also highlights possible prevention strategies.

Living in areas of poverty and material deprivation is association with higher ACEs and associated poorer life outcomes (Bellis et al., 2023). This does not mean that those living in less deprived areas avoid all adversity, neither does it mean that all children living in more deprived areas experience significant adversity, but there is an association. For instance, in the English and Welsh context, those in the most deprived quintile were significantly more likely to have reported exposure to four or more ACE types than all other groups (1, 2, or 3 ACEs). A notable exception to the deprivation-adversity association was observed by UNICEF (2019) in Serbia. This is interesting as it is one of the few population-based studies in the context of conflict affected areas.

ACEs in conflict affected areas

Exposure to all forms of violence is associated with long term and negative outcomes (Cronholm et al., 2015). It is associated with reduced mental health and wellbeing, as well as increased violence and aggression (Fowler et al., 2009). Despite more than 500 million children growing up in areas of political conflict and violence (UNICEF, 2009), there is a notable lack of reliable estimates in conflict-affected areas. This is in part because the original 10-item ACE measure focused on intra-familial adversity, largely ignoring the wider range of harms that occur outside of the home and become more prevalent as children grow, and indeed that co-occur within conflict affected areas. As noted by Carlson et al. (2020) in their review, there is a need to pay more specific attention to these conflict-affected areas. As can be seen in Table 3, there are not many studies that have explored ACEs in conflict-affected areas, and even fewer that used representative samples to estimate population-level prevalence. Of the seven studies captured here, three are wider, global reviews of evidence (Carlson et al., 2019; Hughes, 2019; Pace et al, 2022). Three others (Cluver et al., 2015; Velminsky et al., 2020; Ahmad Dar et al., 2022), while representative, are only representative of young adults. Only one population study of adults has estimated population prevalence of ACEs within a conflict affected area (Serbia) (UNICEF, 2019).

Table 3: Prevalence of ACEs in conflict-affected areas

Authors	Year	Population	Country	Age	At least 1 ACE	4+ ACEs	Conflict area
Ahmad Dar et al	2022	Representative-Young adults	Kashmir	18-25	82.2	54	Yes
Bunting et al	2020	Children	Northern Ireland	11-19	47.5	-	Yes
Carlson et al	2020	Systematic review- Children	Global	5-18	41-97	-	Partially
Cluver et al	2015	Representative-Children	South Africa	10-18	77	20	Yes
Hughes et al	2019	Young adults	10 European countries	18-25	39.2-52.8	3-7	Partially
Pace et al	2022	Systematic review -Adults	Europe	18+	65.2	-	Partially
UNICEF	2019	Representative Adults	Serbia	18+	70	40	Yes
Velminsky et al	2020	Representative-Young adults	Czechia	18-26	62.2	9.9	Yes

Despite being located in conflict-affected areas, the studies rarely examine exposure to police or paramilitary violence. Additionally, few studies specifically capture exposure to collective violence, which can include spontaneous large group violence, such as on an interface between communities or riots between large groups of individuals and often involving the police.

Measuring ACE in conflict affected areas

The original ACE measure

Felitti et al. (1998) captured three broad domains of adversity (childhood abuse; childhood neglect; household dysfunction), operationalised via eight experiences during the first wave and then ten categories of adversity in the second wave (Ports et al., 2020). While the original Kaiser Permanente study included 28 items, it is the 10-item brief screener that is most commonly used. Adversities captured include:

1. Physical abuse
2. Emotional abuse
3. Sexual abuse
4. Physical neglect
5. Emotional neglect
6. Substance-use by a family member
7. Mental illness involving a family member
8. Criminal behaviour by a family member
9. Mother treated violently in the home
10. Divorce/separation

In the original study, responses to the categories were answered affirmatively or negatively using binary coding (yes/no). Across the studies that followed, the prevailing approach was to tally the number of different types of ACEs that respondents had been exposed to, with higher rates of exposure associated with worse outcomes (McLaughlin, Weissman and Britan, 2019). This remains largely typical across a swathe of ACEs studies. While the studies that used the traditional ACE screener were instructive, they were also limited. Limited in the sense that they focused almost exclusively on intra-familial violence and abuse, neglecting to capture the range of other adversities that occur outside of the home and in the community (Ports, 2020). This is particularly the case in conflict-affected areas where serious community, collective and paramilitary violence is common.

The ACE-IQ was developed by the World Health Association to address these challenges and provided a basis on which to expand our understanding of ACE exposure within conflict-affected areas. Specifically, the measure expanded upon the original ACE questionnaire to assess the occurrence of ACEs in adults to include: multiple types of child abuse; neglect; violence between parents or caregivers; other kinds of serious household dysfunction, such as alcohol and substance abuse; and peer violence. Importantly, the measure also sought to capture other extra-familial adversities relevant to conflict-affected areas, namely, community and collective violence. Understanding the prevalence and impact of ACEs in conflict-affected areas is important given the distinctive environment compared with non-conflict affected areas.

To date, ACE-IQ has been mainly administered in Asian and African contexts, with few studies using the ACE-IQ to provide estimates of this broader range of adverse experiences in either the USA, UK or Europe (Pace et al. 2022), particularly in conflict affected areas. Indeed, globally, there is a paucity of population-level ACEs studies in areas affected by conflict. Those that are available are either not representative samples and/or focus on a narrow age group (e.g., Africa (Cluver et al., 2015: 10-18); Middle East (Khamis et al., 2005: 12-16; Karam et al., 2019: 7-18); Asia (Ahmad Dar et al., 2022: 18-25). In the Serbian context, UNICEF (2019) found that 70% had experienced at least one ACE, with specific adversities ranging from exposure to sexual abuse 2.8% through to community violence 37%.

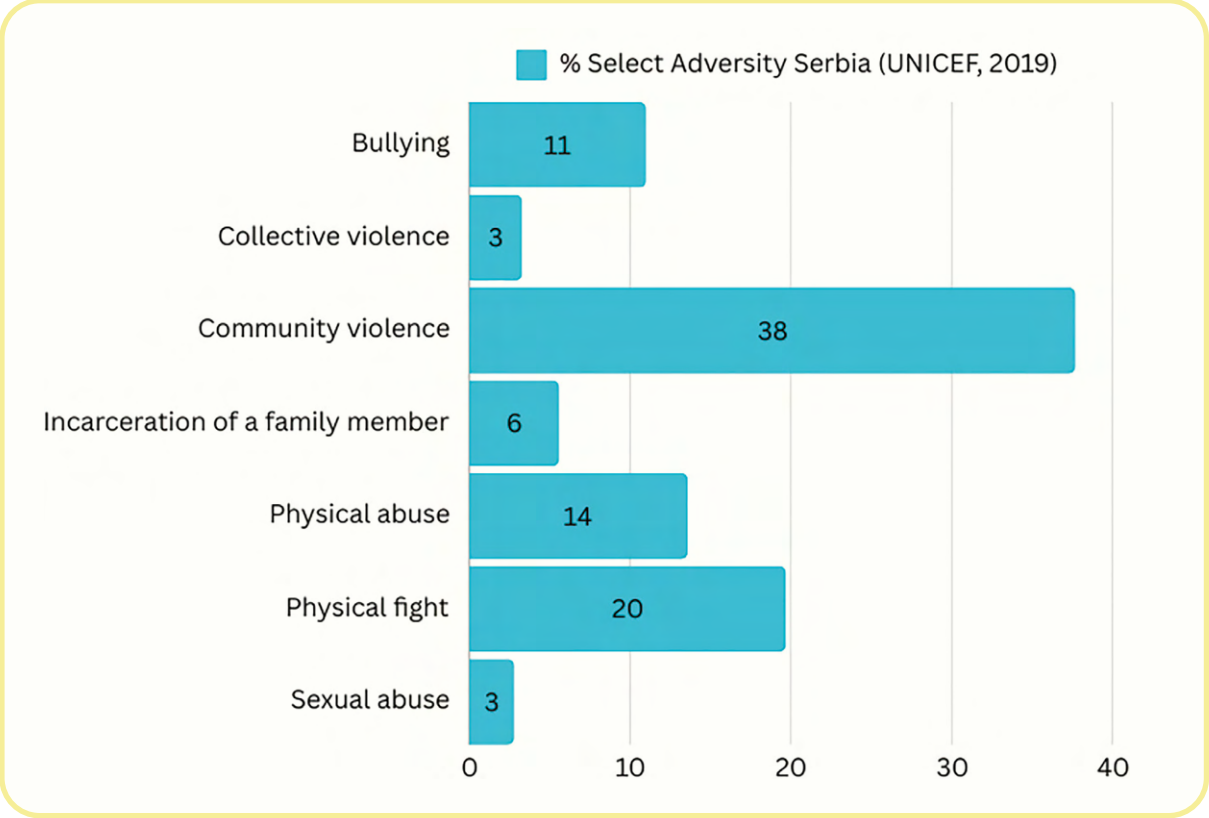


Figure 3: Prevalence of ACEs (Serbia)

To date, estimating the prevalence and impact of ACEs within conflict-affected areas remains limited, and there has been no representative population-based study documenting the prevalence of childhood adversity and exposure to a range of violent experiences amongst a representative sample of adults in the NI population.

Despite a core objective of ACE-IQ to understand the prevalence of a wider set of adversities, including those outside of the home and non-familial violence, the most comprehensive review undertaken so far as found that the majority of studies fail to capture serious community violence (Pace et al., 2022).

ACEs in Northern Ireland

The legacy of the Troubles, marked by 4,000 deaths and 50,000 injuries over 30 years, continues to shape Northern Ireland's ACE landscape. Conflict-related adversities, such as paramilitary threats and witnessing violence, remain prevalent (Daly, 1999, Fay Morrisey and Smyth, 1997; Bunting et al., 2013). Some of the best estimates quantify exposure to bereavement and injury at 30% (NISRA, 2010), with several high-quality reports documenting the elevated rates of stress-related symptoms (sf. Duffy, Gillespie and Clark, 2007; Bunting et al., 2020).

In one of the most comprehensive mental health and wellbeing studies undertaken in NI, Bunting et al. (2020) found that while the population estimate was significantly lower than had been estimated by previous studies (e.g., Bunting et al., 2012), the risk was significantly higher for those who had endorsed the items, 'being around war' and 'attacked, stabbed, shot at or robbed by threat', illustrating the distinctly adverse environment and additive exposure that may contribute to negative outcomes in conflict-affected areas.

Although a small number of studies (sf. Bunting et al., 2010; Bunting et al., 2020) explored conflict-related trauma, the published data has not routinely captured the specific NI context, the types of adversity experienced during childhood, or sufficiently differentiating between paramilitary and security service-related violence. What the 2020 study did imply, was that those who had experienced conflict-related adversity were significantly more likely to develop any anxiety, any mood, or any substance related disorder. In a later seminal report, Bunting et al. (2022) outlined the key findings of a population study on wellbeing using random probability design. The authors found that more than one-in-ten of 11–16-year-olds (11%) of the NI population were at risk of emotional or behavioural problems and that despite the legacy of conflict, this was comparable to other jurisdictions, such as England. Thus, the evidence base around adversity, trauma and the wider impact is not well developed and of the paucity of evidence available, much of it is contradictory.

Whilst the ACEs tool has demonstrable value across different geographies and cultures and allows for a useful process of comparison on data in Northern Ireland, care is required to capture the impact and meaning of traumas associated with low-level conflict and inter-communal violence. The impact of the "Troubles" (or "conflict") on the mental and physical health of the population of Northern Ireland is not well understood. A full understanding of the nature of the violence, its antecedents and causes, and its societal consequences, is essential if we are to fully grasp the meaning of the individualised experience of trauma for each victim and survivor. It is probable that the combination of widespread violence, the prolonged breakdown of state control in some areas and cross generational deprivation, resulted in an environment where the ACES were more prevalent than in other contexts.

From the limited data available from Northern Ireland, Bunting et al. (2020) illustrated that 12.3% of parents, primarily mothers, were found to have experienced 4+ ACEs, while 52.2% of 11–19-year-olds reported 0 ACEs, 33.2% 1 ACE, 8.6% 2 ACEs and 5.7% 3+ ACEs. High levels of adversity, being in receipt of benefits, having poor family support, being affected by the Troubles, and having a child with conduct problems and poor health, were all identified as independent risk factors for increased parental mental health problems in Northern Ireland (Grant et al., 2023). Likewise, and in keeping with the extant literature, increased ACE exposure amongst young people was associated with higher levels of mood and anxiety disorders, self-harm and suicidal ideation (Bunting et al., 2022).

Using a broader range of trauma exposure than the traditional ten ACEs, latent class analysis (LCA) also identify three typologies that were most representative of the trauma experience of NI youth; 'low-exposure', 'moderate-exposure: community-victimisation and 'high-exposure: sexual-trauma' (Redican et al., 2023).

Interpersonal adversities, and in particular violent ones, appear to be more consistently related to subsequent negative outcomes, such as violent offending (Widom, 1989; Baglivio et al., 2021). In the NI context, Walsh, Doherty and Best (2021) found that those who had experienced violent victimisation were 9 times more likely that those who had not to be convicted of a violent offence, and that those who had been victims of paramilitary-related violence were more likely to be convicted of an indictable-only offence. This is unsurprising, given that exposure to violence has been demonstrated to increase the risk of a range of psycho-social outcomes (Fowler et al., 2009) with younger people appearing to be particularly vulnerable to exposure to violence and its outcomes (Hillis et al., 2016). There is, however, a high degree of variability in the risk of exposure both between and within communities (Wilson & Chermak, 2011; YEF, 2022). Equally, whilst children directly targeted by violence in the community experience the greatest and most devastating developmental consequences, living in communities where rates of violence are elevated can also contribute towards the onset of a wider range of experiences, including trauma and stress-related disorders, and mood and anxiety disorders, all of which have been implicated in self-directed and interpersonal violence (Fowler et al., 2009). Indeed, some trauma-related symptoms are not always identified as such particularly among young people (Duffy et al., 2021).

Why understand ACEs?

ACEs are associated with elevated rates of mental health conditions, including PTSD. In their study of more than 4,000 English speaking adults in Northern Ireland, Bunting et al. (2013) found that 12-month prevalence of PTSD was 5.1%. Eradicating childhood adversity is associated with significant population levels changes in clinical mental health outcomes (Kessler et al., 2018). For instance, it could lead to more than a 20% reduction in mood-related problems and almost a third of a reduction in anxiety related issues (Bellis et al., 2023). ACEs are also associated with higher rates of behavioural problems in the community and in schools, where higher rates of punitive responses in the form of temporary or permanent exclusions are observed (Stewart-Tufescu et al., 2022). These issues have ripple effects, as children excluded from school are significantly more likely to be at risk of criminality in the community (BIT, 2023). Eradicating ACEs could result in more than two-fifths reduction in behavioural disorders. Preventing exposure and/or impact of ACEs could similarly ameliorate the burden of these challenges. While earlier interventions are well-established in physical health, this is less the case with regard to mental health and trauma (Bunting et al., 2022).

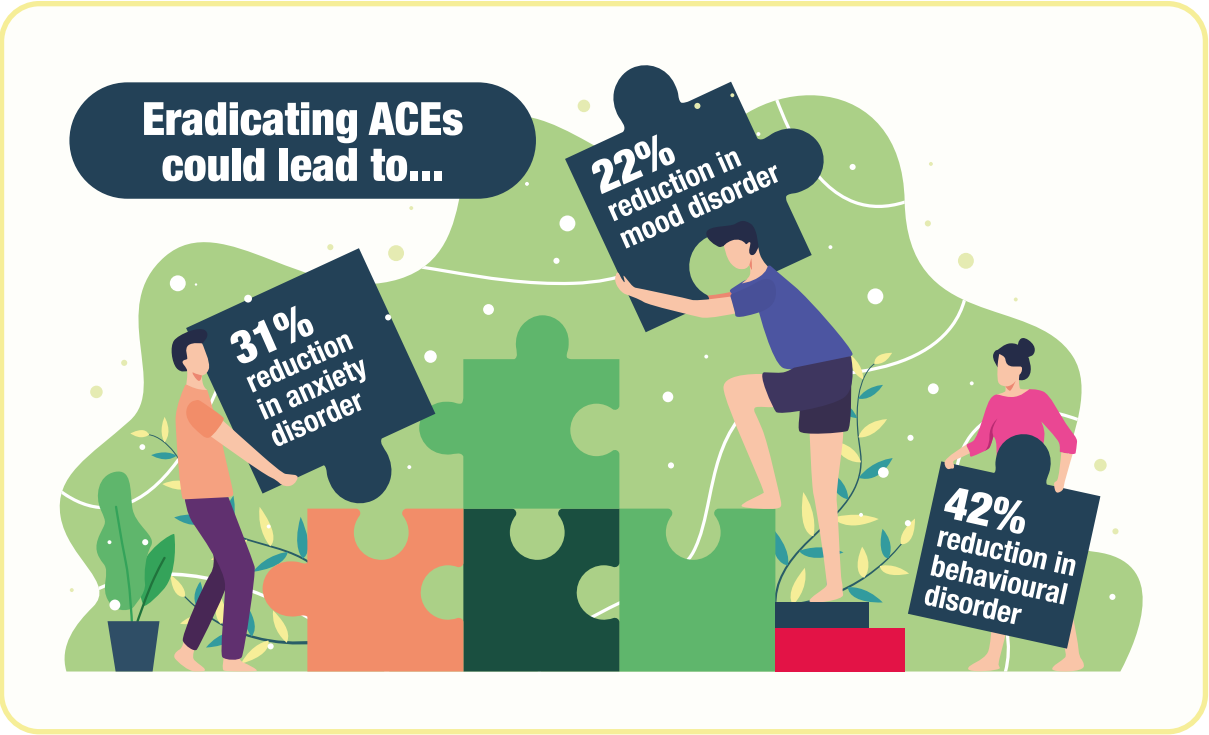


Figure 4: Potential benefits of eradicating ACEs

Policy context for addressing ACEs

Sustainable Development Goals (2030)

The international community has signed up to the 17 global development goals[1]. Goals 16.1 and 16.2 specifically refer to the objective of ending all forms of violence and violence against children by 2030. In order to achieve this target, there is a need to understand how violence affects the population in different ways, particularly in areas affected by conflict, and agree on methods to accelerate progress towards their attainment (Sheer et al., 2020).

UNCRC

Protecting children from all forms of violence is a fundamental right (UNICEF, 2022). The UNCRC deals with violent victimisation across six Articles (*Article 6: Right to life, survival and development; Article 19 Right to protection from all forms of Violence; Article 33 Protection from dangerous drugs and from being involved in making or selling these drugs; Articles 34 and 36 Exploitation and; Article 39 Rehabilitation of child victims.*

1 For more information on the Global Development Goals, see: www.sdgs.un.org/goals

'Doing what matters most': Draft Programme for Government (PfG) (2024=2027)

The draft NI PfG focuses on improving societal wellbeing through whole-system responses to inequality and early adversity. Specifically, the draft PfG recognises the long-term impact of early adversity, violent victimisation and trauma, focusing on ensuring *'the right support from the right people at the time in the right place'*. This requires understanding in what ways people are affected by adversity, where it clusters and how best to mitigate its effects.

Children and Young People's Strategy (2030)

Published by Department for Education (NI) in 2021, the overall aim of the Strategy is to improve the wellbeing of all children and young people in NI, thus providing a statutory framework for earlier intervention. It is temporally aligned to the target for attaining the SDGs. A key thematic area is living in safety and stability-something intrinsically connected to ACEs and the long-term effects of adversity.

Mental Health Strategy (NI) (2021-2031)

Published by the Department of Health in 2021, the primary aim of the Strategy is to promote health and wellbeing through integrated and accessible services. The impact of ACEs is globally now well-established. The specific impact on mental health in particular is critical. The Strategy has specific focus on promotion and prevention, through awareness raising and increased understanding of where and how mental health affects the population, and the social determinants that influence it. By understanding where ACEs cluster and preventing exposure in the first place, could have a significant impact on the long-term mental health of the NI population.

'Making Life Better'-Strategic Framework for Public Health (2013-2023)

The Framework, published by the Department for Health, aims to improve health and wellbeing across all groups. There is convincing evidence that early adversity is associated with poorer health and wellbeing outcomes across the life course. Interrupting these early experiences, mitigating their impact and/or providing support to those most affected, could have an enduring public health impact.

Benevolent Childhood Experiences (BCEs)

The global evidence illustrates that ACE exposure is potentially harmful across a range of areas; however, the data also illustrates that while associated with negative outcomes, greater exposure to adversity is not always predictive of such outcomes. Indeed, there has been criticism that the ACE literature has focused too much on the risks associated with exposure and less on the factors that protect children from the impact of those experiences (Bunting et al., 2023). It is unlikely that all adversity could be eliminated from children's lives, in which case, greater focus should be paid to the factors that can mitigate against their negative effects (Bhargay and Sword, 2023). Benevolent Childhood Experiences (BCEs) (Narayan et al., 2018) are characterised by safety and security, positive self-perceptions and social support.

They are benevolent childhood experiences that could, even in the presence of adversity, protect children from harm (Zimmerman, 2013). For instance, in a study of a targeted youth work programme for at risk youth (10-25) living in troubles/conflict-affected Northern Ireland, Walsh (2023) found that after controlling for violent victimisation, social support operated through psychological stress to influence the risk of physical violence. The argument made by the author is that social support may buffer against the risk associated with living in areas of elevated violence and specialist youth work approaches provide an opportunity to enhance this.

Despite growing interest in the protective and ameliorating role of benevolent childhood experiences, there are contradictions across the evidence. For instance, Doom et al. (2021) found no evidence of BCEs moderating the effect of ACEs on mental health symptoms among college students, and a study by Bunting et al. (2023) using nationally representative data of 11-19 year old youth from Northern Ireland found that accounting for BCEs, ACEs still retained a large effect on child outcomes. Conversely, Crandall et al. (2019) found that BCEs neutralised the negative effects of ACEs. One explanation proposed by Crandall et al (2020) and Bunting et al. (2023) is that BCEs provide 'reserve capacity' which, rather than resulting in immediate change, contributes to positives effects later in life. From an empirical, policy and practice perspective, unpacking the factors that mitigate against the effects of childhood ACEs and improve public health is an important goal.

Aim of the current study

The aim of the current study was to conduct a nationally representative survey of the adult population in conflict-affected Northern Ireland in order to provide reliable prevalence estimates of exposure to childhood adversity and exposure to violence. Specifically, the study had the following three objectives:

1. To identify the prevalence of exposure to different types of child abuse and neglect, violence between parents/caregivers and other type of household dysfunction, exposure to peer, community and paramilitary violence and abuse, and exposure to troubles-related adversity.

2. To examine the relationship between ACEs, violence-related exposure, and physical health, mental health, and behavioural outcomes, controlling for relevant individual and community characteristics.

3. To identify the factors that mitigate against the deleterious effects of ACEs and violence.

Methods

The research team

The study was undertaken by Queen's University Belfast, Ulster University, Impact Research Centre and the Northern Ireland Regional Trauma Network. Perceptive Insight was commissioned to undertake data collection.

Design and setting

A stratified random probability survey was implemented, allowing for comparability with other research in this area (e.g., Bellis et al., 2014). 1,200 adults living in Northern Ireland, aged 18+ were interviewed in their own home using a mixture of computer assisted personal and self-completion methods. A recent meta-analysis of the prevalence of ACEs (Madigan et al., 2023) reported 24.8% of the population as having experienced 3 or more ACEs. A power analysis was conducted to determine the optimal sample size required to detect this. With a true population proportion of 0.25, desired precision 0.025 (this equates to 95% confidence intervals), and confidence level of 0.95, a minimum sample size of N=1153 was required. Therefore, a target sample size of 1,200 was identified.

Recruitment

The Pointer Database, a postcode register of all households in Northern Ireland, was used as the sampling frame. Addresses were excluded if they were recorded as being non-domestic; under construction; or had a trading or business name.

The remaining residential addresses were linked to Northern Ireland's 2017 Multiple Deprivation Measure data (NI Statistics and Research Agency, 2017) and stratified by deprivation decile and county to ensure even geographical distribution and representation of both affluent and less affluent neighbourhoods. Based on an estimated minimum response rate of 40%, and taking into account that approximately 5 to 7% of the selected addresses would be 'ineligible' (due to vacancy/dereliction/holiday homes etc.), 3,600 addresses were randomly selected. Of these, 1,200 were the main sample, 1,200 were the reserve sample, and 1,200 were a contingency sample.

Data were collected by a reputable social research company with considerable experience in similar research. All sampled households were sent a letter providing study information and the opportunity to opt out prior to the surveyor visiting. The information sheet contained information on the background and purpose of the survey, as well as details of how the data would be collected.

At least three attempted visits at differing days/times were made before an address was removed, with sampling completed once the target sample size was reached.

Inclusion criteria for participation included: being resident in the selected address; aged over 18 years; English speaking; and having the cognitive ability to participate in a face-to-face interview.

Data collection

Surveyors explained the study's voluntary and anonymous nature at each address, offering opt-out opportunities. If more than one person in the household was eligible to participate, then the person with the next birthday was selected. Data were collected using computer-assisted personal interviewing (CAPI) with the majority of information being collected via self-completion. Each interview took on average 23 minutes to complete.

Measures

Below is a summary of the standardised instruments included in the survey questionnaire. Further details and the full survey instrument are located in the appendices (see Appendix 1). These were informed by previous ACE studies (sf. Bellis et al., 2014) as well as leveraging the opportunity to explore NI specific adversities within the context of conflict and estimate prevalence among the NI adult population.

ACE exposure

ACE-IQ – this is a measure developed by the WHO (2011) to provide professionals with a standardised way of capturing adversity on a global basis and to study the implications of exposure (Pace et al., 2022). Thirteen categories of adversity across four domains (abuse; parents; family dysfunction; extra-familial violence) are recorded (Mace et al., 2022). Responses can be dichotomised with each item scored 1 for an affirmative response and 0 for a negative response or cumulatively scored. The ACE-IQ has demonstrated satisfactory internal consistency; concurrent validity with the CTQ questionnaire in a sample of prisoners in Nigeria (Kazeem, 2015); a good test-retest reliability (0.90) in a sample of young adults in Hong Kong (Ho et al., 2019); a moderate predictive validity in a sample of adolescents living in rural Malawi; with individuals diagnosed with anxiety and depressive disorders (Kidman et al., 2019; van der Feltz-Cornelis et al., 2019). The ACE-IQ has been found to be a reliable and valid measure with strong internal reliability (a=.85), convergent validity (a=.85) and predictive validity (R^2= .12) (Christoforou and Ferreira, 2020). A number of items were adapted for the NI context. For example, QF8 mirrors the WHO-IQ with the addition of paramilitaries as a potential source of higher-harm and collective violence, and G1-G3 was transformed from 'witness' to experiencing violence. Combined, these additional items provide insight into direct exposure to violence (self injured), indirect exposure (witnessing violence) and paramilitary threat.

Troubles related trauma: 5 items taken from the NICOLA study e.g., '*have you ever experienced a traumatic event related to the troubles?'* Yes/No

Participant characteristics

Demographics: demographic data (e.g., age, sex, religion, ethnicity, education level, employment status, family structure, marital status, sexual identity) are taken from the NI Census items. Area level deprivation is taken from postcode. Income level is taken from CSRI.

The Client Service Receipt Inventory (CSRI)- This is a tool used to collect information on the whole range of UK services and has been reported in more than 500 studies. Several items are taken from the CSRI for documenting service use. These items include hospital, emergency department, and GP usage.

Outcomes

ICD-11 PTSD and CPTSD: The International Trauma Questionnaire: The ITQ (ITQ; Cloitre et al., 2018) is a self-report measure designed to capture all elements of an ICD-11 PTSD and CPTSD diagnosis. The ITQ first assesses a person's most distressing traumatic event, and how long ago the event occurred. There are six items measuring the three PTSD symptom clusters (Re, Av and Th) and six items measuring the three DSO symptom clusters (AD, NSC, DR). Three questions enquire about the extent to which the PTSD and DSO symptoms, respectively, have affected relationships, work and other important domains of functioning. Participants rate how often they have been bothered by each of the symptoms in the past month using a five-point Likert scale ranging from 'Not at all' (0) to 'Extremely' (4). To satisfy the criteria for a diagnosis of PTSD, one of two items from each PTSD symptom cluster and at least one functional impairment item must be endorsed (endorsement is based on a Likert score of ≥ 2 (i.e., 'Moderately'). To qualify for diagnosis of CPTSD, criteria for PTSD must be satisfied in addition to endorsement of one of two items from each DSO symptom cluster and at least one functional impairment item associated with DSO symptoms (endorsement is Likert score ≥ 2). An individual can receive a diagnosis of PTSD or CPTSD, but not both. Cronbach's alpha for the PTSD sub-scales in the current study were excellent.

The Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS) – This is the short 7-item version of the Warwick Edinburgh Mental Wellbeing Scale measure of mental wellbeing suitable for adults in the general population (Ng Fat et al., 2017) that was used in the Bellis et al. (2014) study. Scores range from 7 to 35 with higher scores indicating more positive mental wellbeing. The measure has shown high internal consistency and a positive correlation with convergent constructs in the UK (Ng Fat et al., 2017), Danish (Koushede et al., 2019) and Swedish (Haver et al., 2015) general population.

Anxiety and depression symptoms: The Patient Health Questionnaire-4: The PHQ-4 (Kroenke et al., 2009) was used as a concurrent measure of anxiety and depression symptoms. The PHQ-4 includes the two core items measuring depression symptoms from the PHQ-9 and the two core items measuring generalized anxiety symptoms from the GAD-7. As with the parent scales, the PHQ-4 includes the stem question: 'Over the last 2 weeks, how often have you been bothered by the following problems?" A four-point Likert response scale is used where 0 = 'not at all', 1 = 'several days', 2 = 'more than half the days', and 3 = 'nearly every day', and possible scores range from 0-12. Previous research has shown that the PHQ-4 produces reliable and valid scores in general population samples (e.g., Löwe et al., 2010), and the internal reliability of the scale scores in this sample (α = .82) was excellent.

Diagnosed Health Problems - ACE prevalence survey covering any chronic illness, hospitalisation during childhood, and the major disease categories (respiratory disease; cancer; diabetes type 2; cardiovascular disease (CVD); stroke and liver/ digestive disease). Individuals were asked to report if they had ever been diagnosed with each condition by a medical professional. Questions are derived from the Bellis et al. (2014) and Doherty & Sims (2023).

Health Harming Behaviours – questions taken from the Bellis et al. (2014) ACEs study and Centre for Disease Control and Prevention (CDC) survey covering: unintended adolescent pregnancy, early sexual initiation (<16 years of age), smoking, drug use, poor diet, physical activity/sedentary behaviour, violence perpetration, violence victimisation and incarceration.

Problem Substance use is taken from a combination of substances listed in the DUDIT screening tool (Berman et al., 2005) and the NI Wellbeing survey (Bunting et al., 2020).

Covariates

Oslo Social Support Scale (OSSS-3) (Kocalevent et al., 2013): The OSSS-3 is a short, self-report scale of social support for use in the general population. With a Cronbach's alpha *of* .640, the measure is acceptable given its brevity and economic structure. Following the broader literature, assessment of social supports can generally be considered in one of two ways: firstly, social support objectively offered and available and secondly, social support that is perceived to be available (Dworkin et al., 2019). The three-item, one-factor structure of the OSSS-3 aggregates facets such as structural and instrumental support, and thus can be interpreted on a more generic level.

Benevolent Childhood Experiences: The BCE scale (Narayan et al., 2018) is a 10-item self-report measure which assesses favourable childhood experiences characterised by safety and security (e.g., 'at least one caregiver with whom you

felt safe', 'beliefs that gave you comfort'), pleasurable and predictable quality of life (e.g., 'opportunities to have a good time', 'predictable home routine'), positive self-perceptions (e.g., 'like yourself or feel comfortable with yourself'), and support external to the family (e.g., 'good neighbours', 'at least one teacher that cared, 'adult who could provide support or advice') with Cronbach's alpha ranging from .69 to .79. For the present study, responses on the BCE scale were summed to create a total BCE score.

Collective efficacy Scale (Sampson et al., 1997) is a 10-item scale measuring how well communities work together to make things work. The scale consists of two sub-scales: 'informal social control', and 'social cohesion'. The 5-item social cohesion sub-scale is used in the current survey. Items are scored on a Likert scale ranging 1-5. Total scores are summed and divided by 5. Lower scores reflect higher levels of social cohesion.

Survey responses

In total, 2616 addresses were issued over the survey period. 10% of all addresses selected over the survey period were ineligible, leaving 2,355 eligible addresses. Of these, 817 (35%) were refusals and 13 (1%) were instances where the selected respondent was unavailable during the fieldwork period (see Table 4).

Table 4: Overview of survey contacts

Outcome	Total	
	N	%
Eligible contacts	2355	90
Complete	1203	51
Refusal	817	35
Selected respondent away	13	1
Status not confirmed during fieldwork period	322	14
Ineligible contacts	261	10
Address not found/vacant/non-residential	261	100

In total 1,203 surveys (51%) were completed. Table 5 (also see Appendix 2) outlines the responses by age, gender, religion, ethnicity and socio-economic status. Across these metrics, the study sample was not statistically different from the population, increasing confidence that the responses captured enough of a spread across a diverse of a sample as possible to reflect the wider population. This increases confidence in the population estimates and their implications.

Table 5: Sample demographics

		Sample		Population	
Age					
		N	**%**	**n**	**%**
18-24		88	7.3	149248	10.5
25-34		191	15.9	240231	16.5
35-44		245	20.4	257403	17
45-64		402	33.4	494396	33.7
65+		277	23	342482	22.2
Male		528	43.9	721849	48.65
Female		673	**55.9**	**761911**	51.35
White		1156	96.1	1837575	96.6
BME		44	3.7	65604	3.4
Catholic		461	38.4		
Protestant	Any	473	39.4		
Other/None		265	22.1	486,879	25.99
Deprivation quintile					
1 (most deprived)		234	19.5		18.3
5 (least deprived)		250	20.8		19.4

To ensure that the study met the target sample in terms of stratification by county and multiple deprivation indices, chi-square tests were undertaken. These illustrated no statistically significant difference between the subgroups based on location, deprivation, gender or age. Thus, weighting of the data was not required.

Analyses

This study captured 13 categories of ACEs. The primary focus of the analysis was on the identification of the overall prevalence of ACEs within the NI adult population, and how these vary by key demographic variables such as gender and deprivation. As per Wiehn et al (2018), predictor variables were pooled prior to analyses in order to avoid inferential statistical analysis using low variances (e.g., physical fighting and community violence=peer violence; and death of a caregiver and parental absence=parental loss/absence). Statistical analyses were undertaken using SPSS v29.

Drawing on previous examples of population surveys using the ACE-IQ (UNICEF, 2019), two potential responses were applied for each item. Across the thirteen ACE groups, a binary (yes/no) option was provided. With an affirmative response, the participants were asked about whether this was frequent or not (e.g., rarely or always). Responses were dichotomised to elucidate more frequent exposure to each ACE. In line with other studies (Bellis et al., 2013), it was anticipated that exposure to one ACE will be highly correlated with other ACEs. The continuous ACE count was also be recoded into four groups (0; 1; 2-3; 4+).

Descriptive statistics were used to produce frequencies for each of the key variables, including the prevalence rates for each of the ACE categories. Bivariate associations between ACEs exposure and key outcomes of interest were explored using between group analyses. Given the implications of a dose-response, specifically, experiencing four or more ACEs, sub-group analyses were undertaken. Assuming a prevalence rate of 8.3% for those who experienced 4+, a minimum total sample of N=128, with n=64 in each group was required for between groups t-test for medium effect and power of .8. Bivariate logistic regression was used to examine independent relationships between ACE counts and psycho-social and health related outcomes of interest.

Ethical considerations and ethical approval

Sensitive themes

An objective of the study was to establish population estimates for adversity during childhood and the impact of such exposure. By its very nature the themes were of a personal nature, and potentially sensitive. To minimise any potentially adverse effects, the team consisted of experienced clinicians who provided the team with ongoing advice and support. All questions were self-report, meaning that the interviewers did not ask the participants any sensitive questions, nor receive sensitive responses directly. The participants were therefore able to decide whether or not to answer each item.

Confidentiality

All 3,600 households in the sample were assigned a unique five-digit unique reference number prior to the commencement of fieldwork. These reference numbers ensured that participant names could not be linked back to an individual survey. Prior to the commencement of an interview, respondents were asked to read an information sheet which outlined how their data would be handled, including how it was collected, analysed and stored. Respondents were then asked to sign a consent form agreeing to these measures. To reduce the chance of non-response to questions, most of the questionnaire was self-completed by the respondent.

Surveyor training

Perceptive Insight's team of experienced interviewers were selected to work on the survey. All interviewers were trained to the standards of the Interviewer Quality Control Scheme. The interviewers were asked to attend a survey-specific training day during which they were fully briefed on the background to the research, the content of the survey, confidentiality and consent procedures, safeguarding policy and timelines for the research. Written instructions were provided to interviewers along with a booklet outlining safeguarding procedures tailored to the specific content and nature of the survey. 10% of each interviewer's work was backchecked to ensure the proper implementation of survey methods and in accordance with the Market Research Code of Conduct.

Dealing with distress

Each survey participant was provided with a list of useful contacts. This consisted of helpline numbers for organisations providing information about mental health and crisis support. It also encouraged participants to contact their GP if they needed help and advice.

Ethical approval

Ethical approval was granted by the Research Ethics Committee, School of Social Sciences, Education and Social Work, Queen's University Belfast.

Findings

Prevalence of ACEs in Northern Ireland

Across the sample, three in five adults had experienced at least one ACE (60%), with approximately one in six adults reporting that they had experienced more than four adverse childhood types (17.6%) (See Fig. 5 and appendix 3). This means that for every one-hundred people living in Northern Ireland, sixty are likely to have experienced harm as a child.

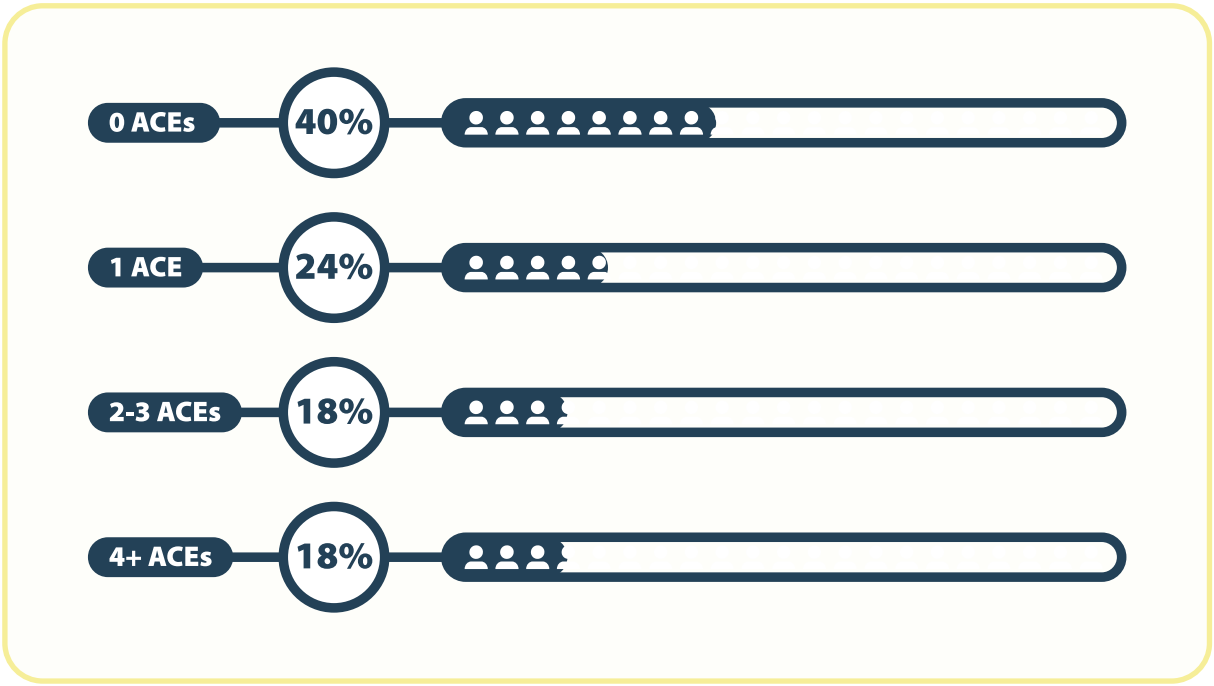


Figure 5: Prevalence of ACEs in NI (ACE groups)

Prevalence of Individual ACEs and ACE Groups

In order to examine how the NI adult population experienced adversity in different ways, sub-group analyses were undertaken. Specifically, we examined the prevalence of ACEs between individuals of different genders, different age-groups and different levels of deprivation. We captured exposure in two different ways. Firstly, we captured who had any exposure to each form of adversity and who had no exposure. Secondly, we also captured who had more frequent and who had less frequent or no exposure. In the analyses that follows, we present those who had more and those who had less frequent (or no) exposure.

For example, close to half of the sample (46.9%) reported exposure to bullying, however, this ranged from once (6.4%, n=77) ‘a few times (30.6%, n=368), to ‘many times’ (9.5%, n=114) (see Fig. 6).

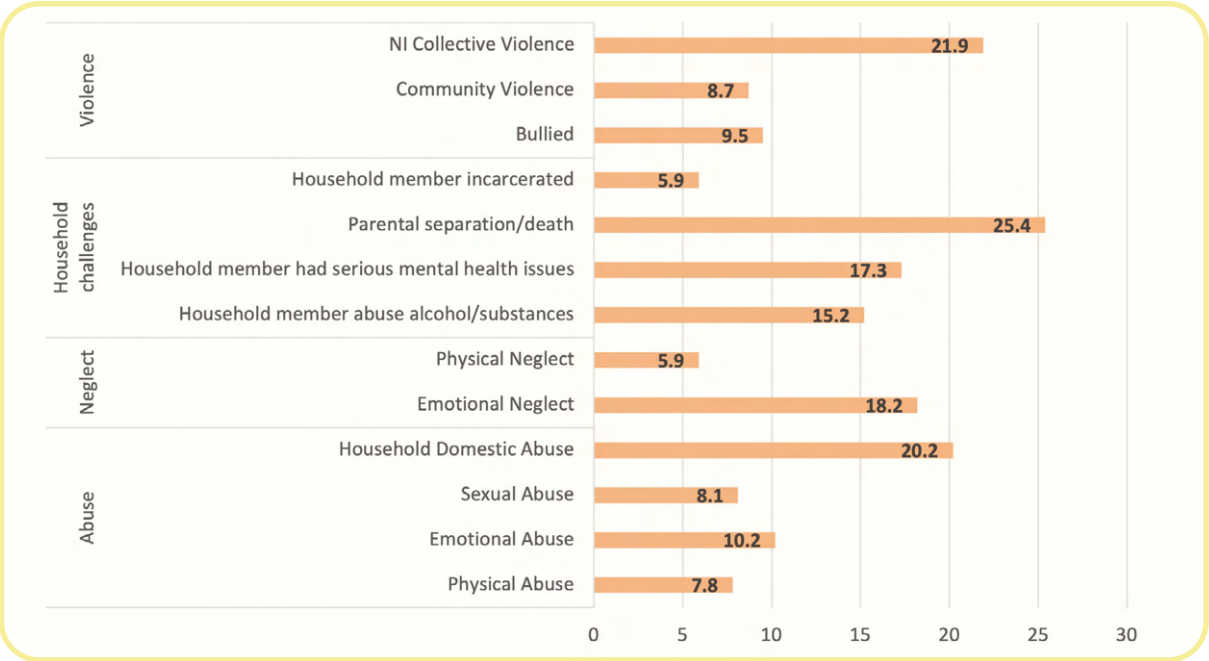


Figure 6: Exposure to ACE types in NI (%)

Exposure and age

There were statistically significant differences observed across age groups, with those in the 18-24 age band most likely to report having zero ACEs (50%) compared with all other ages, and also least likely to report experiencing four or more ACEs during childhood (see Appendix 4). Overall, it was those in the 35-44 age group who were most likely to report more than four ACEs (24.1%) (see Fig. 7 and appendix 4).

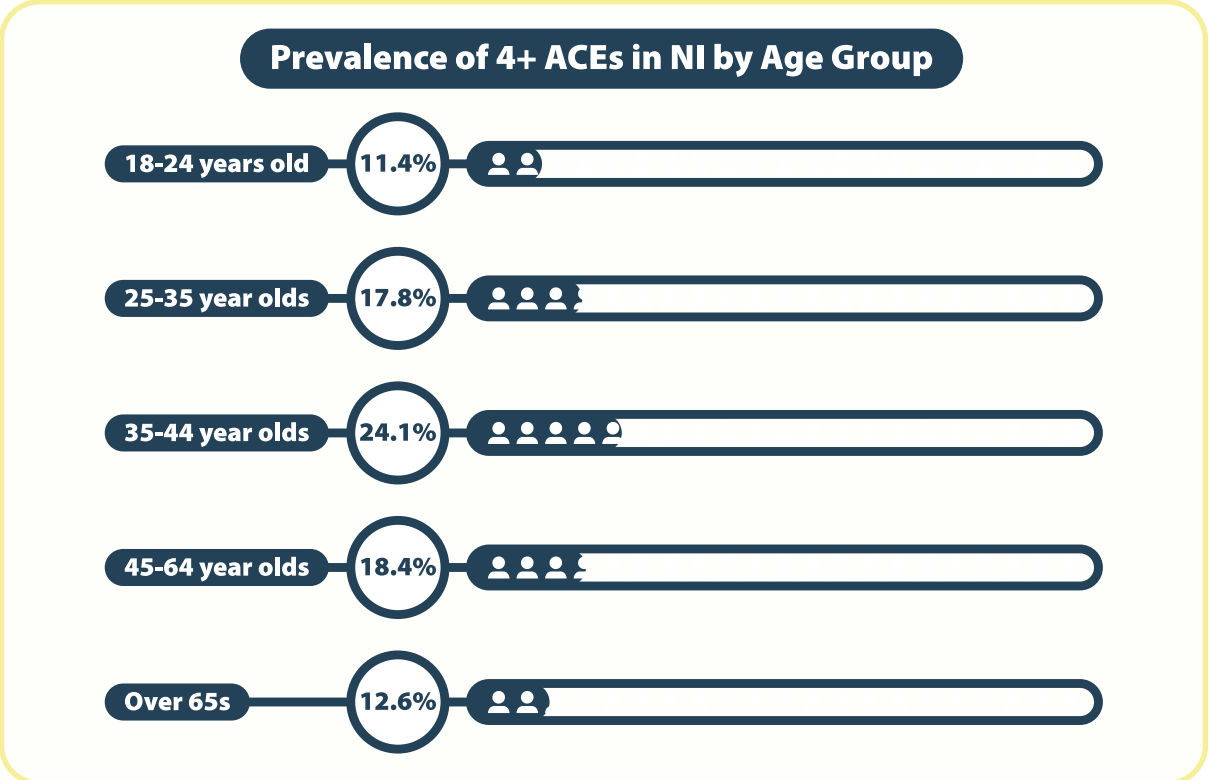


Figure 7: Prevalence of 4+ ACEs by age group

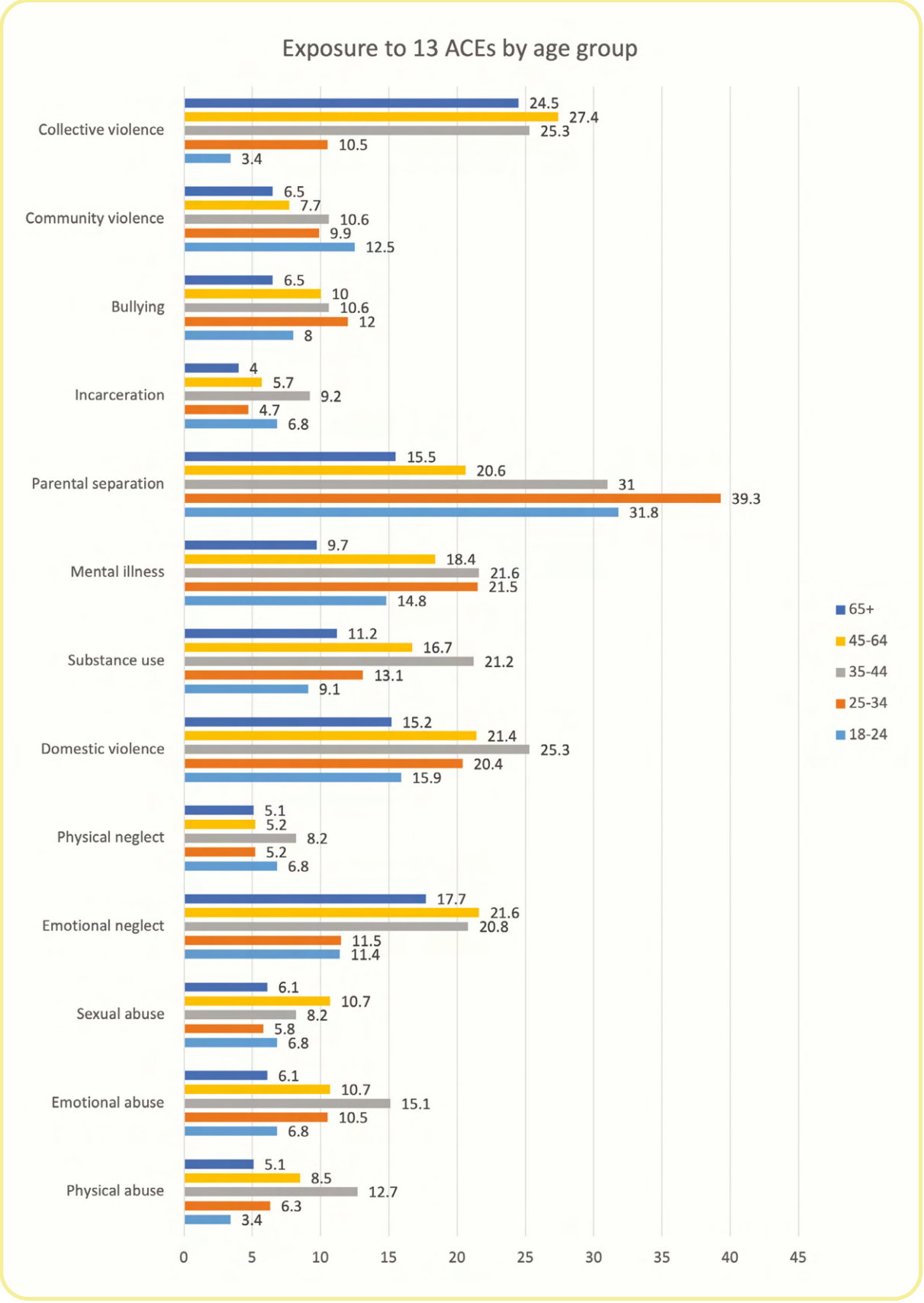


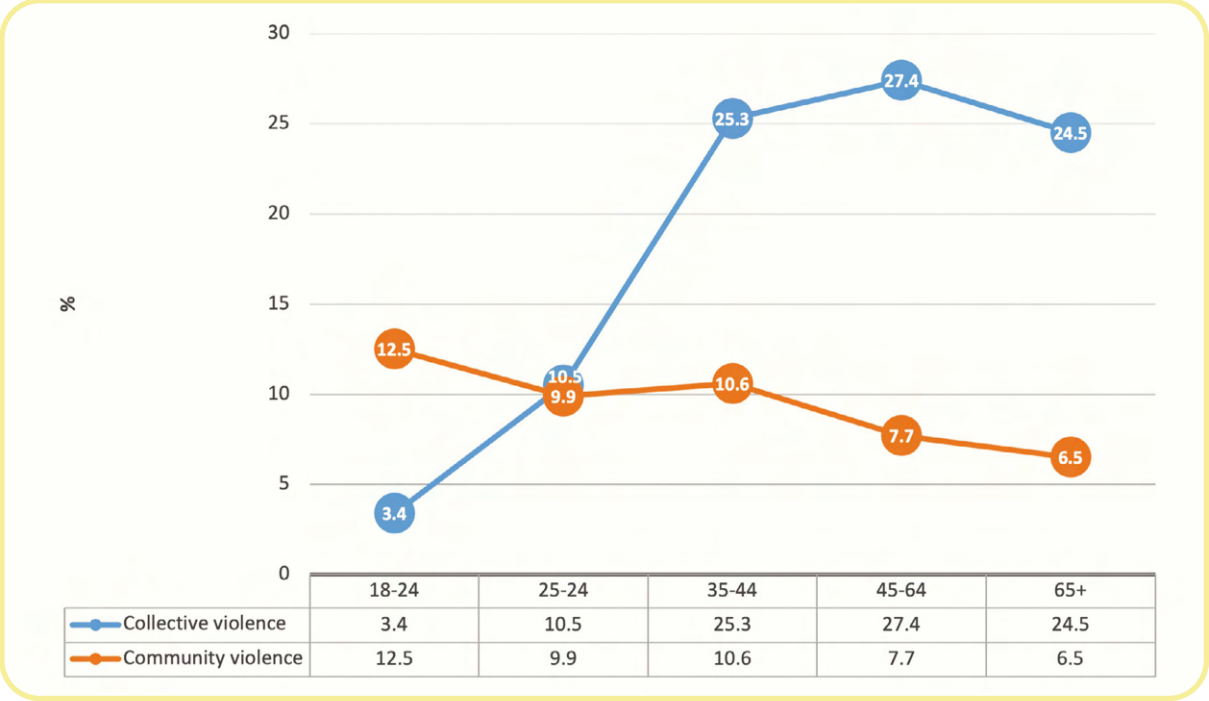
Figure 8: Exposure to 13 ACEs by age group

Age-related differences were minimal for emotional and sexual abuse, physical neglect, and community violence, indicating stability in these adversities over time. (see Fig. 8 and Appendix 4). Those in the 35-44 age band were significantly more likely to report experiencing frequent physical abuse, domestic violence and parental substance use as a child than either younger or older age groups. For example, compared to 18–24 year-olds, 35–44 year-olds reported exposure to physical abuse at nearly four times the rate (3.4% vs 12.7%).

Compared with only 3.4% of 18–24 year-olds, individuals in this older category reported exposure to physical abuse at nearly four times the rate (12.7%).

While the over 65s were least likely to report experiencing parental separation/death (15.5%), those in the 25-34 age band were most likely (31.8%). While those in the 18-24 group were most likely to experience community violence as a child (12.5%), it was the 45–64 year-olds who were most likely to report experiencing collective violence as a child.

Compared with 18–24 year-olds, these older respondents were up to eight times more likely to have been exposed to collective violence (see Appendix 4), a finding that make sense since it is this group who would have been in their teens during the most violent period of the Troubles/conflict. However, the converse was true of community violence. In regards to witnessing community violence (e.g., being in a physical fight; seeing or hearing someone being beaten up in real life; seeing or hearing someone being stabbed or shot; or seeing or hearing someone being threatened with a knife or gun) it was those in the younger age group that were most likely to report exposure and those in the oldest age group least likely (12.5% v 6.5%) (see Fig. 8). This implies that while collective violence has subsided, more general forms of serious community violence have increased.



	18-24	25-24	35-44	45-64	65+
Collective violence	3.4	10.5	25.3	27.4	24.5
Community violence	12.5	9.9	10.6	7.7	6.5

Figure 9: Prevalence of collective and community violence by age group

Exposure and gender

There were no observable gender differences regarding exposure to ACEs. 42% of males and 38.5% of females reported no ACEs during childhood and 18% of males and 17.2% of females reporting being exposed to more than four distinct types of ACEs.

While males were proportionally more likely to experience physical violence (8.2% v 4.2%) this was not at the point of statistical significance (see Appendix 4). In other words, male and females were equally likely to experience this form of adversity as a child. There were no observable gender differences for emotional neglect, physical neglect, domestic abuse or parental loss/separation. The strongest gender differences were observed for; community violence, with males more likely to report being exposed to this form of adversity as a child (10.2% v 7.4%) and; emotional (11.9% v 8%) and sexual abuse (9.4% v 6.4%) with females more likely to experience this form of adversity as a child (11.9% v 8% and 9.4% v 6.4% respectively. See Appendix 3). Only emotional abuse was at the point of statistical significance, while sexual abuse was marginally significant.

Exposure and deprivation

Across ACE counts, as well as within specific forms of adversity, there were significant differences between the least and most deprived communities that respondents resided in (reported as the those in the 20% least deprived areas compared to the 20% most deprived areas) (see Fig. 10). For example, 32.5% in the most deprived communities reported no exposure to childhood adversity, compared with 46% in the least deprived communities. The difference was even more elevated when looking at those who reported being exposed to four or more ACEs during childhood, with rates being almost twice as high in the most deprived communities compared to the least deprived (24.4% vs 12.8%). This illustrates that while ACEs during childhood affect all sections of society, exposure and dose are not dispersed uniformly.

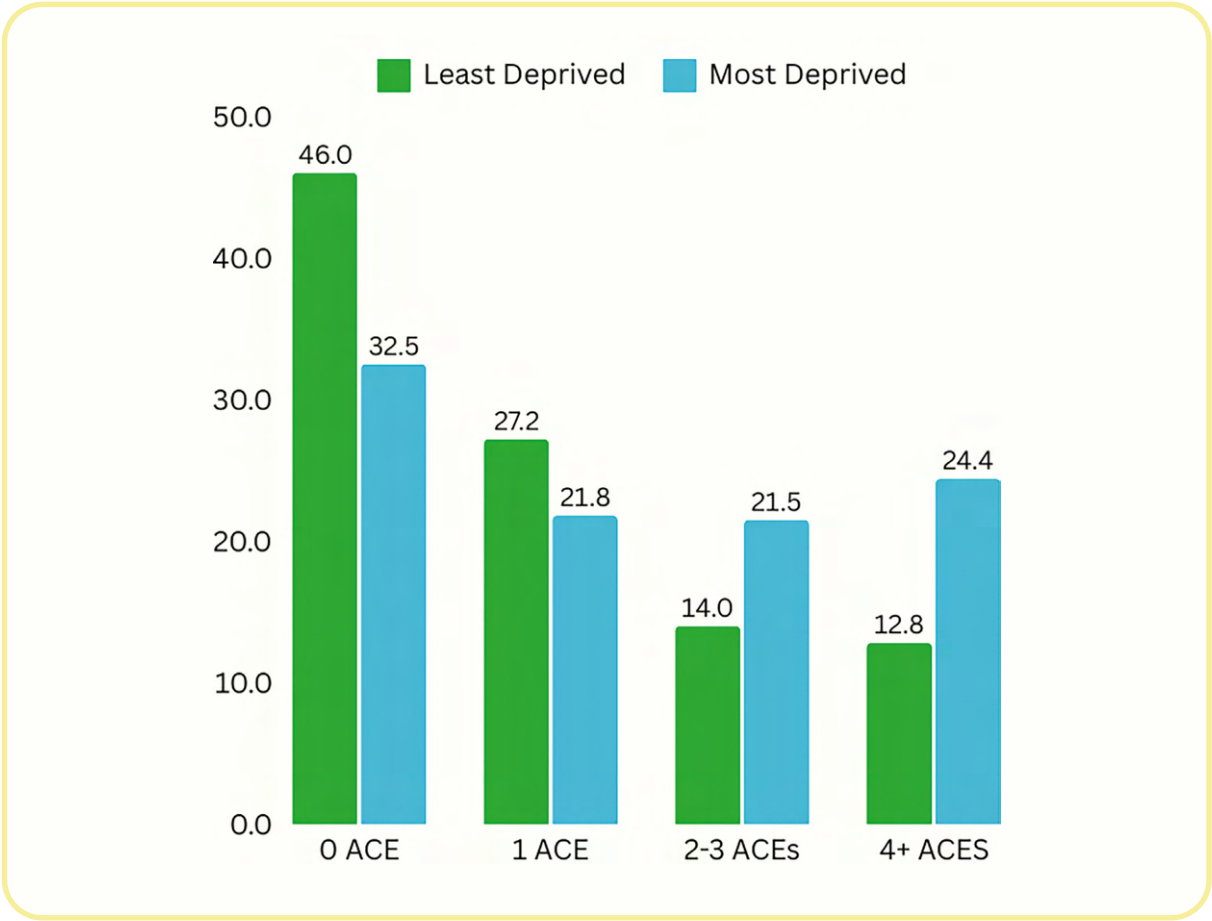


Figure 10: ACEs by deprivation

When drilling down further, there are some forms of adversity that adults are equally likely to report experiencing as a child, regardless of their socio-economic status. These include physical abuse, emotional abuse, living with a parent/carer who has a mental illness, being separated or losing a parent, and being bullied (See Appendix 4). However, there were marked differences across the range of remaining ACEs.

Prevalence of Troubles/conflict-related adversity

The ACE WHO questionnaire's measure of Collective Violence asks respondents if they were ever beaten up by soldiers, police, militia, paramilitaries, or other gangs as a child and, if they ever experienced Troubles/conflict related trauma as a child, whether this involved the killing or injury of a close relative or friend. Figure 11 below provides further information on the proportion of respondents who grew up in NI (87.6%) who experienced these events, together with additional questions on being threatened by paramilitaries and witnessing any Troubles/conflict-related violence.

Almost half (47.5%) of the sample reported witnessing conflict-related violence with 30.1% reporting that they had experienced a traumatic Troubles/conflict related event (see Fig. 11 and appendices 3 and 4). Specific forms of conflict adversity included direct experiences of violence towards the respondents as well as indirect experiences involving someone close to them. In terms of direct experiences of violence, 4.8% reported being the victim of paramilitary, police and/or military violence, 10.6% reported being threatened specifically by paramilitaries and 3% reported being injured as a result of the Troubles. In terms of indirect experiences of violence, close to one-in-ten (8.7%) reported losing someone close as a direct consequence of conflict-related violence and 11.6% reported someone close being injured.

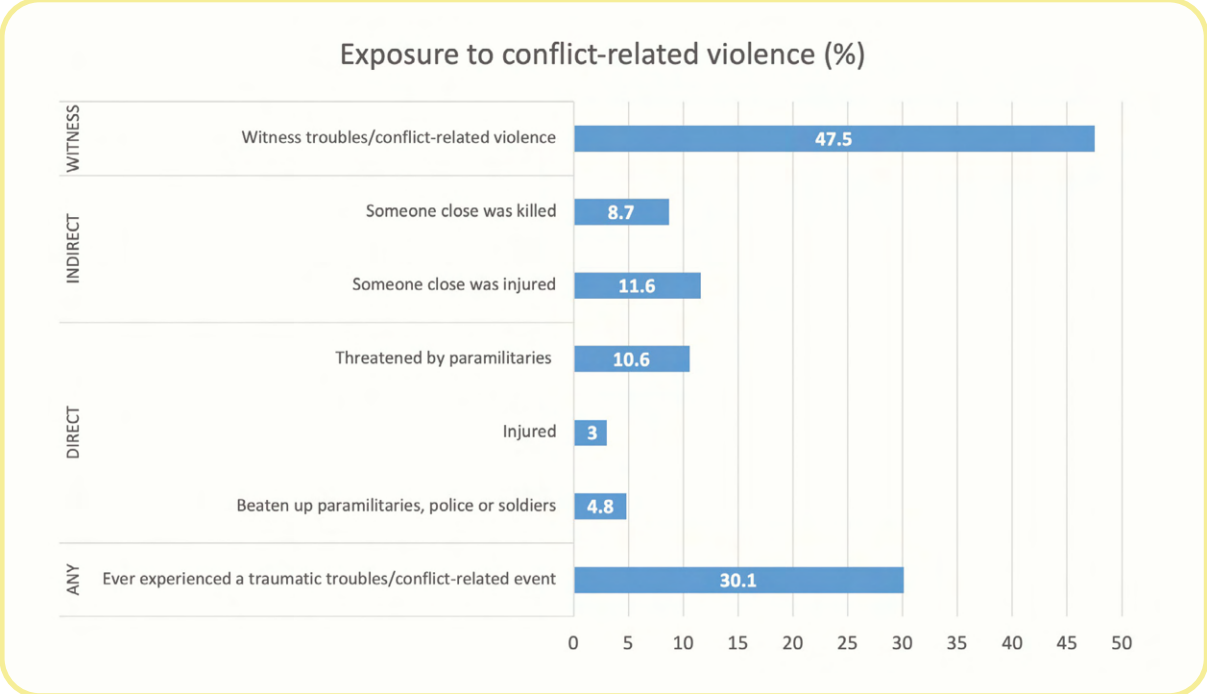


Figure 11: Exposure to conflict-related violence

Few gender differences were observed for Troubles/conflict-related adversities. Males and females were equally likely to report ever experiencing any Troubles/conflict-related adversity or, have someone close to them killed or injured. There was a gender difference observed at the p<.001 level, for paramilitary threats. Males were significantly more likely to have been threatened as a child compared with females (16.1% v 6.2%). Males were also more likely to have witnessed conflict specific violence.

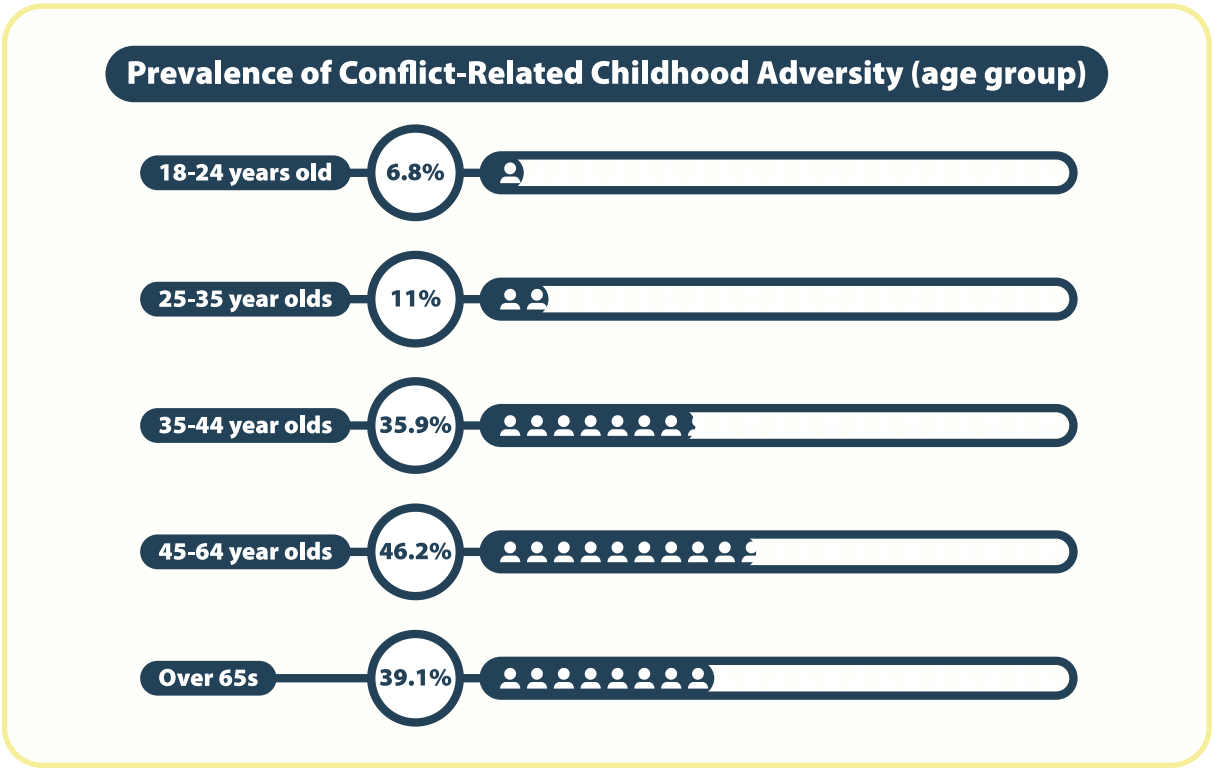


Figure 12: Prevalence of conflict-related childhood adversity by age group

Among the age groups, there were several statistically significant differences observed, with those in the older age groups more likely to experience Troubles/conflict-related events as a child. For instance, there was a 148.7% difference between those in the youngest age band of 18-24 (prevalence of 6.8% for any Troubles/conflict-related adversity) and those in the 45-64 age band (prevalence of 46.3% for any Troubles/conflict-related adversity) (see Fig. 12). The same was observed for conflict-related bereavement. 18-24s reported no exposure while the figure increased incrementally across the age bands (25-34=4.7%; 35-44=15.9%; 45-64=28.6%; 65+=27.1%).

At the time of publishing, it has been almost 27 years since the Good Friday Agreement (GFA), generally seen as the watershed in the NI conflict, and one that has contributed to a significant reduction in total reported violence in NI. Taking this into account, all of those in the first three age-bands (18-24, 25-34 and 35-44) would have still been children after the signing of the GFA; indeed the youngest age band would not have even been born. In other words, they have grown up in what has been described as post-conflict NI (see Fig. 13).

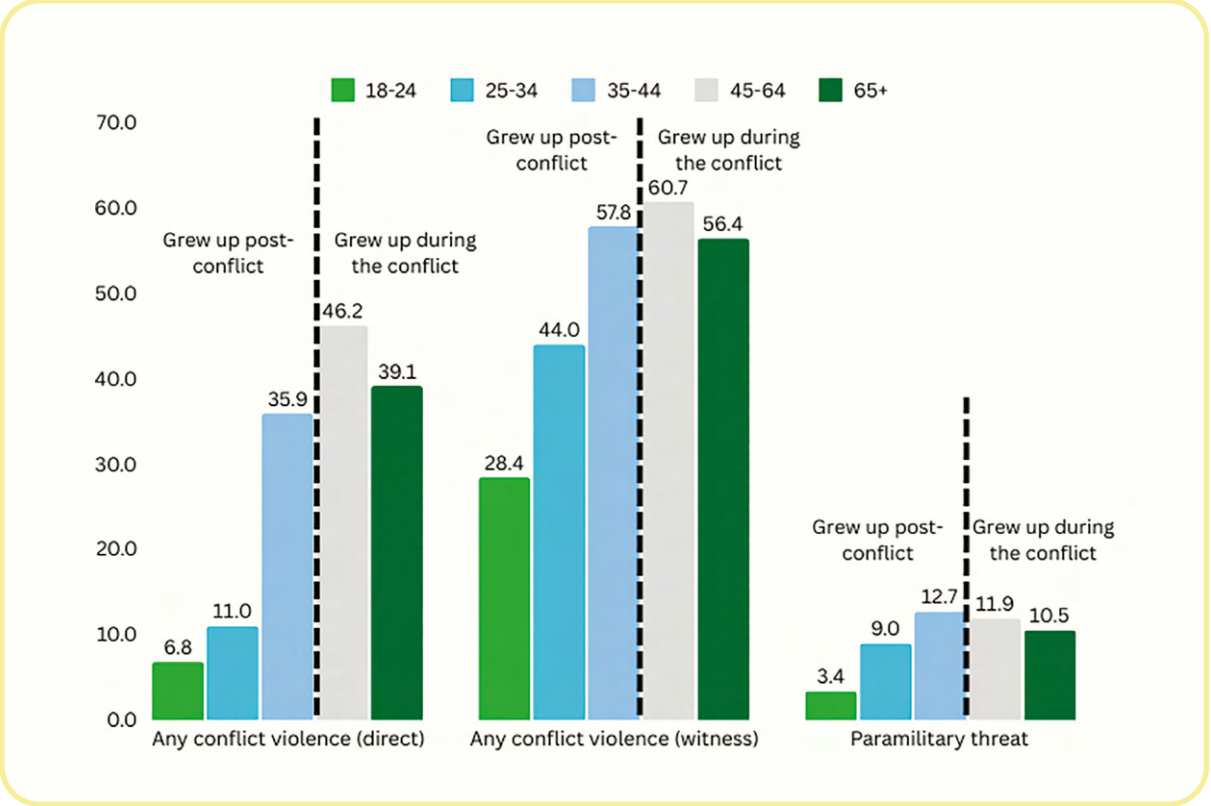


Figure 13: Conflict adversity by age group[2]

Despite this, a significant proportion of all age groups, including those in the younger age bands, reported direct exposure to conflict-related violence (see Fig. 13). For instance, 3.4% of 18–24-year-olds and 8.9% of 25–34-year-olds reported being threatened by paramilitaries. To include this as a conflict related adversity experienced during childhood, this means that such events would have had to have occurred between 2006 (when the 18-year-olds were born) and 2023 (when the 18-year-olds transitioned from childhood and became eligible for the study).

2 The data included in fig.13 illustrates direct and indirect violence. Direct violence is when the respondent reported being injured themselves. The witness category refers to indirect exposure to violence through witnessing others being injured. Paramilitary threat is a separate category. This captures the prevalence of threat, coercion and/or intimidation by a non-state actor on respondents in local communities.

Impact of ACEs on child outcomes

Education Outcomes

A number of educational outcomes were explored, including educational attainment, educational exclusion and special educational needs Close to one-fifth (18.7%) of the sample reported having no formal qualifications, 6.9% reported having had SEN status and 7.8% reported being excluded from school during childhood. This differed significantly between those with more and those with less exposure to adversity during childhood (see Fig. 14 and appendix 5). Across all three metrics, those with more exposure to ACEs were significantly less likely have been in, and to have achieved in, school as a child. Specifically, compared to those who reported no childhood adversity, those with four or more ACEs were 4.48 times more likely to report special educational needs and 8.96 times more likely to have been excluded from school.

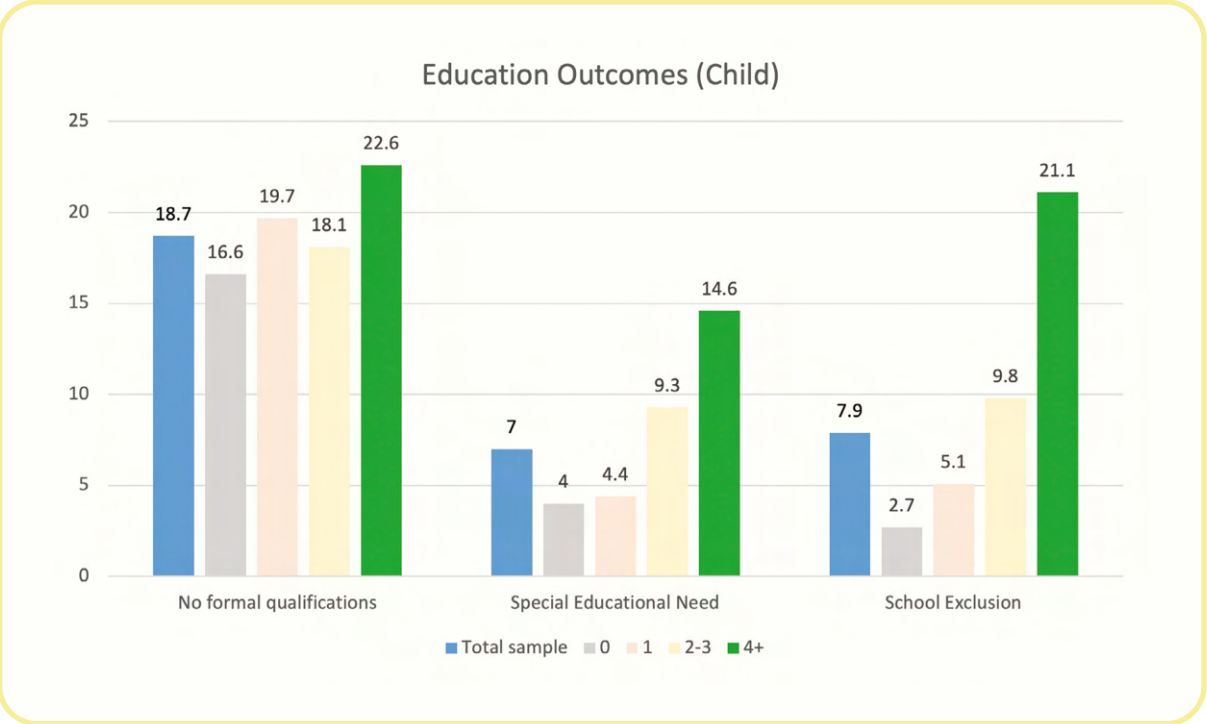


Figure 14: Educational outcomes by ACE group

Health Outcomes

Overall, close to one-quarter of respondents reported having health concerns as a child, however, this figure reduced significantly when asked whether they had a long-term or chronic health concern (6.3%). More than two-fifths of the sample had experience of being hospitalised as a child (41.5%).

There were statistically significant differences observed between those with 0 and those with 4+ ACEs (see Fig. 15 and appendix 5). Those with 4+ ACEs were 3.9 times more likely to have health concerns as a child; 2.84 times more likely to have been hospitalised as a child; and 4.38 times more likely to have long term health conditions as a child.

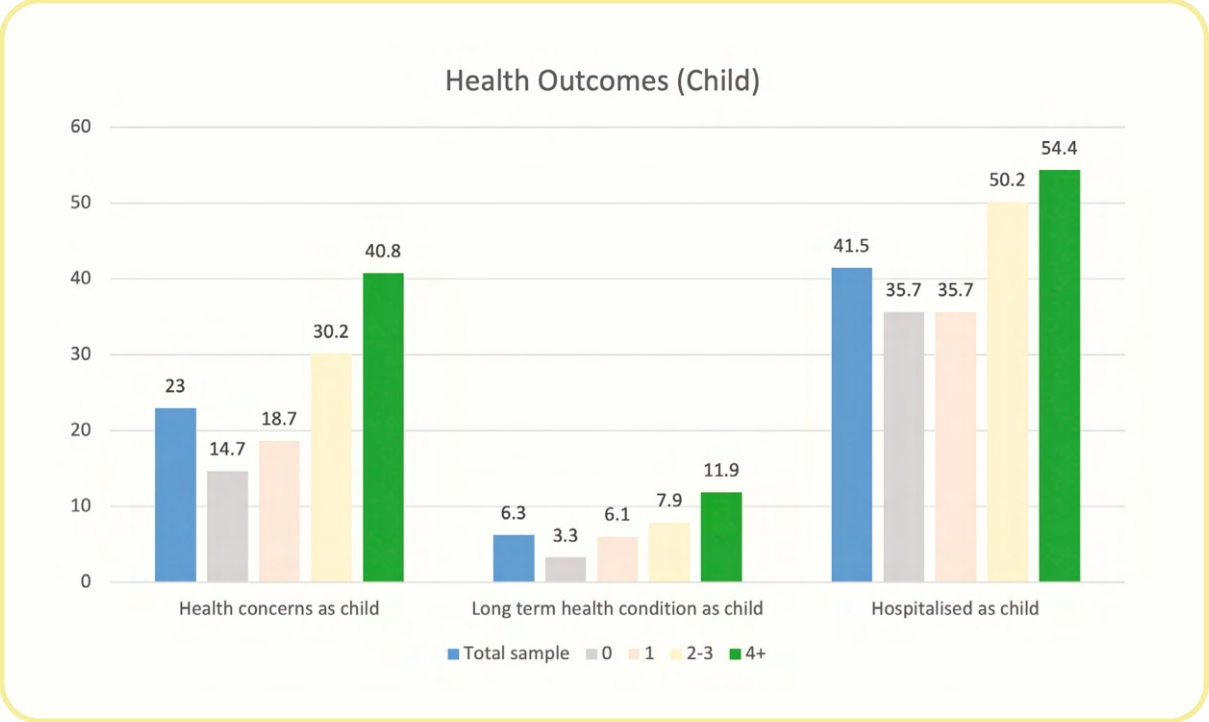


Figure 15: Health outcomes by ACE group

Social/behavioural outcomes

11% of the sample reported early sexual initiation (before the age of 16) and 5.4% reported accidental pregnancy before the age of 18, with 41.7% of those reporting early sexual initiation also reporting unintended childhood pregnancy. Like the previous child outcome areas, there was an observable difference between those with more and those with less exposure to adversity (see Fig. 16 and Appendix 5). Specifically, compared to those who reported no childhood adversity, those who reported four or more types of childhood adversity were 1.79 times more likely to have an unintended pregnancy and were 10.69 times more likely to report early sexual initiation (<16 years of age).

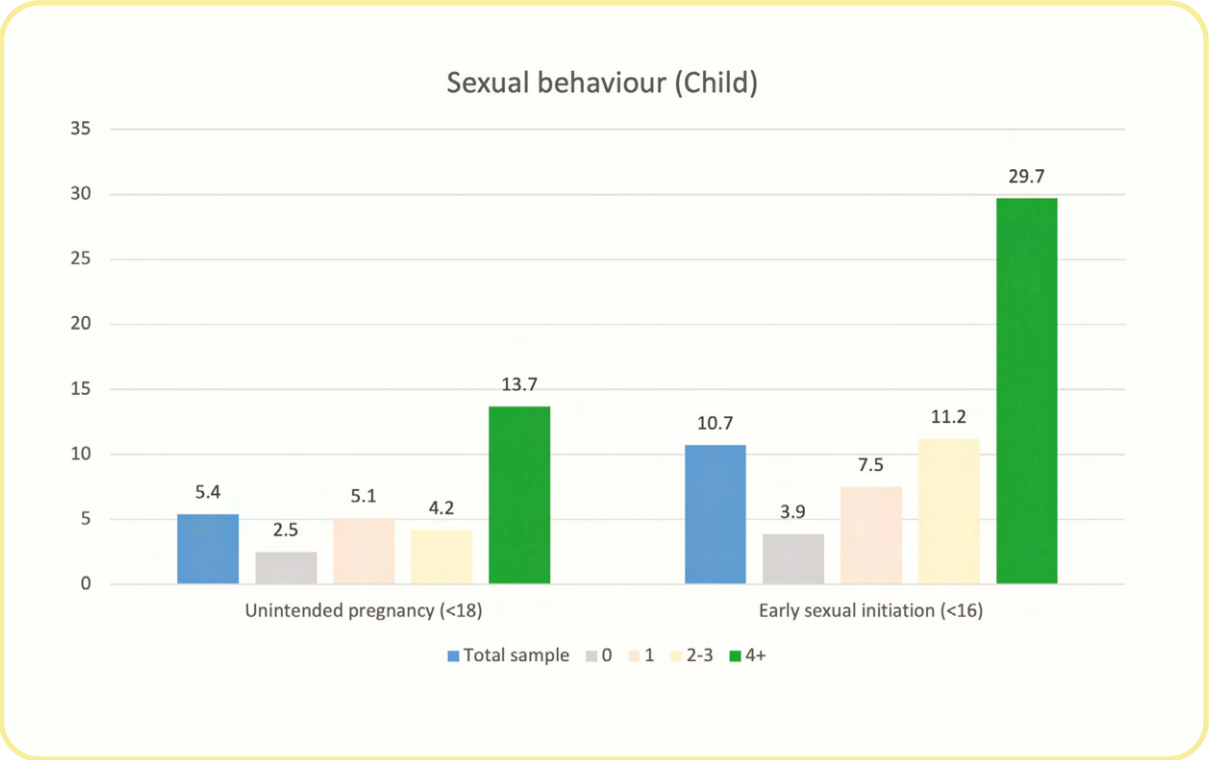


Figure 16: Sexual behaviour by ACE group

A total of 12.2% of the sample reported paramilitary threat as a child. This ranged between 4.2% for those who reported 0 ACEs and 14.7% for those who reported 4+ ACEs. Indeed, compared to those with 0 ACEs, those with 4+ were 13.92 times more likely to report a paramilitary threat.

Summary of the impact of ACEs on child outcomes

In summary, children who experienced early adversity are impacted in different ways during their childhood. After accounting for gender, age and deprivation, we found that across the NI sample, those who experienced four or more ACEs were:

- **4 times more likely to have had special education needs**
- **9 times more likely to have been excluded from school**
- **4 times more likely to have had health concerns as a child**
- **2 times more likely to have been hospitalised as a child**
- **11 times more likely to have had early sexual initiation (<16)**
- **6 times more likely to have had an unintended pregnancy**
- **25 times more likely to have lived away from home as a child**
- **14 times more likely to have been threatened by paramilitaries**

Impact of Child ACEs on adult outcomes

Physical Health Outcomes (Adult)

Across the sample, 35.7% (424 respondents) reported current or ongoing health concerns, ranging from cancer, which had a prevalence estimate of 2.7%, through to high blood pressure which had a prevalence estimate of 9.8%. These also varied considerably across ACE groups (see Fig. 17). Similar observations were made within a number of discrete health challenges. Those in the higher ACE category reported chronic pain prevalence much more frequently than those in the lowest (2.5% v 11.8%). Similarly, those who reported insomnia were more likely to have experienced multiple forms of ACE.

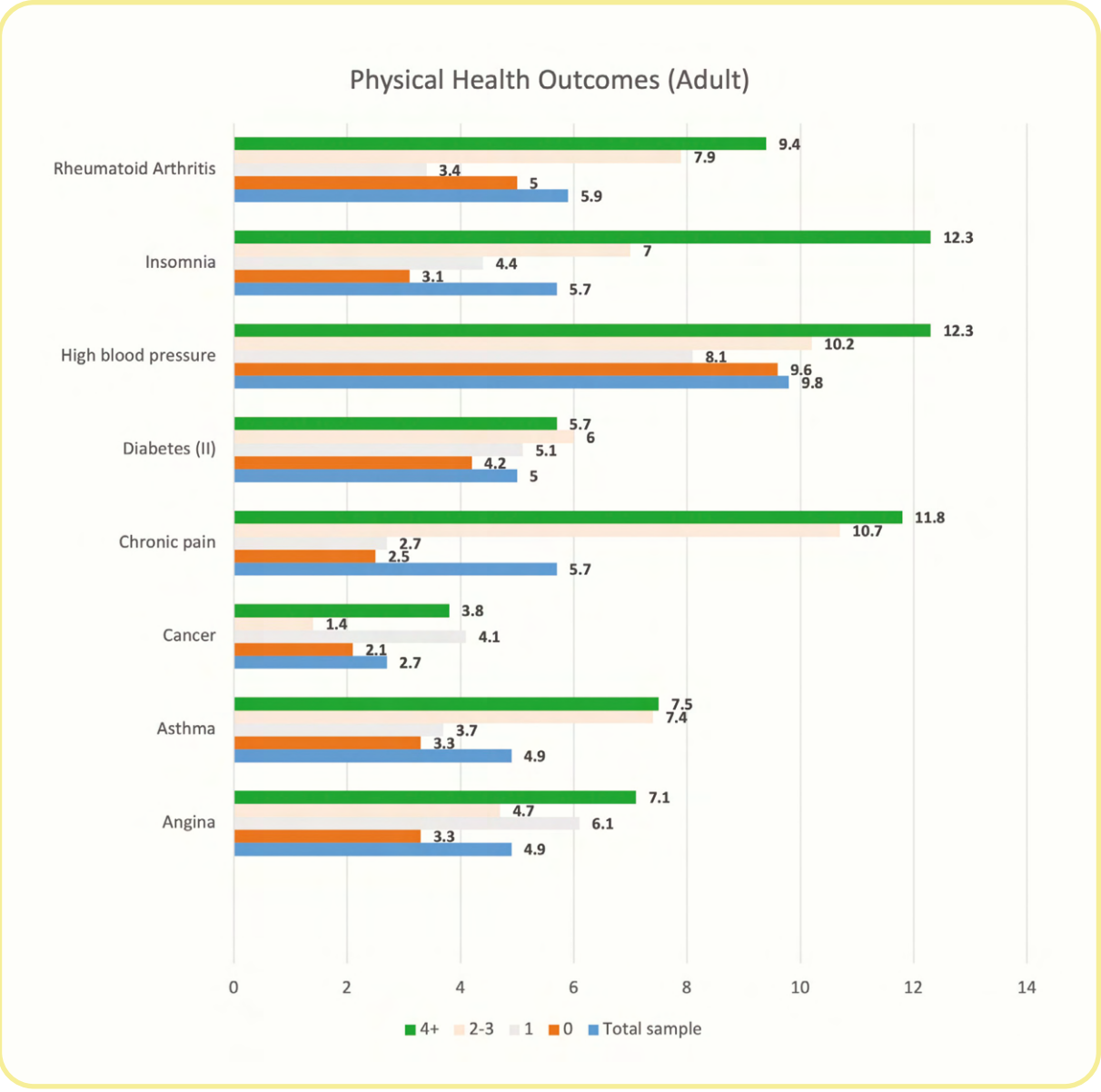


Figure 17: Adult physical health outcomes by ACE group

Compared to those with no ACEs, and controlling for age, gender and deprivation, adults with 4+ ACEs were:

- **5.4 times more likely to have a current ongoing physical health problem**
- **2.3 times more likely to have angina**
- **2.8 times more likely to have asthma**
- **5.1 times more likely to have chronic pain**
- **4.3 times more likely to have insomnia/poor sleep**
- **2.1 times more likely to have rheumatoid arthritis**

Mental Health Outcomes (Adult)

Mental health issues were common across the sample. Almost one-in-five adults reported having a mental health diagnosis (19.5%). 18.7% of respondents screened for probable anxiety, 15.4% screened for probable depression; and 6.1% of the sample screened for any stress-related disorder. Like many other outcome areas, adult mental health outcomes differed depending on the level of adversity reported during childhood (see Fig. 18)

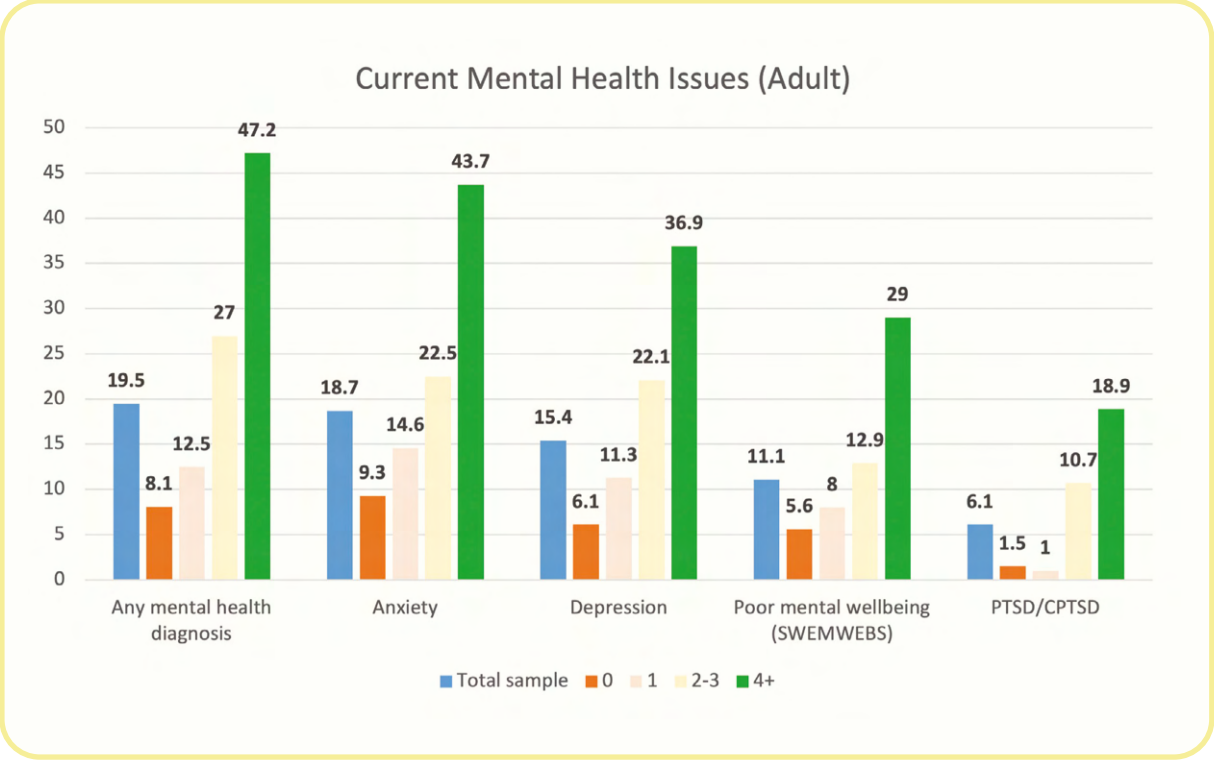


Figure 18: Mental health outcomes by ACE group

Compared to those with no ACEs, and controlling for age, gender and deprivation, adults with 4+ ACEs were:

- **7.5 times more likely to currently have Anxiety (PHQ)**
- **8.6 times more likely to currently have Depression (PHQ)**
- **6.6 times more likely to have poor mental well-being (SWMWEBS)**
- **14.8 times more likely to currently have PTSD/CPTSD**
- **9.6 times more likely to have ever been diagnosed with a mental health condition as an adult**

Health Harming Behaviour Outcomes (Adult)

Respondents were asked a series of questions related to behaviours that can cause a significant and enduring effect on population health. These included excess alcohol use, illicit substance use, smoking/vaping, reduced physical activity and low daily fruit intake. In total 11.7% of respondents were classified as high-risk alcohol drinkers, drinking over the weekly alcohol recommended limit (see Fig. 19). A higher number of adults reported any drug use in the previous 12 months (14.5%). One quarter of adults reported smoking tobacco and/or using vapes in the previous 12 months (24.6%).

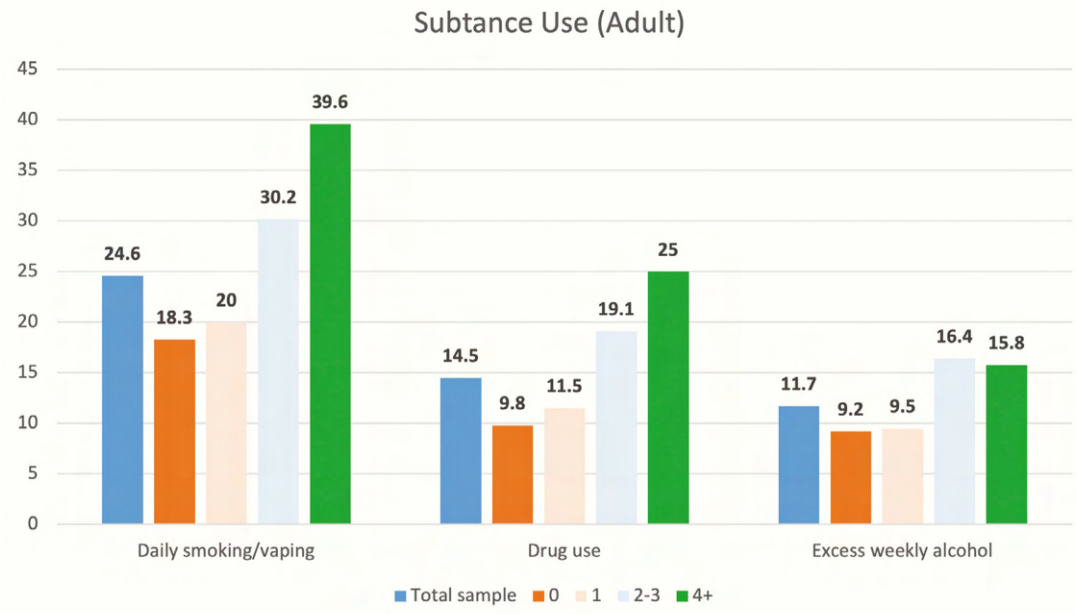


Figure 19: Substance use by ACE group

When ACE groups were compared, there were statistically significant differences among those with four or more ACE exposure compared with those who reported having no exposure to ACEs (see Fig. 19). For example, compared with the prevalence of 9.8% for drug use among those with 0 ACEs, the figure was 25% among those reporting 4+ ACEs.

Further, 17.6% of adults reported engaging in no physical activity on a weekly basis and a similar proportion (16.7%) reported having a low intake of daily fruit and vegetables. There was a strong association between these two items, with those most likely to report reduced physical exercises more likely to also report poor diet.

Compared to those with no ACEs, and controlling for age, gender and deprivation, adults with 4+ ACEs were:

- **2.6 times more likely to smoke or vape daily**
- **2.9 times more likely to have used drugs in the past year**
- **2 times more likely to engage in no or low weekly physical activity (see Appendix 9)**

In addition to the outcomes on individuals, service use was also assessed. Specifically, we explored how prevalent Emergency Department (ED) attendance, hospital attendance, GP contact and police arrest was across the sample and explored this by ACE group.

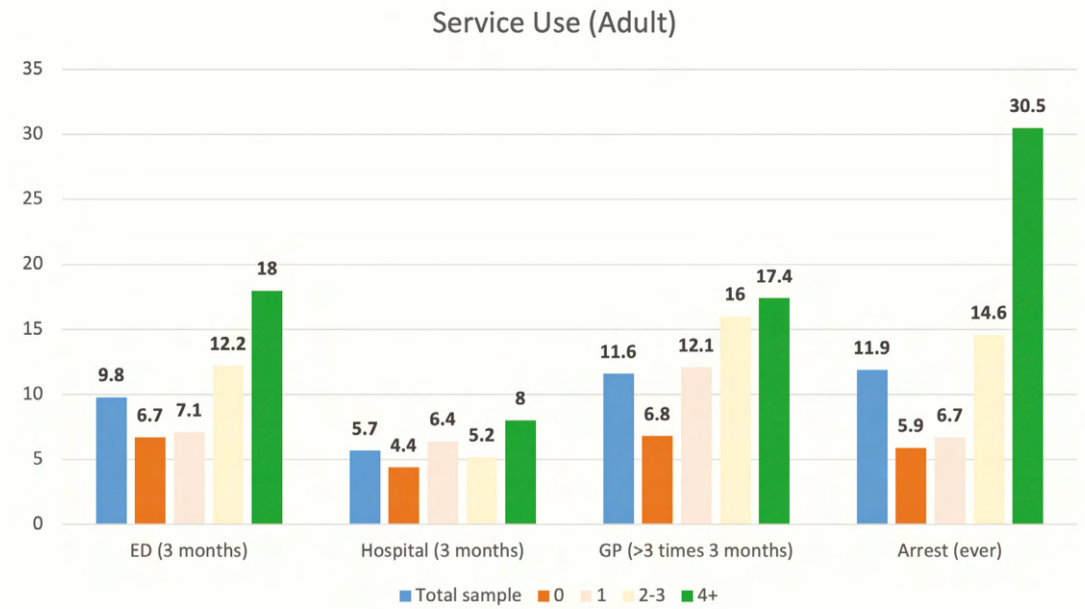


Figure 20: Service use by ACE group

Close to 10% of the sample had attended ED over the three months prior to participating in the study. Just over half of this number (5.7%) reported spending time in hospital over the same period. More than one-in-ten participants (11.6%) had contacted the GP more than three times in the previous three months. With regard to the justice system, 11.9% reported ever being arrested. Additionally, 15.3% of respondents reported struggling with debt as an adult and 5.2% reported borrowing money from an illegal money lender.

As across many other metrics, there were significant differences when those with greatest exposure to ACEs as a child were compared with those who reported none. With regard to arrest, 5.9% of those with 0 ACEs reported arrest compared with 30.5% who reported 4+ ACEs (see Fig. 20). Similar differences were observed for ED attendance, hospital use, and recent frequent GP contact, as well as money-related challenges.

Compared to those with no ACEs, and controlling for age, gender and deprivation, adults with 4+ ACEs were:

- **2.9 times more likely to have attended the ED in the previous 3 months**
- **2.8 times more likely to have contacted their GP on more than 3 occasions in the previous 3 months**
- **8.3 times more likely to have ever been arrested**
- **4.2 times more likely to have ever struggled with debt**
- **10.86 times more likely to have ever borrowed from an illegal money lender (see Appendix 8)**

Adult Adverse Experiences (AAEs)

While much of the focus for this study (as with the majority of ACEs studies), is on the prevalence of adversity experienced during childhood and outcomes across the life course, we also explored exposure to adversity during adulthood and how this (if at all) as associated with earlier adversity. In other words, to what extent does exposure to adversity during one stage of development (childhood) influence adversity experience at another stage of development (adulthood).

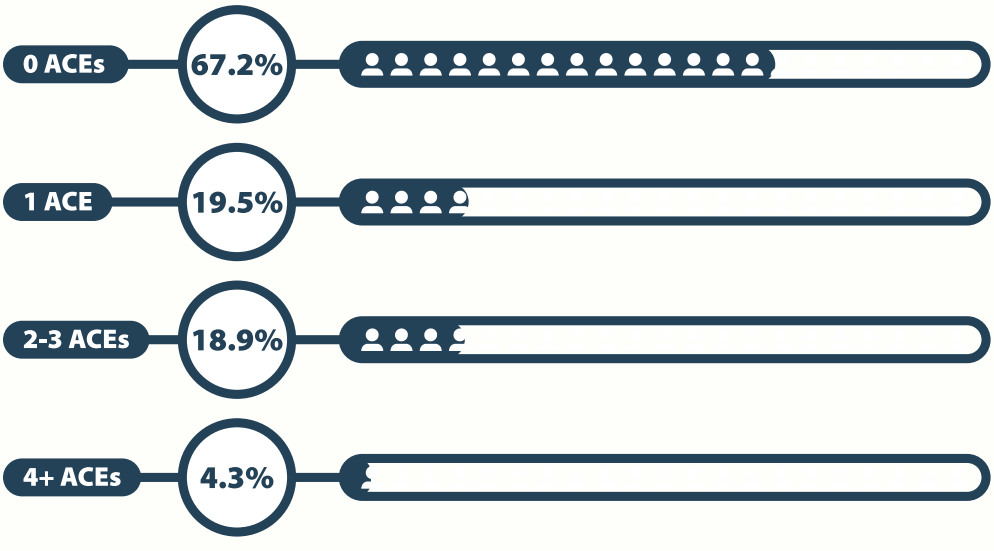


Figure 21: Prevalence of Adult Adverse Experiences in NI

Across the sample, 385 individuals had experienced at least one adult ACE (32.8%), This means that for every 100 people living in Northern Ireland, 33 are likely to have experienced harm as an adult (see Fig. 21). The most prevalent form of adult adversity experienced across the NI sample was living with someone with a serious mental health issue (see Fig. 22), with 24% of the sample reporting such an experience. Exposure to physical violence was least likely to have been experienced; however, it was still reported by 2.3% of the sample.

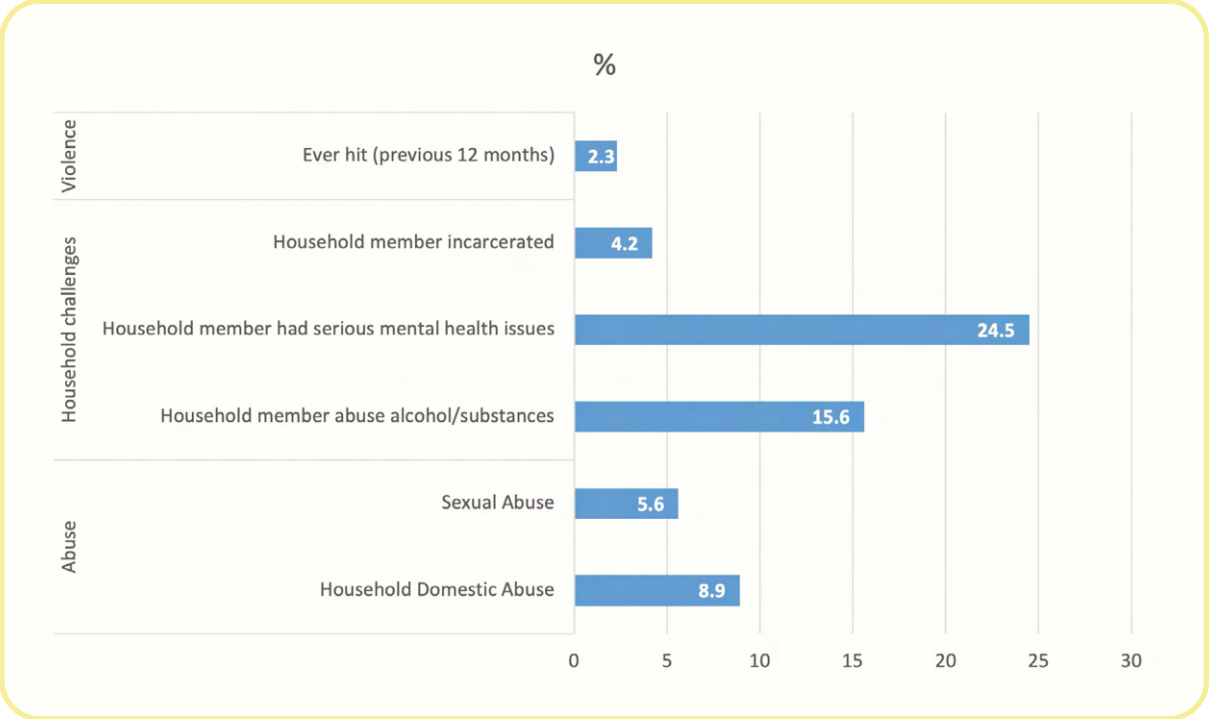


Figure 22: Prevalence of discrete adult adversity in NI

When adult adversity was compared between those with more and those with less exposure during childhood, significant differences emerged (see Fig. 23 and appendices 8 and 9). For instance, among those who reported being exposed to domestic abuse during adulthood, the figures increased significantly for those with 4+ ACEs compared with those who reported 0 ACEs (25% v8.9%). Similarly, 18.9% of those with 4+ ACEs had lived with someone who was in prison as an adult compared with only 4.2% of those who reported 0 ACEs.

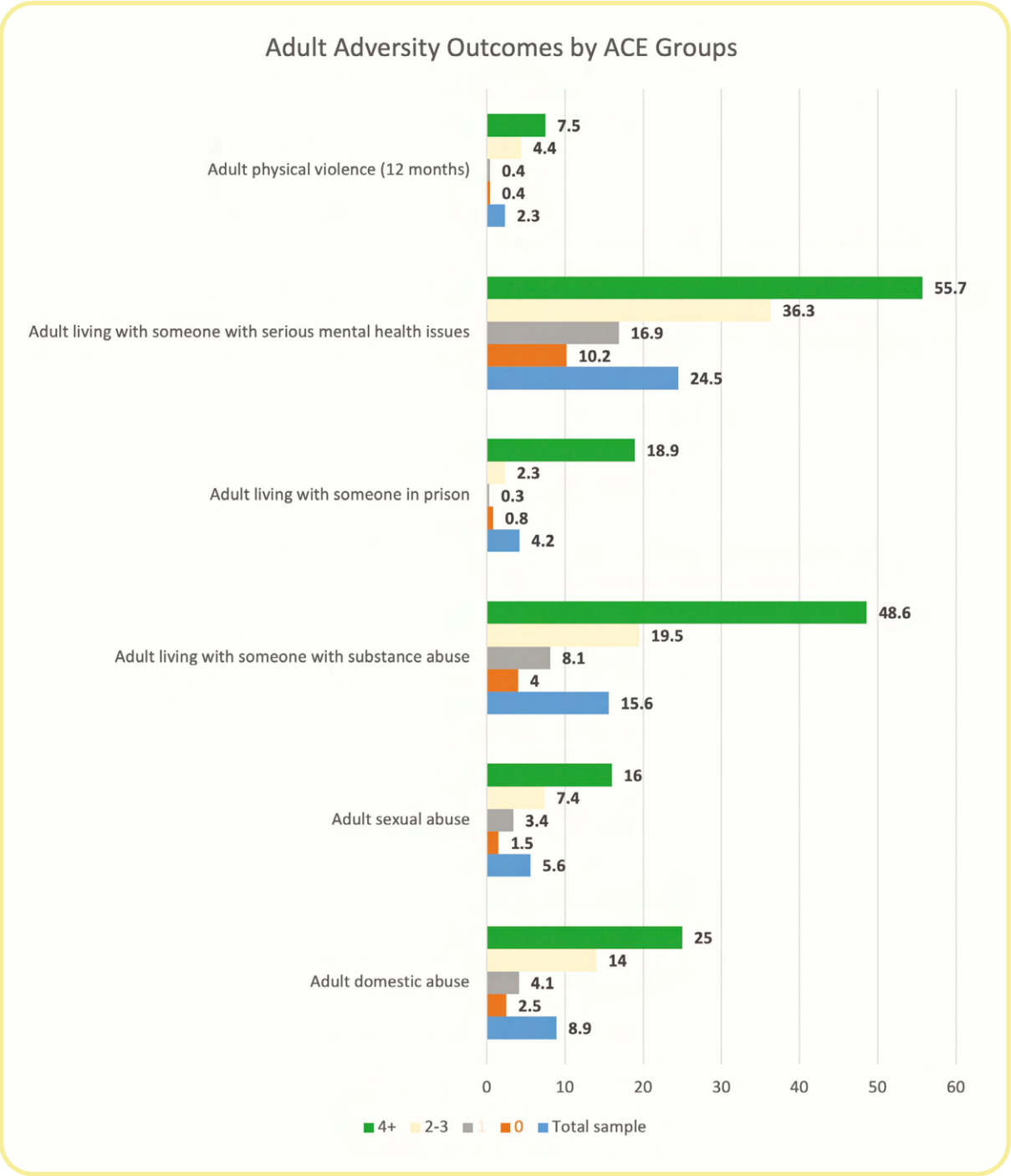


Figure 23: Prevalence of adult adversity by childhood adversity group

Compared with those who reported not being exposed to any ACEs during childhood, those who reported four or more, were 27.75 times more likely to have lived with someone who was in prison as an adult, 19 times more likely to report being hit in the previous 12 months, and 23 times more likely to have lived with someone who had serious substance use issues as an adult (see Fig. 23 and appendix 8). It seems ACEs during childhood are not only predictive of a range of negative outcomes across the life course but are also associated with distinctive and enduring adversity into adulthood.

Compared with those with 0 ACEs as a child, those with 4+ ACEs in NI are:

- **12 times more likely to have experienced domestic abuse as an adult**
- **12 times more likely to have experienced sexual abuse as an adult**
- **23 times more likely to have lived with someone with substance abuse issues.**
- **11 times more likely to have lived with an adult with mental health issues**
- **28 times more likely to have lived with another adult who was in prison**
- **19 times more likely to have been hit in the previous 12 months**

Benevolent Childhood Experiences (BCEs)

Across the sample, most adults reported having had positive experiences during childhood (See Table 6 and Appendix 10). These experiences ranged from having beliefs that provided comfort (80.7%) to having at least one caring adult around them (95.1%). While many of the participants endorsed these, some individuals reported experiencing them more often than others. Responses were disaggregated by BCE groups (low exposure, moderate exposure and high exposure). While close to two-thirds of respondents were in the 'high' BCE group, more than one-in-ten individuals (11.7%) reporting having low exposure to benevolent childhood experiences.

Table 6: Prevalence of Benevolent Childhood Experiences

BCEs	N	%
Did you have at least one caregiver with whom you felt safe?	1134	95.1
Did you have at least one good friend?	1169	97.3
Did you have beliefs that gave you comfort?	950	80.7
Did you like school?	836	70.0
Did you have at least one teacher who cared about you?	983	82.9
Did you have good neighbours?	1120	93.9
Was there an adult (not a parent/caregiver) who could provide you with support and advice?	1016	84.8
Did you have opportunities to have a good time?	1115	93.4
Did you like or feel comfortable with yourself?	988	83.8
Did you have a predictable home routine, like regular meals and regular bedtime?	1107	92.3

BCEs	N	%
BCE Groups		
Low (0-6)	141	11.7
Moderate (7-8)	277	23.0
High (9-10)	785	65.3

BCEs and mental health

When BCEs were included within the regression analysis, the effect of ACEs on the likelihood of experiencing mental health problems in adulthood, although still significant, was substantially reduced across a variety of measures (current anxiety, current depression, poor mental wellbeing, PTSD/CPTSD, any mental health diagnosis (see Appendix 10). This is represented graphically in Figures 24-27, which show that, across all levels of ACEs, when comparing adults with both high levels of ACEs and high levels of BCEs to those with high ACEs and low BCEs:

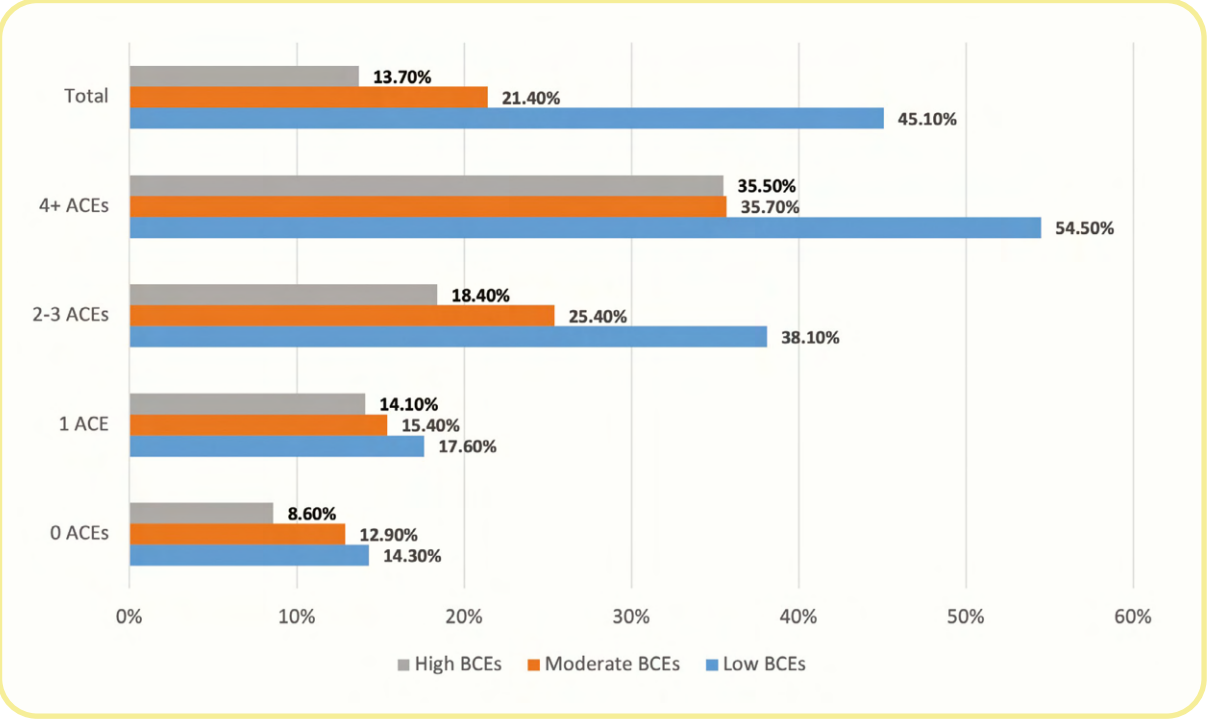


Figure 24: Current anxiety by ACE count and BCE category

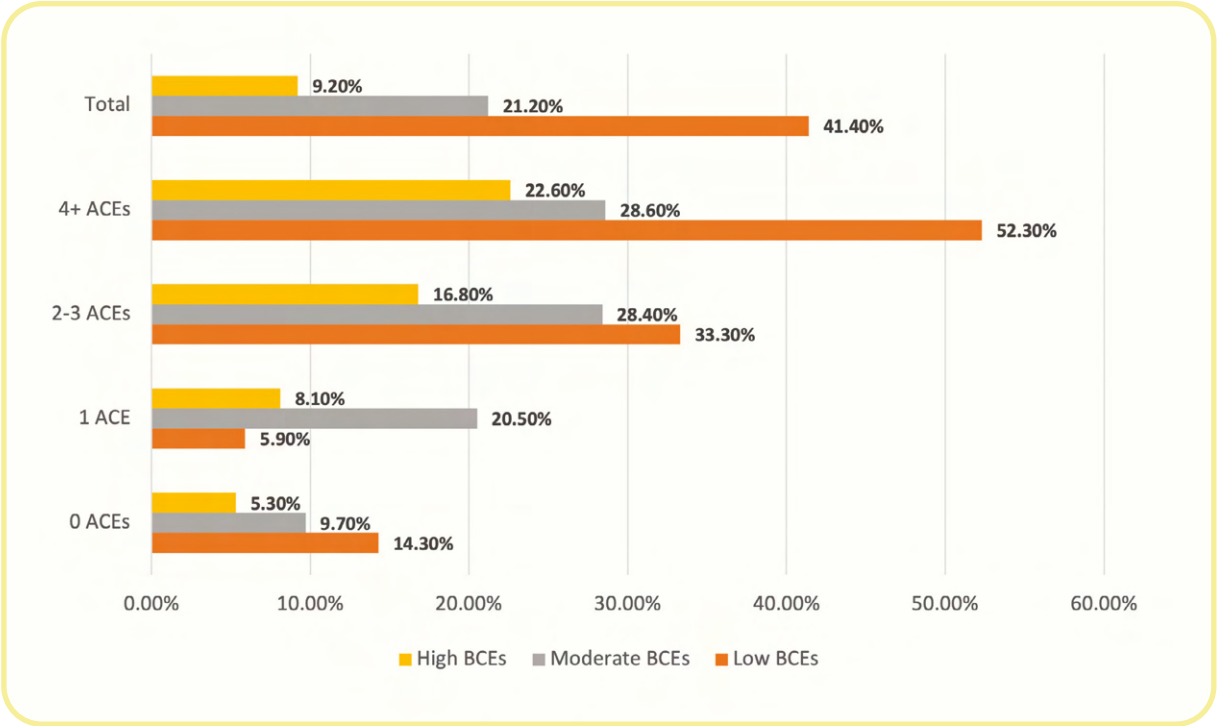


Figure 25: Current depression by ACE count and BCE category

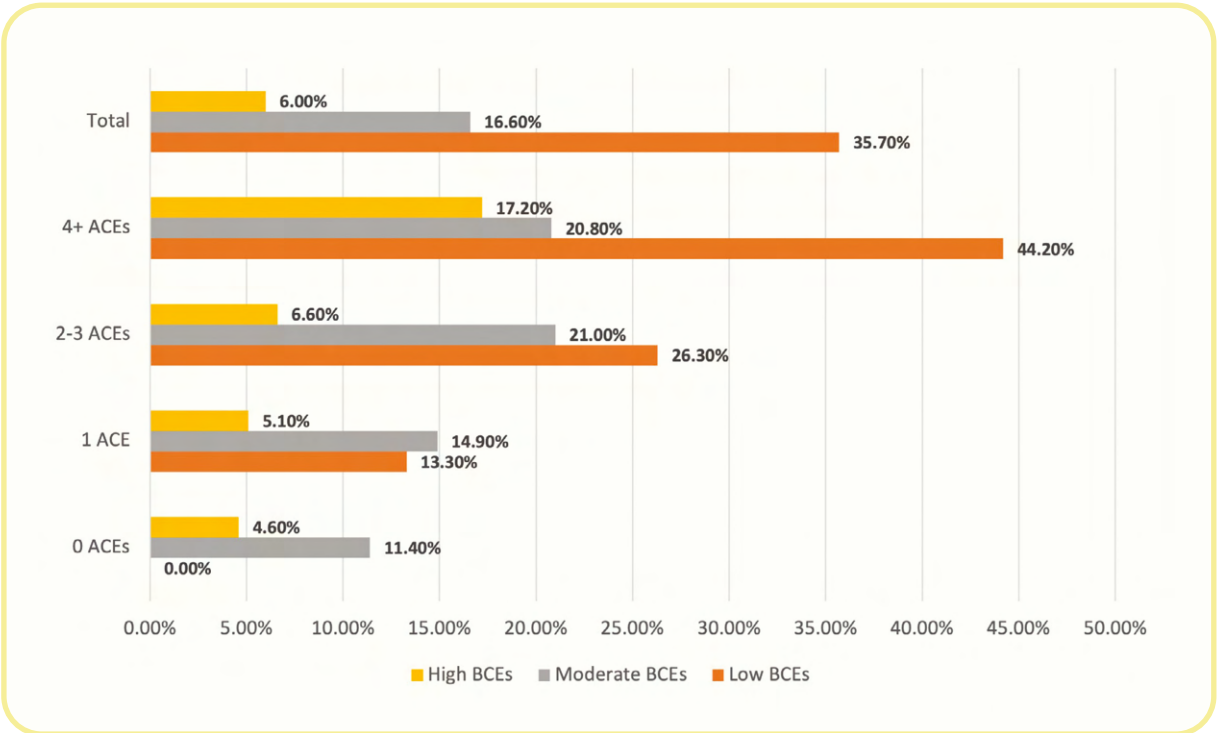


Figure 26: % reporting poor mental wellbeing by ACE count and BCE category

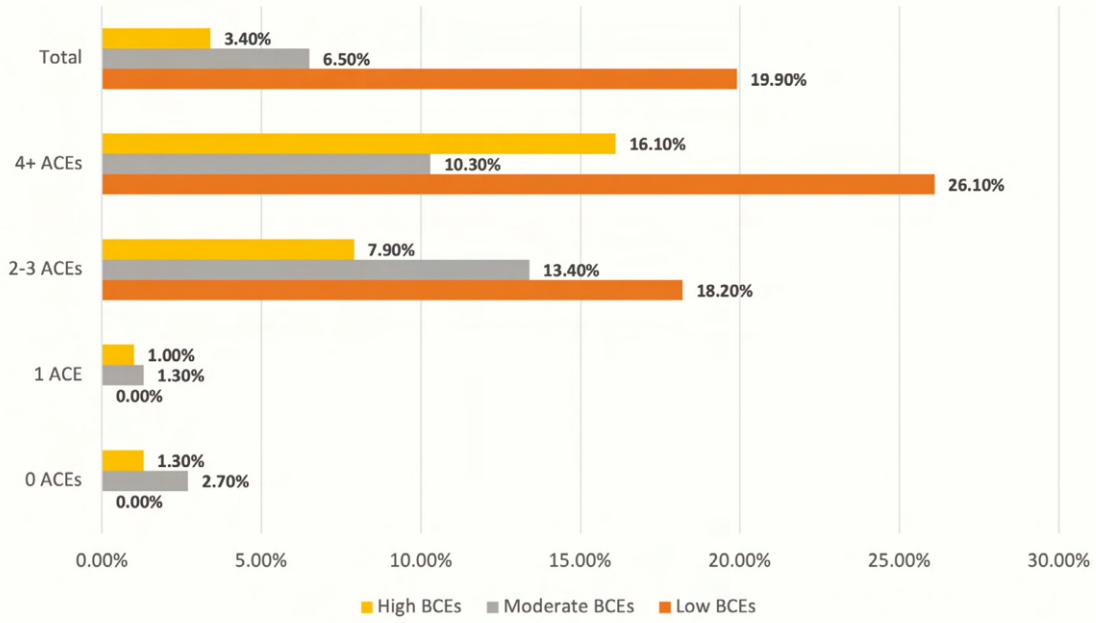


Figure 27: % reporting PTSD/CPSTD by ACE count and BCE category

Across adult mental health outcomes, there were significant reductions when those with 4+ ACEs were adjusted for BCEs. Specifically:

- **the percentage with current anxiety reduced from 54.5% to 35.5%**
- **the percentage with current depression reduced from 52.3% to 22.6%**
- **the percentage with poor mental wellbeing reduced from 44.2% to 17.2%**
- **the percentage with PTSD/CPTSD reduced from 26.1% to 16.1%**
- **the percentage with any adult mental health diagnosis reduced from 58.7% to 27.4%**

BCEs and physical health

Figure 28 compares the percentage of adults with both high levels of ACEs and high levels of BCEs to those with high ACEs and low BCEs across different physical health outcomes. It shows a somewhat different pattern from that observed for mental health outcomes. While those with low BCEs reported the highest proportion of any ongoing current physical health problems, as well as the proportions of asthma, chronic pain, high blood pressure and rheumatoid arthritis, the pattern was reversed for some outcomes with those with high BCEs having the highest proportion of some of the more serious conditions such as angina, cancer and type 2 diabetes.

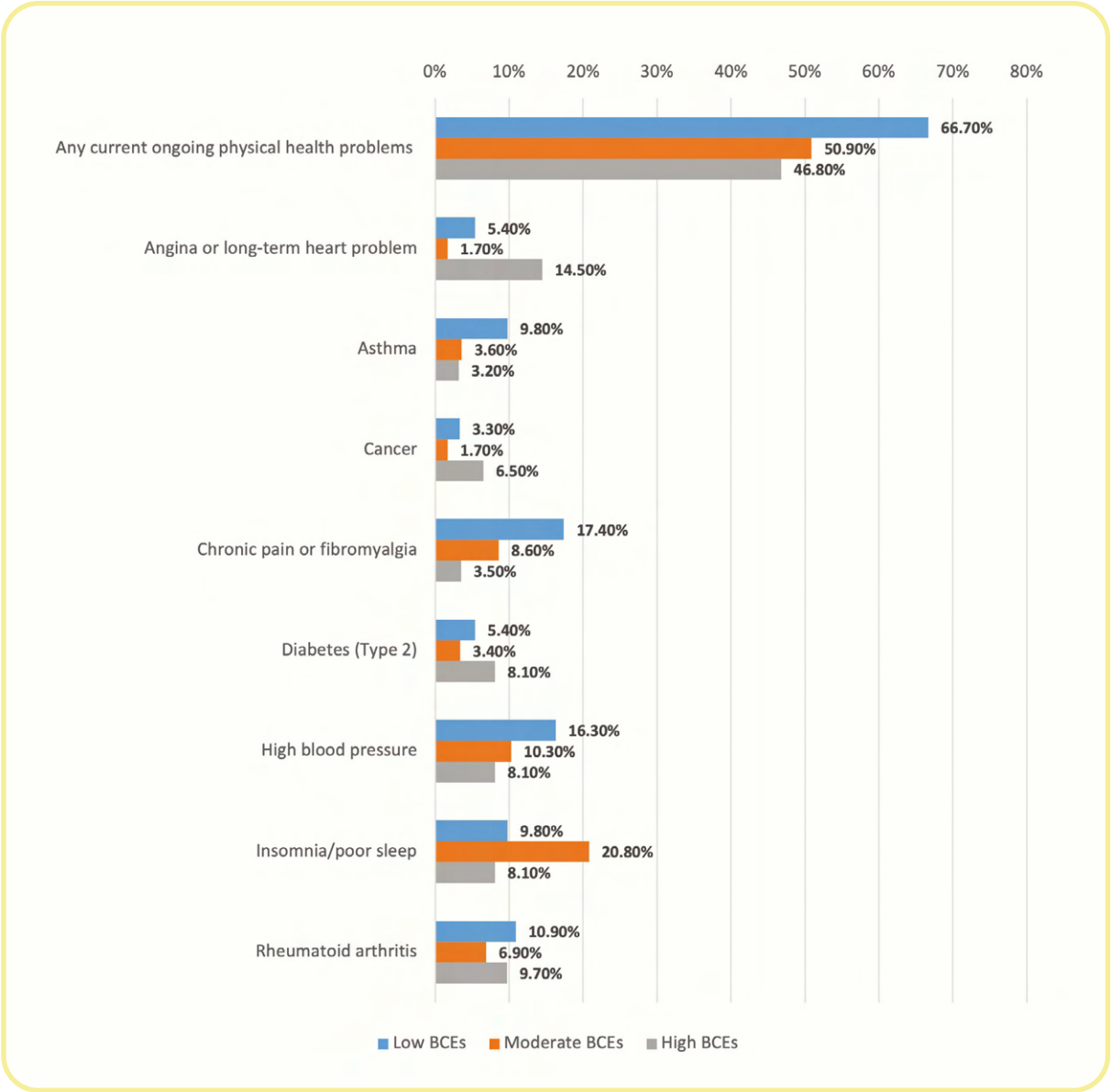


Figure 28: Physical Health Outcomes by BCE Group for High ACEs (4+)

This is potentially attributable to survivorship bias, whereby the respondents with low BCEs had not survived certain conditions, leading to an over-representation of those with high BCEs reporting these conditions within the sample. While this hypothesis could not be directly tested within the data, examination of the differences between age groups in relation to reporting any physical health conditions lends some support for this (see Figure 29). This shows that the expected pattern of higher percentages reporting a physical health condition[3] in the low BCE group was evident for the younger age groups, where it might be expected that survivorship bias had not yet significantly influenced the sample. In the older age group, where we might expect survivorship bias to have the most influence, those with high BCEs reported the highest percentage of physical health conditions.

3 Reporting any physical condition was used as this was the one outcome which had sufficient numbers to meaningfully split the sample by age groups.

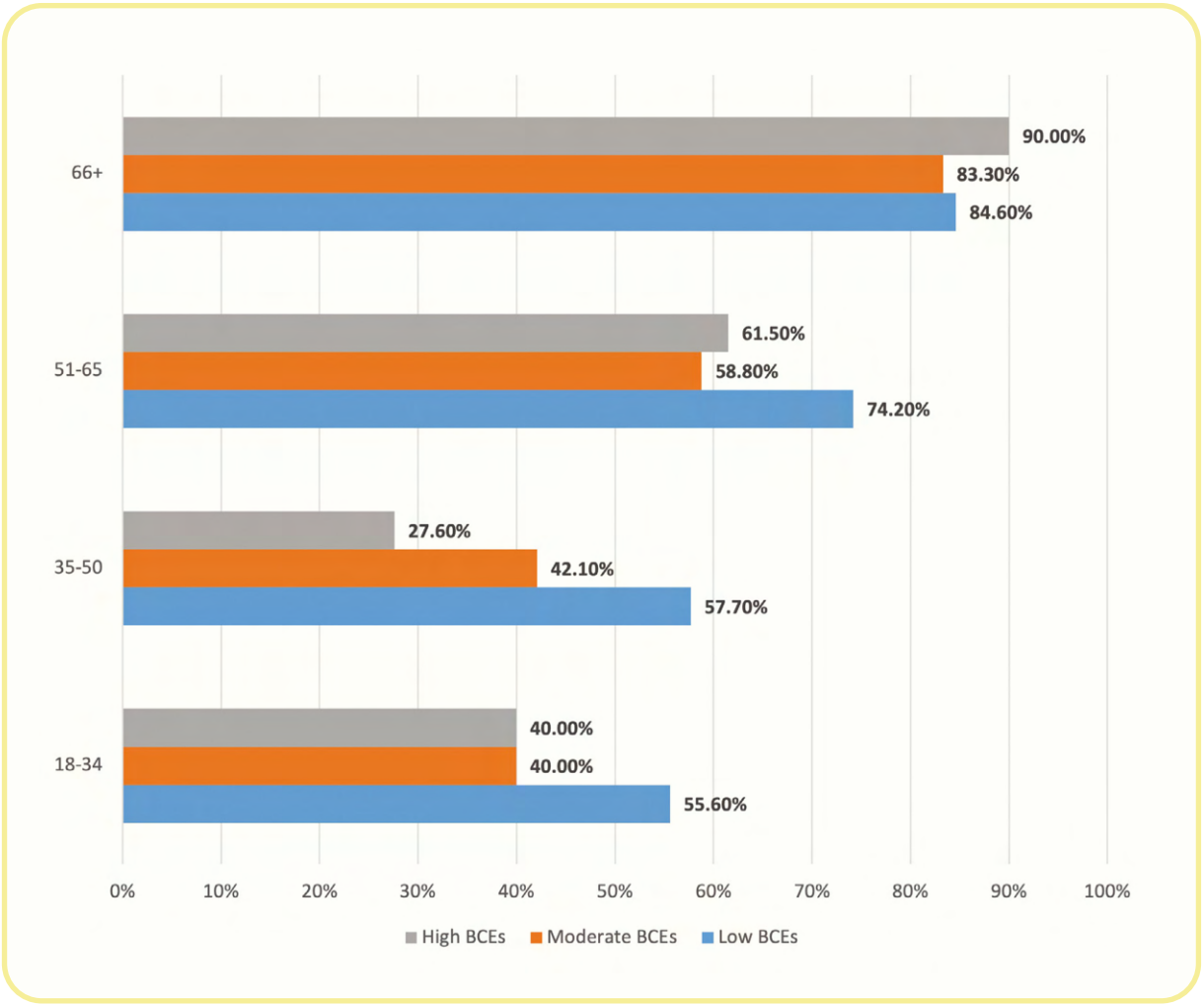


Figure 29: % BCEs by age group

In regression analyses controlling for gender, age, and deprivation, the protective effect of BCEs became more apparent. The influence of ACEs on the likelihood of physical health problems in adulthood was substantially reduced for conditions such as chronic pain/fibromyalgia and insomnia/poor sleep and became non-significant across a range of other health conditions (current ongoing physical health problems, angina or long-term and asthma heart problem, asthma and rheumatoid arthritis (see Appendix 10)). These findings highlight the overall protective effect of BCEs and suggest that survivorship bias is not a significant factor driving the results. Instead, BCEs appear to mitigate the long-term effects of ACEs on physical health outcomes, underscoring their importance in promoting resilience and well-being.

BCEs, Health Behaviours and Service Use

Figure 30 compares the percentage of adults with both high levels of ACEs and high levels of BCEs to those with high ACEs and low BCEs across different health behaviours and service use outcomes. It shows that:

- **the percentage who reported daily smoking or vaping reduced from 50.0% to 25.8%**
- **the percentage who reported any past year drug use reduced from 32.6% to 16.1%**
- **the percentage who reported weekly alcohol consumption over the recommended limit increased from 15.6% to 23.0%**
- **the percentage who reported no daily fruit or veg consumption reduced from 32.9% to 11.9%**
- **the percentage who reported no or low weekly physical activity reduced from 29.2% to 12.9%**
- **the percentage who reported attending an emergency department in the past 3 months was similar (16.5% to 17.7%)**
- **the percentage who reported spending time in hospital in the past 3 months increased from 2.2% to 12.9%**
- **the percentage who reported contacting their GP in the past 3 months in was similar (15.3% vs 16.4%)**
- **the percentage reporting ever having been arrested reduced from 32.1% to 26.2%**

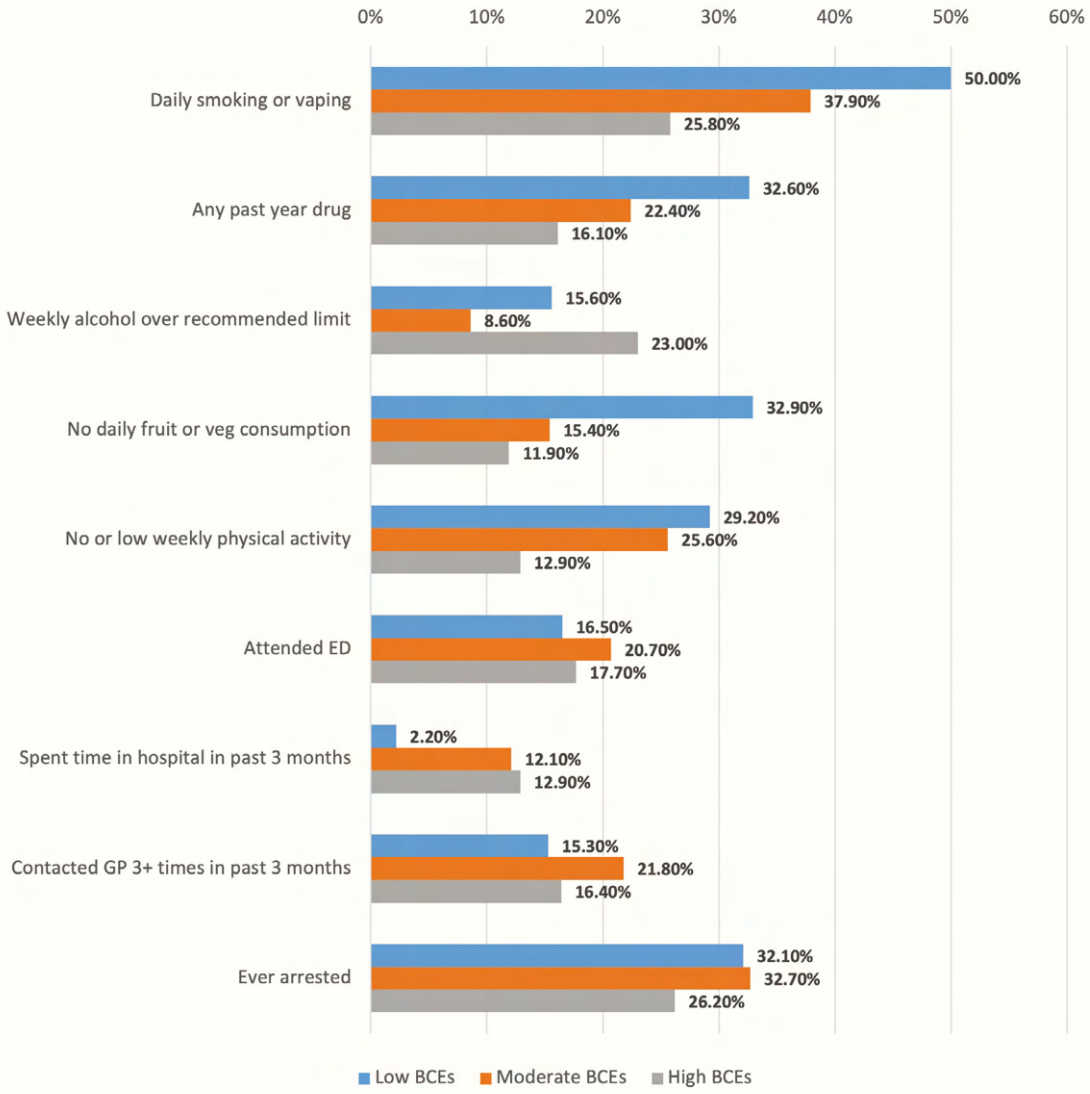


Figure 30: Health behaviours and service use by BCE group for high ACEs (4+)

Similarly, when BCEs were included within regression analysis controlling for age, gender and deprivation level, the effect of ACEs on the health behaviours, although still significant, was reduced across all health behaviour measures (see Appendix 12). The impact of BCEs on health service use was more limited, although there were some small reductions in the likelihood of attending an emergency department or a GP in the previous 3 months, with more substantial reductions in the likelihood of ever having been arrested.

BCEs and adult adversity

Figure 31 compares the percentage of adults with both high levels of ACEs and high levels of BCEs to those with high ACEs and low BCEs across different adult adversity outcomes. It shows that:

- **the percentage who had experienced domestic abuse as an adult reduced from 33.7% to 11.3%**
- **the percentage who had experienced sexual abuse as an adult reduced from 22.8% to 8.1%**
- **the percentage who had lived with a household member who had substance abuse issues reduced from 57.6% to 40.3%**
- **the percentage who had lived with a household member with serious mental health issues reduced from 68.5% to 43.5%**
- **the percentage who had lived with a household member who was in prison reduced from 28.2% to 14.5%**
- **the percentage who had been physically assaulted in past 12 months reduced from 10.2% to 6.6%**
- **the percentage who experienced someone close killed in the Troubles as an adult was similar (22.8% vs 21.0%)**
- **the percentage who experienced someone close injured in the Troubles as an adult was similar, if somewhat higher (25.0% to 27.4%)**

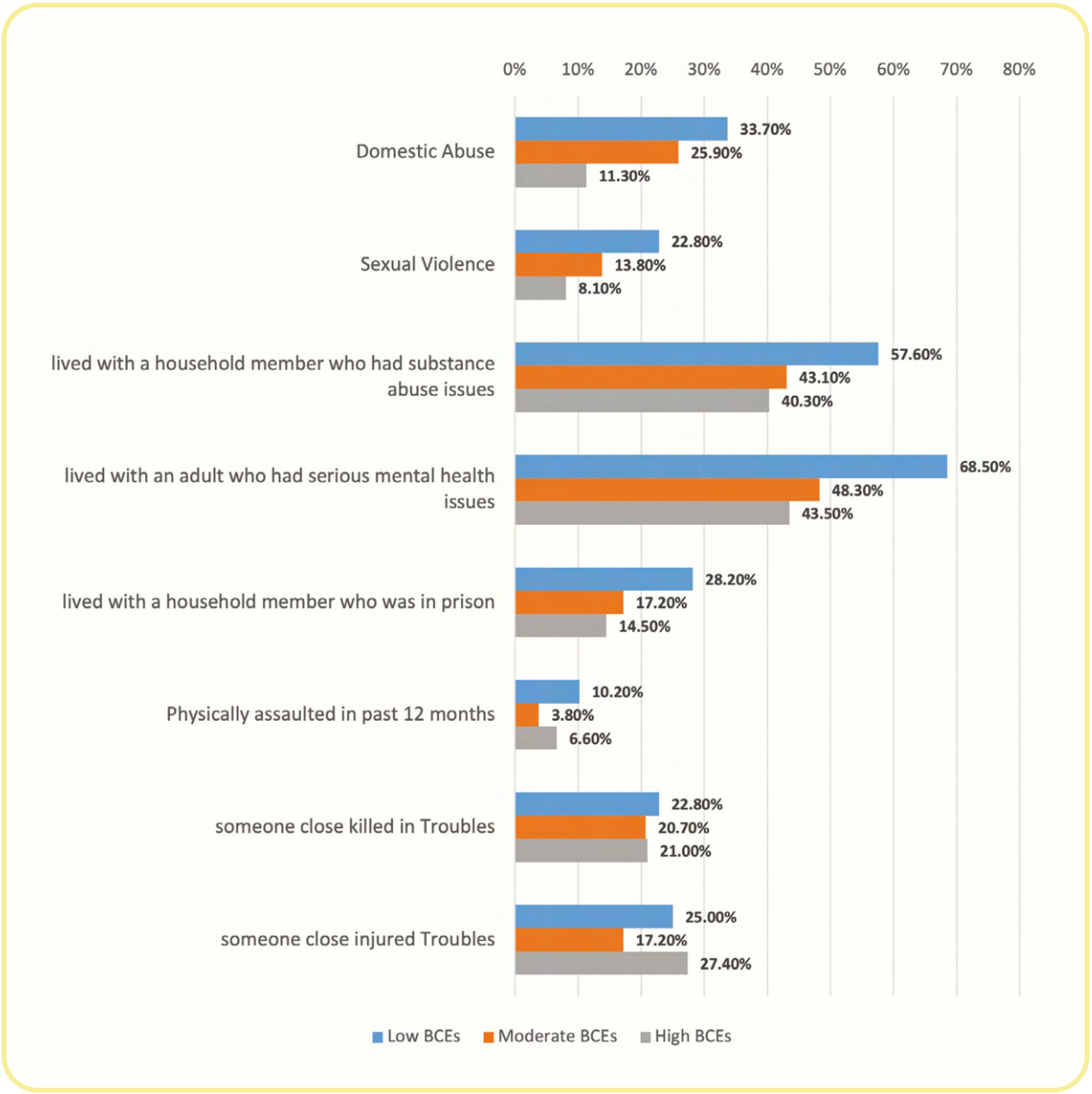


Figure 31: Adult Adversity by BCE Group for High ACEs (4+)

Conclusions and recommendations

This report illustrates, for the first time, the prevalence and impact of Adverse Childhood Experiences (ACEs) in Northern Ireland, emphasising the Northern Ireland's unique context shaped by its history of serious violence and conflict. Key findings include:

1. High ACE Prevalence:

Approximately 60% of the population have experienced at least one ACE, with 17.6% reporting exposure to four or more ACEs. These rates underscore the widespread adversity within the population.

2. Conflict-Related Adversities:

A distinct feature of Northern Ireland's ACE landscape is exposure to conflict-related trauma. Over 30% of respondents reported such adversities, including witnessing violence, experiencing paramilitary threats, or losing loved ones due to violence. These rates were higher in deprived communities, illustrating the socio-economic stratification of harm.

3. Intergenerational and Socio-Economic Patterns:

Higher ACE prevalence was linked to deprivation, reflecting a gradient effect where more deprived communities bear the brunt of adversity. Intergenerational transmission of trauma and adversity was also evident, particularly in families exposed to conflict-related violence.

4. Impacts Across Life Domains:

- **Child Outcomes**: Elevated ACE exposure was strongly associated with poor educational outcomes, including higher rates of school exclusion and special educational needs.
- **Adult Outcomes**: Individuals with 4+ ACEs faced higher risks of physical health issues, mental health disorders, and health-harming behaviours, including substance use and reduced physical activity.
- **Service Utilisation**: Those with significant ACE exposure showed increased interaction with health and justice systems.

5. Implications of Conflict Legacy:

The findings underscore the ongoing effects of Northern Ireland's Troubles, decades after the Good Friday Agreement. Older cohorts reported higher exposure to conflict-related adversities, yet younger generations were not entirely shielded,

reflecting residual and systemic impacts of the conflict. There is also evidence that while collective violence has reduced, community violence has increased among younger age groups.

6. Policy and Practice Implications

To address these challenges, the report advocates for targeted interventions that mitigate ACE exposure and its effects, with particular emphasis on:

- Responding to violence-related adversities.
- Supporting communities with high deprivation.
- Addressing intergenerational trauma.
- Enhancing mental health, educational and youth services to buffer the impacts of childhood adversity.
- Understanding and responding to adult adversity.

This research provides a foundational evidence base for policy and programmatic action tailored to Northern Ireland's distinct socio-political context and highlights the importance of addressing both familial and conflict-related adversities to foster a more resilient population.

Recommendations

Prioritise a public health agenda for Northern Ireland

ACEs are a priority public health issue given the scale of exposure as well as the impact. In the context of conflict, violence experienced in the home, in schools and in communities are particularly salient. These adversities are associated with a range of negative outcomes across the life-course. Public health recognises the impact across society; however, it also compels responses that are collaborative and joined up, targeting those most at risk for preventative and remedial support, investment in testing and scaling up effective and evidence supportive interventions, and evaluating responses. Given the scale of exposure, and the known impact illustrated through this study, a collective public health response could be transformative.

1. **Focus on collaborative and joined-up responses:**
   Preventative and remedial efforts are required within the context of public health framework that recognises the role of joined up and collaborative responses. Adverse childhood experiences are a public health concern (Ports, 2020). The global research base reinforces the preventative potential of public health responses. ACEs research has been driving multi-sectoral efforts underpinned by trauma-informed services (Hughes et al., 2019).

2. **Policy testing:**
   Policy testing is the process of assessing the potential impacts of prospective policies (MWIA, 2011) and has been suggested in other areas such as mental health (Centre for Mental Health, 2024). Decisions made at all levels of government have a ripple effect across society. Policy testing is not about screening policies for potential impact-they all do. It is about examining overlap between policies, potential duplication between them, and areas of policy that contradict one another. Policy testing in this context would endure that decision makers appreciate the impact of adversities experienced in the home and in the community on child and adult outcomes. It would help to frame the commissioning of services and facilitate preventative and targeted supports in areas that could benefit most. Leveraging the example from Mental Wellbeing Impact analysis (MWIA), policy testing would require government departments to consider the known contributory and exacerbating factors for ACEs, as well as the factors that are known to mitigate their effects, and explore, with reference to those, the impact of the policy or programme. For example, this study illustrates that Benevolent Childhood Experiences (BCEs) such as social support has a dampening effect on ACEs. In areas where ACEs are highest, policy makers might consider the extent to which a new policy or programme enhances social support.

3. **Invest in universal and well as targeted and specialist supports to interrupt intergenerational adversity and trauma:**
   The impact of adversity, while predictive of negative outcomes is not deterministic. Prevention is possible. This requires a clear definition of the problem, understanding prevalence and then targeting support at the appropriate levels. ACE exposure is also not necessarily deterministic of negative outcomes. The negative effects can be ameliorated through earlier and more targeted responses, using approaches supported by evidence.

   While childhood adversity can be experienced by anyone. the burden of adversity is not experienced uniformly. It is felt most acutely within the most deprived communities (Bellis et al., 2024). In the context of conflict, these are also the communities that experience the greatest burden of conflict-related violence. This suggests that while population level or universal interventions are important to prevent ACEs and respond to their impact, there are also identifiable areas and groups with higher levels of need who are experiencing considerably more struggles across a number of areas of life such as altered patterns of socio-emotional and behavioural functioning (Dube, 2019; McLaughlin, Weissman and Britan, 2019; Vaidya et al., 2024).

4. **Develop conflict-sensitive interventions**
   This study illustrates the enduring impact of violent conflict on physical and mental health, behavioural and social outcomes. Despite the transition towards peace, the data also illustrates the ongoing presence of paramilitarism and serious violence in some communities. There is a need to design, test and scale up interventions that locate and support those most affected by conflict-related adversity, such as paramilitary violence, threat, bereavement and collective violence. These interventions should reflect the unique socio-political context of NI.

5. **Improve data collection and research**
   Core to a genuine public health approach is high-quality and relevant data. Given the nature of adversity and their impact, this relevant data is held across government. Specifically, criminal justice, health, social care education, housing and employment data each provide distinct insight in the lives and experiences of the NI population. It would be highly useful to explore how this data could be synthesised and shared in order to enhance our understanding of adversity and the impact of those efforts intended to mitigate their impact. Better data collection enhanced and derived from such efforts would also provide evidence around how NI is working towards attaining the policy objectives set by government, as well as those we are completed to achieve through international policy commitments.

6. **Capture the stories behind the data**
   ACE surveys are epidemiological tools to understand what is going on at a population level. They are not designed to be comprehensive individual assessments, screeners or diagnostic tools. Rather, they tell us about what is going on at the population level and possible associations between ACEs and outcomes. Despite these benefits, the population-based study obscures the stories, complexities, mechanisms of impact and coping strategies behind the data. It is recommended that follow-up qualitative inquiry is undertaken in order to capture the complex narratives that bring context and meaning to these data and which would further inform how ACEs may be prevented and how their impact may be more effectively addressed.

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Appendices

Appendix 1: Study questionnaire

Queens Mental Health Survey 2024

To be completed by Interviewer

Interviewer ID

Interviewer name

To be completed by Interviewer

Record unique ID

Record postcode

Confirm age of respondent:

Section A: Demographics

Interviewer read out.

A1 Are you

- Male
- Female
- Other
- *Prefer not to say*

SHOWCARD

A2 Which of the following best describes your ethnic group or background?
Please read out the number that corresponds to your answer

- 1. White - Irish
- 2. White - British
- 3. White - Other, please write in
- 4. Chinese
- 5. Irish Traveller
- 6. Roma
- 7. Indian
- 8. Filipino
- 9. Black African
- 10. Black Other
- 11. Mixed ethnic group, please write in:
- 12. Any other ethnic group, please write in:
- *Prefer not to say*

A2 White - Other, please write in:

A2 Mixed ethnic group, please write in:

A2 Any other ethnic group, please write in:

SHOWCARD

A3a What religion, religious denomination or body do you belong to?
Please read out the number that corresponds to your answer

- 1. Roman Catholic
- 2. Presbyterian Church in Ireland
- 3. Church of Ireland
- 4. Methodist Church in Ireland
- 5. Other Protestant denomination
- 6. Other religion, please write in:
- 7. No religion
- *Prefer not to say*

A3 Other, please write in:

SHOWCARD

A3b What religion, religious denomination or body were you brought up in?
Please read out the number that corresponds to your answer

- ◯ 1. Roman Catholic
- ◯ 2. Presbyterian Church in Ireland
- ◯ 3. Church of Ireland
- ◯ 4. Methodist Church in Ireland
- ◯ 5. Other Protestant denomination
- ◯ 6. Other religion, please write in:
- ◯ 7. No religion
- ◯ *Prefer not to say*

A3 Other, please write in:

A4 During the first 18 years of life, how many of those were spent living in Northern Ireland?

SHOWCARD

A5 Which of these options best describes how you think of yourself?
Please read out the number that corresponds to your answer

- ◯ 1. Straight or heterosexual
- ◯ 2. Gay or lesbian
- ◯ 3. Bisexual
- ◯ 4. Other sexual orientation
- ◯ *Prefer not to say*

SHOWCARD

A6 What is the highest school certificate or degree you have?
Please read out the number that corresponds to your answer

- 1. No formal qualifications
- 2. Less than 5 GCSEs, O Levels or CSEs (any grade)
- 3. 5 or more GCSEs, O Levels or CSEs (passes)
- 4. A Level
- 5. NVQ level 1
- 6. NVQ level 2, BTEC General, OND or ONC, City and Guilds Advanced Craft
- 7. NVQ level 3, BTEC National, OND or ONC, City and Guilds Advanced Craft
- 8. Foundation degree, Masters, Post-graduate degree, Degree, HND or HNC, NVQ Level 4 and above, teaching or nursing
- 9. Other qualification, please specify
- *Don't know*
- *Prefer not to say*

A6 Other qualification, please specify.
If possible, please indicate the equivalent level in the UK system

A7 Have you ever done any paid work?

- Yes, in the last 12 months
- Yes, but not in the last 12 months
- No, have never worked
- *Prefer not to say*

SHOWCARD

A8 In the last 7 days, were you doing any of the following?

- 1. Working as an employee
- 2. Self employed or freelance
- 3. Temporarily away from work ill, on holiday or temporarily laid off
- 4. On maternity or paternity leave
- 5. Doing any other kind of paid work
- 6. None of the above
- *Prefer not to say*

A9 What is the occupation of the chief income earner in your household?
Record occupation and code socio-economic group below
If retired, ask former occupation

- ◯ AB
- ◯ C1
- ◯ C2
- ◯ DE
- ◯ *Refused*
- ◯ *Unsure, to be coded by office*

SHOWCARD

A10 What is your total GROSS personal income per week?

- ◯ 1. Under £149
- ◯ 2. £150-204
- ◯ 3. £205-£279
- ◯ 4. £280-392
- ◯ 5. More than £393
- ◯ *Don't know*
- ◯ *Prefer not to say*

A11 Are you currently in receipt of any state benefits?

INTERVIEWER NOTE:

This DOES NOT include Child Benefit, which most people with children are entitled to. It DOES include Child Tax Credits

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

SHOWCARD

A12 What is your marital or civil partnership status?

- ◯ 1. Single (never married and never in a civil partnership)
- ◯ 2. Married
- ◯ 3. Divorced or separated
- ◯ 4. Widowed
- ◯ 5. In a civil partnership
- ◯ 6. Separated, but still legally in a civil partnership
- ◯ 7. Formerly in a civil partnership which is now legally dissolved
- ◯ 8. Surviving partner from a civil partnership
- ◯ *Prefer not to say*

A13 Are you living with a partner?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

A14 If you are a mother or father, how many children have you had?
None=0
Prefer not to say=888

[ ]

A15 If you are a mother or father, at what age were you when your first child was born?
Prefer not to say=888

[ ]

A16 Did you or your family live in Northern Ireland at the time of the Troubles?

- ◯ Yes
- ◯ No (my family lived outside Northern Ireland during the Troubles)

INTERVIEWER

The following sections are SELF-COMPLETE and should be completed by the RESPONDENT.

Please hand the iPad to the respondent and ensure they are able to use it. Ask the respondent not to use the back button

INTERVIEWER: Confirm who is completing this section:

- ◯ Respondent self-complete
- ◯ *Interviewer read out*

Why is this section not self-completed by the respondent?

[ ]

Section B: During childhood

These next number of questions are about your experiences during the first 18 years of life.

B1 During your first 18 years of life...

	Yes	No	*Prefer not to say*
Did you have at least one caregiver with whom you felt safe?	○	○	○
Did you have at least one good friend?	○	○	○
Did you have beliefs that gave you comfort?	○	○	○
Did you like school?	○	○	○
Did you have at least one teacher who cared about you?	○	○	○
Did you have good neighbours?	○	○	○
Was there an adult (not a parent/caregiver) who could provide you with support and advice?	○	○	○
Did you have opportunities to have a good time?	○	○	○
Did you like or feel comfortable with yourself?	○	○	○
Did you have a predictable home routine, like regular meals and regular bedtime?	○	○	○

B2 During the first 18 years of your life, were there ever, or did others have concerns about your health?

- ○ Yes
- ○ No
- ○ *Prefer not to say*

ASK IF B2=1

B3 Were you ever diagnosed with any long-term or chronic illness during childhood?

- ○ Yes
- ○ No
- ○ *Prefer not to say*

Please name the illness in a few words

B4 During the first 18 years of your life were you ever hospitalised overnight (including as a baby)?

- ○ Yes
- ○ No
- ○ *Prefer not to say*

ASK IF B4=1

B5 What age range/s were you when you were hospitalised?
Tick all that apply

- [ ] 0-3
- [ ] 4-6
- [ ] 7-12
- [ ] 13-18
- [ ] *Prefer not to say*

ASK IF B4=1

B6 Approximately, in number of nights, how long was your longest stay in hospital?
Prefer not to say=999

B7 Did you have any diagnosed or suspected special educational needs during childhood?

- ○ Yes
- ○ No
- ○ *Prefer not to say*

B8 During childhood, were you ever formally excluded from school (e.g., suspended or expelled)?

- ○ Yes
- ○ No
- ○ *Prefer not to say*

B9 During childhood, did you ever live away from home...?
Tick all that apply

- [ ] In a children's home or residential unit
- [ ] With foster carers (non-relatives)
- [ ] With kinship carers (a placement with family members arranged by social workers)
- [ ] With kinship carers (a placement with family members not arranged by social workers)
- [ ] In secure accommodation or a juvenile justice unit
- [ ] In a training school or borstal
- [ ] Other, please specify
- [ ] None of the above
- [ ] *Prefer not to say*

B9 Other, please specify

B10 Did you ever accidentally get pregnant or accidentally get someone else pregnant before you were aged 18 years?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

Section C: Relationships with parents/guardians

When you were growing up, during the first 18 years of life...

C1 Did your parents/guardians understand your problems and worries?

- ◯ Always
- ◯ Most of the time
- ◯ Sometimes
- ◯ Rarely
- ◯ Never
- ◯ *Prefer not to say*

C2 Did your parents/guardians really know what you were doing with your free time when you were not at school or work?

- ◯ Always
- ◯ Most of the time
- ◯ Sometimes
- ◯ Rarely
- ◯ Never
- ◯ *Prefer not to say*

When you were growing up, during the first 18 years of life...

C3 How often did your parents/guardians NOT give you enough food even when they could easily have done so?

- ◯ Many times
- ◯ A few times
- ◯ Never
- ◯ *Prefer not to say*

C4 Were your parents/guardians too drunk or intoxicated by drugs to take care of you?

- ◯ Many times
- ◯ A few times
- ◯ Never
- ◯ *Prefer not to say*

C5 How often did your parents/guardians NOT send you to school even when it was available?

- ◯ Many times
- ◯ A few times
- ◯ Never
- ◯ *Prefer not to say*

Section D: Family environment

When you were growing up, during the first 18 years of your life...

D1 Did you live with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

D2 Did you live with a household member who was depressed, mentally ill or suicidal?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

When you were growing up, during the first 18 years of life...

D3 Did you live with a household member who was ever sent to jail or prison?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

ASK IF LIVED IN NI DURING TROUBLES (A16) AND D3=1

D4 Was this related to the Troubles/conflict in Northern Ireland?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

D5 In the first 18 years of your life, were your parents ever separated or divorced?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

D6 In the first 18 years of your life, did your mother, father or guardian die?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

These next questions are about certain things you may actually have heard or seen IN YOUR HOME.
These are things that may have been done to another household member but not necessarily to you.

When you were growing up, during the **first 18 years of your life**...

	Many times	A few times	Once	Never	*Prefer not to say*
D7 Did you see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted or humiliated?	◯	◯	◯	◯	◯
D8 Did you see or hear a parent or household member in your home being slapped, kicked, punched or beaten up?	◯	◯	◯	◯	◯
D9 Did you see or hear a parent or household member in your home being hit or cut with an object, such as a stick (or cane), bottle, club, knife, whip etc.?	◯	◯	◯	◯	◯

These next questions are about certain things YOU may have experienced.

When you were growing up, during the **first 18 years of your life**...

	Many times	A few times	Once	Never	*Prefer not to say*
D10 Did a parent, guardian or other household member yell, scream or swear at you, insult or humiliate you?	◯	◯	◯	◯	◯

D11 Did a parent, guardian or other household member threaten to, or actually, abandon you or throw you out of the house?	○	○	○	○	○
D12 Did a parent, guardian or other household member spank, slap, kick, punch or beat you up?	○	○	○	○	○
D13 Did a parent, guardian or other household member hit or cut you with an object, such as a stick (or cane), bottle, club, knife, whip etc.?	○	○	○	○	○
D14 Did someone touch or fondle you in a sexual way when you did not want them to?	○	○	○	○	○
D15 Did someone make you touch their body in a sexual way when you did not want them to?	○	○	○	○	○
D16 Did someone attempt oral, anal, or vaginal intercourse with you when you did not want them to?	○	○	○	○	○
D17 Did someone actually have oral, anal, or vaginal intercourse with you when you did not want them to?	○	○	○	○	○

D18 If you have ever experienced any form of sexual assault, were any of these experiences related to the Troubles/Conflict?

- ○ Yes
- ○ No
- ○ Not applicable

Section E: Peer violence

These next questions are about BEING BULLIED either online or in person when you were growing up.

Bullying is when a young person or group of young people say or do bad and unpleasant things to another young person either online or in person. It is also bullying when a young person is teased a lot in an unpleasant way or when a young person is left out of things on purpose. It is not bullying when two young people of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.

When you were growing up, during the first 18 years of your life...

E1 How often were you bullied?

- ◯ Many times
- ◯ A few times
- ◯ Once
- ◯ Never
- ◯ *Prefer not to say*

ASK IF E1=1,2,3

E2 How were you bullied most often?

- ◯ I was hit, kicked, pushed, shoved around, or locked indoors
- ◯ I was made fun of because of my race, nationality or colour
- ◯ I was made fun of because of my religion
- ◯ I was left out of activities on purpose or completely ignored
- ◯ I was made fun of because of how my body or face looked
- ◯ I was bullied in some other way
- ◯ *Prefer not to say*

Section F: Violence (non-conflict related)

The next few sections are going to ask you about experiences of troubles/conflict and non-troubles/conflict-related violence. The first set of questions are about NON-Troubles/conflict related violence

Fighting

This next question is about PHYSICAL FIGHTS. A physical fight occurs when two young people of about the same strength or power choose to fight each other.

When you were growing up, during the first 18 years of your life...

F1 How often were you in a physical fight?

- ◯ Many times
- ◯ A few times
- ◯ Once
- ◯ Never
- ◯ *Prefer not to say*

Institutional violence

Institutional violence is any form of humiliation, degrading treatment, neglect, and abuse with institutions such as schools and churches.

F2 Thinking about this definition, were you ever the victim of institutional violence?

- ◯ Many times
- ◯ A few times
- ◯ Once
- ◯ Never
- ◯ *Prefer not to say*

Witnessing community violence

These next questions are about how often, when you were a child, YOU may have seen or heard certain things in your NEIGHBOURHOOD OR COMMUNITY (not in your home or on TV, movies, or the radio).

When you were growing up, during the first 18 years of your life...

	Many times	A few times	Once	Never	*Prefer not to say*
F3 Did you see or hear someone being beaten up in real life?	◯	◯	◯	◯	◯
F4 Did you see or hear someone being stabbed or shot in real life?	◯	◯	◯	◯	◯
F5 Did you see or hear someone being threatened with a knife or gun in real life?	◯	◯	◯	◯	◯

War/collective violence

These questions are about whether YOU did or did not experience any of the following events when you were a child.

The events are all to do with collective violence, including **wars, terrorism, political or ethnic conflicts, genocide, repression, disappearances, torture and organised violent crime** such as banditry and gang warfare. For example, Troubles/conflict related paramilitary/sectarian/security force related violence.

When you were growing up, during the first 18 years of your life...

	Many times	A few times	Once	Never	*Prefer not to say*
F6 Were you forced to go and live in another place due to any of these events?	◯	◯	◯	◯	◯

F7 Did you experience the deliberate destruction of your home due to any of these events?	○	○	○	○	○
F8 Were you beaten up by soldiers, police, militia, paramilitaries, or other gangs?	○	○	○	○	○

F9 Which of these groups were you beaten up by?
Tick all that apply

- ☐ Soldiers
- ☐ Police
- ☐ Militia
- ☐ Paramilitaries
- ☐ Someone from the other religion (Catholic/Protestant)
- ☐ Other gang, please specify
- ☐ *Prefer not to say*

Other gang, please specify

F10 Were the majority of experiences inside or outside of Northern Ireland or Republic of Ireland?

- ○ The majority of experiences were inside Northern Ireland/Republic of Ireland
- ○ The majority of experiences were outside Northern Ireland/Republic of Ireland
- ○ Not applicable

Section G: Troubles-related experiences during the first 18 years of your life

A16=1 for this section

When you were growing up, during the first 18 years of life...

G1 Have you ever experienced a traumatic event related to the Troubles/conflict?

- ○ Many times
- ○ A few times
- ○ Once
- ○ Never
- ○ *Prefer not to say*

ASK IF G1=1,2,3

G2 Thinking about the Troubles/conflict, did you experience any of the following?
Tick all that apply

- [ ] A close friend was killed
- [ ] A close relative was killed
- [ ] Someone else you knew was killed
- [ ] None of the above
- [ ] *Prefer not to say*

ASK IF G1=1,2,3

G3 Thinking about the Troubles/conflict, did you experience any of the following?
Tick all that apply

- [ ] I was physically injured
- [ ] A close friend was physically injured
- [ ] A close relative was physically injured
- [ ] Someone else you knew was physically injured
- [ ] None of the above
- [ ] *Prefer not to say*

When you were growing up, during the first 18 years of life...

G4 Have you yourself directly witnessed any of the following?

- [ ] A bomb explosion
- [ ] A murder
- [ ] Gunfire
- [ ] Rioting
- [ ] A paramilitary style assault
- [ ] A sectarian assault
- [ ] Kidnapping or false imprisonment
- [ ] Damage to property
- [ ] Deliberate wounding
- [ ] Intimidation
- [ ] Hijacking of own vehicle
- [ ] Hijacking while in another vehicle
- [ ] Other serious violence (please specify)
- [ ] None of the above
- [ ] *Prefer not to say*

G4 Other serious violence, please specify

G5 Were you ever threatened by someone you believed to be in a paramilitary group?

- ◯ Many times
- ◯ A few times
- ◯ Never
- ◯ *Prefer not to say*

G6 Thinking of the worst thing that happened to you because of the Troubles/conflict, when was this?

- ◯ 1969-1973
- ◯ 1974-1978
- ◯ 1979-1983
- ◯ 1984-1988
- ◯ 1989-1993
- ◯ 1994-1998
- ◯ 1998-2002
- ◯ 2003-2006
- ◯ 2007-2011
- ◯ 2012-2016
- ◯ 2017-2020
- ◯ 2020-2024
- ◯ Not applicable
- ◯ *Prefer not to say*

Section H: During adulthood

Thinking about your life nowadays...

H1 Overall, how satisfied are you with your quality of life nowadays?

- ◯ 1 - Not at all satisfied
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8
- ◯ 9
- ◯ 10 - Completely satisfied
- ◯ *Prefer not to say*

Thinking about your life nowadays...

H2 How many people are so close to you that you can count on them if you have great personal problems?

- ◯ None
- ◯ 1 to 2
- ◯ 3 to 5
- ◯ 5 or more
- ◯ *Prefer not to say*

H3 How much interest and concern do people show in what you do?

- ◯ None
- ◯ A little
- ◯ Uncertain
- ◯ Some
- ◯ A lot
- ◯ *Prefer not to say*

H4 How easy is it to get practical help from others should you need it?

- ◯ Very difficult
- ◯ Difficult
- ◯ Possible
- ◯ Easy
- ◯ Very easy
- ◯ *Prefer not to say*

Thinking about your life nowadays...

H5 How much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	*Prefer not to say*
a. People around here are willing to help their neighbours	○	○	○	○	○	○
b. This is a close-knit community	○	○	○	○	○	○
c. People in this community can be trusted	○	○	○	○	○	○
d. People in this community generally don't get on with each other	○	○	○	○	○	○
e. People in this community do not share the same values	○	○	○	○	○	○

Thinking about your life nowadays...

H6 How much confidence do you have in the police?

- ○ A lot of confidence
- ○ A fair amount of confidence
- ○ Not very much confidence
- ○ No confidence at all
- ○ *Prefer not to say*

Section I: Health and mental health

I1 Below are some statements about feelings and thoughts.
Please tick the box that best describes your experience of each over the last 2 weeks.

	None of the time	Rarely	Some of the time	Often	All of the time	*Prefer not to say*
a. I've been feeling optimistic about the future	○	○	○	○	○	○
b. I've been feeling useful	○	○	○	○	○	○
c. I've been feeling relaxed	○	○	○	○	○	○
d. I've been dealing with problems well	○	○	○	○	○	○
e. I've been thinking clearly	○	○	○	○	○	○
f. I've been feeling close to other people	○	○	○	○	○	○
g. I've been able to make up my own mind about things	○	○	○	○	○	○

I2 Do you have any physical health conditions or illnesses that have, or are expected to last for 12 months or more?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

ASK IF I2=1

I3 Thinking about your health, do you currently have any of the following health conditions, problems or illnesses?

- ☐ Alzheimer's disease or dementia
- ☐ Angina or long-term heart problem
- ☐ Asthma
- ☐ Attention deficit hyperactivity disorder (ADHD)
- ☐ Autism spectrum disorder (ASD) or Asperger's syndrome
- ☐ Cancer
- ☐ Chronic pain or fibromyalgia
- ☐ Chronic obstructive pulmonary disease (COPD) or long term lung problems
- ☐ Diabetes (Type 1)
- ☐ Diabetes (Type 2)
- ☐ Epilepsy or other conditions that affect the brain
- ☐ High blood pressure
- ☐ Insomnia/poor sleep
- ☐ Kidney or liver disease
- ☐ Learning disability
- ☐ Stroke or cerebral hemorrhage
- ☐ Rheumatoid arthritis
- ☐ Other (please specify)
- ☐ *Prefer not to say*

I3 Other, please specify

I4 Do you have any mental health conditions or illnesses that have, or are expected to last for 12 months or more?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

ASK IF I4=1

I5 Have you ever been diagnosed with any of the following mental health issues IN ADULTHOOD?

- [ ] Anxiety
- [ ] Depression
- [ ] Post-traumatic stress disorder
- [ ] Eating disorder
- [ ] Obsessive compulsive disorder
- [ ] Personality disorder
- [ ] Other mental health issue (please specify)
- [ ] *Prefer not to say*

I5 Other mental health issue, please specify

I6 How often, if at all, do you have money left over at the end of the month?

- ◯ Always
- ◯ Often
- ◯ Sometimes
- ◯ Rarely
- ◯ Never
- ◯ *Prefer not to say*

I7 Do you struggle with debt?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

I8 Have you ever borrowed money from an unauthorised or unlicensed money lender?

- ◯ Yes
- ◯ No
- ◯ Not sure
- ◯ *Prefer not to say*

As an **adult** (since the age of 18)...

	Never	Once	A few times	Many times	*Prefer not to say*
I9 Has another household member hit, slapped, kicked, punched or beat you up?	◯	◯	◯	◯	◯

I10 Has someone touched or fondled you in a sexual way, attempted to force you, or forced you to have oral, anal, or vaginal intercourse when you did not want to?

I11 As an adult (since the age of 18), have you ever lived with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs?

- Yes
- No
- *Prefer not to say*

I12 As an adult (since the age of 18) have you ever lived with a household member who was in prison?

- Yes
- No
- *Prefer not to say*

ASK IF LIVED IN NI DURING TROUBLES AT A16 AND I12=1

I13 Was this related to the Troubles/conflict?

- Yes
- No
- *Prefer not to say*

I14 As an adult (since the age of 18), have you ever lived with a household member who was depressed, mentally ill or suicidal?

- Yes
- No
- *Prefer not to say*

I15 Since the age of 18, thinking about the Troubles/conflict, did you experience any of the following?
Tick all that apply

- A close friend was killed
- A close relative was killed
- Someone else you knew was killed
- None of the above
- *Prefer not to say*

I16 Since the age of 18, thinking about the Troubles/conflict, did you experience any of the following?
Tick as many as you like

- ☐ I was physically injured
- ☐ A close friend was physically injured
- ☐ A close relative was physically injured
- ☐ Someone else you knew was physically injured
- ☐ None of the above
- ☐ *Prefer not to say*

I17 Over the last two weeks, how often have you been bothered by the following problems?

	Not at all	A few times (1 to 7 days)	More than half the days (8-12 days)	Most or every day (13-14 days)	*Prefer not to say*
a. Feeling nervous, anxious or on-edge	○	○	○	○	○
b. Not being able to stop or control worrying	○	○	○	○	○
c. Feeling down, depressed or hopeless	○	○	○	○	○
d. Little interest or pleasure in doing things	○	○	○	○	○

Section J: ITQ

Please think about the experience that troubles you most and answer the questions in relation to this experience.

Below are a number of problems that people sometimes report in response to traumatic or stressful life events. Please read each item carefully, then tick to indicate how much you have been bothered by that problem in the past month.

J1 In the past month, has the experience led to you...?

	Not at all	A little bit	Moderately	Quite a bit	Extremely	*Prefer not to say*
a. Having upsetting dreams that replay part of the experience or are clearly related to the experience?	○	○	○	○	○	○
b. Having powerful images or memories that sometimes come into your mind in which you feel the experience is happening again in the here and now?	○	○	○	○	○	○
c. Avoiding internal reminders of the experience (for example, thoughts, feelings, or physical sensations)?	○	○	○	○	○	○

d. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	○	○	○	○	○	○
e. Being 'superalert' or watchful or on guard?	○	○	○	○	○	○
f. Feeling jumpy or easily startled?	○	○	○	○	○	○

J2 In the past month, have the above problems affected your relationships or social life, your work or ability to work or, any other important part of your life such as parenting, or school or college work, or other important activities?

- ○ Not at all
- ○ A little bit
- ○ Moderately
- ○ Quite a bit
- ○ Extremely
- ○ *Prefer not to say*

Below are problems or symptoms that people who have had stressful or traumatic events sometimes experience. The questions refer to ways you typically feel, ways you typically think about yourself and ways you typically relate to others. Answer the following thinking about how true each statement is of you.

J3 How true are each of the following statements to you?

	Not at all	A little bit	Moderately	Quite a bit	Extremely	*Prefer not to say*
a. When I am upset, it takes me a long time to calm down	○	○	○	○	○	○
b. I feel numb or emotionally shut down	○	○	○	○	○	○
c. I feel like a failure	○	○	○	○	○	○
d. I feel worthless	○	○	○	○	○	○
e. I feel distant or cut off from people	○	○	○	○	○	○
f. I find it hard to stay emotionally close to people	○	○	○	○	○	○

J4 In the past month, have the above problems in emotions, in beliefs about yourself and in relationships;

Affected your relationships or social life, your work or ability to work, or any other important part of your life such as parenting, or school or college work, or other important activities?

- ◯ Not at all
- ◯ A little bit
- ◯ Moderately
- ◯ Quite a bit
- ◯ Extremely
- ◯ *Prefer not to say*

Section K: Lifestyle

K1 On a normal day, how many portions of fruit and vegetables (excluding potatoes) would you usually eat (one portion is roughly one handful or a full piece of fruit such as an apple)?
Not sure=999
Prefer not to say=888

K2 Usually, how many days each week do you take part in at least 30 minutes of physical activity that makes you breathe quicker, like walking quickly, cycling, sports or exercise?
Not sure=999
Prefer not to say=888

K3 In terms of smoking tobacco, in the past 12 months how often did you smoke?

- ◯ Daily
- ◯ Several times per week
- ◯ Weekly
- ◯ Monthly
- ◯ Never
- ◯ *Prefer not to say*

K4 In terms of using vapes, in the past 12 months how often have you vaped?

- ◯ Daily
- ◯ Several times per week
- ◯ Weekly
- ◯ Monthly
- ◯ Never
- ◯ *Prefer not to say*

K5 How often do you have a drink containing alcohol?

- ◯ Never
- ◯ Monthly or less often
- ◯ 2-4 times per month
- ◯ 2-3 times per week
- ◯ 4 times or more per week
- ◯ *Prefer not to say*

ASK IF DRINK ALCOHOL AT K5

K6 How many units of alcohol do you drink on a typical day when you are drinking?

One glass of wine or pint of beer is equivalent to approx 2 units of alcohol.

- ◯ 0-2
- ◯ 3-5
- ◯ 5-7
- ◯ 7-9
- ◯ 10 or more
- ◯ *Prefer not to say*

ASK IF DRINK ALCOHOL AT K5

K7 How often have you had 6 or more units (Approx. 3 x pint lager/beer/cider or 3 x glass of wine) if female, or 8 or more if male (Approx. 4 x pint lager/beer/cider or 4 x glass of wine), on a single occasion in the last year?

- ◯ Less than monthly
- ◯ Monthly
- ◯ Weekly
- ◯ Daily
- ◯ *Prefer not to say*

K8 Other than alcohol, how often have you used the following drugs in the last 12 months?

	Never	Once or twice a year	Occasionally (several times a year)	At least monthly but not weekly	Only at the weekends	Most days	Every day	*Prefer not to say*
a. Cannabis	○	○	○	○	○	○	○	○
b. Cocaine	○	○	○	○	○	○	○	○
c. Opiates (e.g. heroin, fentanyl)	○	○	○	○	○	○	○	○
d. Legal highs (e.g. spice)	○	○	○	○	○	○	○	○
e. Hallucinogens (e.g. ecstasy, LSD, magic mushrooms)	○	○	○	○	○	○	○	○
f. Solvents (e.g., thinner, glue, gas)	○	○	○	○	○	○	○	○
g. Pills not prescribed to you (e.g. painkillers, sleeping pill/sedatives)	○	○	○	○	○	○	○	○
h. Other drugs (please specify)	○	○	○	○	○	○	○	○

K8 Other drugs, please specify

K9 How old were you the first time you had sexual intercourse?

- ○ Under 12 years
- ○ 12 to 15 years
- ○ 16 to 17 years
- ○ 18 years or older
- ○ Not applicable
- ○ *Not sure*
- ○ *Prefer not to say*

K10 How many times have you physically hit someone in the past 12 months?
Prefer not to say=888
Not sure=999

K11 How many times have you been physically hit in the past 12 months?
Prefer not to say=888
Not sure=999

K12 How many times have you been arrested in your entire life?
Prefer not to say=888
Not sure=999

ASK IF HAVE BEEN ARRESTED AT K12
K13 If you have ever been arrested, were any of these arrests related to the Troubles/conflict?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

Section L: Service utilisation

L1 Have you ever been sent to jail/prison?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

ASK IF L1=YES
L2 Were any of these instances related to the Troubles/conflict?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

ASK IF D3=1 OR I12=1
L3 If someone you lived with had been in jail/prison, who were they?
Tick all that apply

- ☐ Father
- ☐ Mother
- ☐ Sibling
- ☐ Spouse/partner
- ☐ Child
- ☐ Grandparent
- ☐ Aunt/uncle
- ☐ Other, please specify
- ☐ *Prefer not to say*

Other, please specify

L4 Have you attended accident and emergency in the previous 3 months as a patient?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

L5 How many times have you attended accident and emergency in the previous 3 months as a patient?
Prefer not to say=888
Not sure=999

L6 In the last three months have you spent any time in hospital as a patient?

- ◯ Yes
- ◯ No
- ◯ *Prefer not to say*

L7 How many nights have you spent in hospital in the previous 3 months as a patient?
Prefer not to say=888
Not sure=999

L8 How many times have you contacted your GP in the previous 3 months for yourself (other than for routine or repeat prescriptions)?
Prefer not to say=888
Not sure=999

Follow up

We may wish to follow up with a small number of participants for a more in-depth interview in the future.

Do you consent to the research team contacting you again in the future as part of a follow-up?

- ◯ Yes
- ◯ No

If yes, please include the best contact number

Thank you.

Please pass the iPad back to the interviewer.

Thank respondent for their assistance and end interview.

Tell respondents: As part of our quality control procedures a percentage of people are recontacted by our office to ensure that the interview was conducted as instructed and according to the Market Research Code of conduct. May I have your contact details for this purpose?
RECORD NAME AND TELEPHONE NUMBER ON CONTACT SHEET

I declare that this interview was conducted within the Market Research Society's Code of Conduct and according to instruction and that the respondent was unknown to me. I understand that all information given must be kept confidential.

- ◯ Yes
- ◯ No

Interviewer ID

Interviewer name

Reminder: The unique ID number for this interview (as recorded at the start of the interview) is: {UniqueID}

Please confirm: Is the Unique ID number for this interview correct?

- ◯ Yes
- ◯ No

Please record the correct Unique ID number

For the purpose of this survey we are only looking to interview people aged 18 and older.

Thank and close.

Appendix 2: Comparison of Sample with Population

	Sample		Population		X2	P
	N	%	N	%		
Age						
18-24	88	7.3	149248	10.5		
25-34	191	15.9	240231	16.5		
35-44	245	20.4	257403	17		
45-64	402	33.4	494396	33.7		
65+	277	23	342482	22.2	1.18	.88
Sex						
Male	528	43.9	721849	48.65		
Female	673	**55.9**	**761911**	51.35	.5	.48
Ethnicity						
White	1156	96.1	1837575	96.6		
BME	44	3.7	65604	3.4	.15	.7
Deprivation quintile						
1 (most deprived)	234	19.5	279201	18.3		
5 (least deprived)	250	20.8	295752	19.4	<.001	.99

Appendix 3: Prevalence of ACE clusters and ACE groups

	N	%
Physical Abuse	94	7.8
Emotional Abuse	123	10.2
Emotional Neglect	219	18.2
Physical Neglect	71	5.9
Sexual Abuse	97	8.1
Household Domestic Abuse	243	20.2
Household member abuse alcohol/substances	183	15.2
Household member had serious mental health issues	208	17.3
Parents were separated/died	305	25.4
Household member incarcerated	**71**	5.9
Bullied	**114**	9.5
Community Violence	**105**	8.7
NI Collective Violence	**251**	**20.9**
ACEs		
0	481	40
1	295	24.4
2-3	215	17.9
4+	212	17.6

Appendix 4: ACE prevalence and ACE groups by sample demographics (N, %, X^2)

	ACE categories													ACE count			
	Childhood abuse					Family dysfunction					Violence			0	1	2-3	4+
	Physical abuse	Emotional abuse	Sexual abuse	Emotional neglect	Physical neglect	Domestic violence	Substance use	Mental illness	Parental separation	Incarceration	Bullying	Community violence	Collective violence				
	For ACE items, we capture and estimate prevalence for both lifetime and more frequent exposure. For instance, respondents can choose between ever having experienced an item, experiencing it only once, experiencing it a few times and experiencing it many times. Our analysis focuses on 'many times'.																
Overall Prevalence (%)	7.8	10.2	8.1	18.2	5.9	20.2	15.2	17.3	25.4	5.9	9.5	8.7	21.9	40	24.5	17.9	17.6
Age group																	
18-24	3.4	6.8	6.8	11.4	6.8	15.9	9.1	14.8	31.8	6.8	8	12.5	3.4	50	20.5	18.2	11.4
25-34	6.3	10.5	5.8	11.5	5.2	20.4	13.1	21.5	39.3	4.7	12	9.9	10.5	39.3	23.6	19.4	17.8
35-44	12.7	15.1	8.2	20.8	8.2	25.3	21.2	21.6	31	9.2	10.6	10.6	25.3	36.3	20	19.6	24.1
45-64	8.5	10.7	10.7	21.6	5.2	21.4	16.7	18.4	20.6	5.7	10	7.7	27.4	37.6	24.6	19.4	18.4
65+	5.1	6.1	6.1	17.7	5.1	15.2	11.2	9.7	15.5	4	6.5	6.5	24.5	44	30.3	13	12.5
X2 (P)	14.12 (.007)	12.61 (.013)	6.7 (.15)	12.86 (.01)	3.23 (.52)	9.69 (.046)	16.48 (.04)	32.36 (<.01)	44.49 (<.001)	18.83 (.016	49.46 (<.001)	5.27 (.26)	42.04 (<.001)	27.97 (.006)			
Gender at birth																	
Male	7.2	8	6.4	20.3	5.3	20.6	14.8	15.9	26.3	6.6	8.3	10.2	22.2	42	21.8	18.2	18
Female	8.2	11.9	9.4	16.5	6.2	19.6	15.3	18.3	24.5	5.2	10.4	7.4	21.5	38.5	26.7	17.5	17.2
X2 (P)	.39 (.53)	4.59 (.03)	3.02 (.08)	2.59 (.12)	.32 (.57)	.14 (.71)	3.21 (.2)	1.42 (.49)	.42 (.52)	2.27 (.32)	7.38 (.12)	2.59 (.12)	.03 (.85)	4.07(.25)			
Religion																	
Catholic	8.5	10	5.6	17.6	5.4	22.3	17.4	18.2	21.3	8.4	8.9	10.8	25.8	41.7	22.7	18.4	17.1
Protestant	5.5	8.2	9.3	15.2	5.7	15.2	11	15.4	21.8	4.1	8.5	6.3	22	47.4	23.2	16	13.3
Other/none	10.6	14.3	9.8	24.5	7.2	25.3	19.2	19.2	39.2	4.9	12.5	9.4	14.7	36.2	27	18.9	17.8
X2 (P)	6.62 (.037)	6.92 (.03)	5.76(.06)	10.1 (.006)	.99 (.61)	12.84 (.002)	15.74 (.003)	9.6 (.048)	34.23 (<.001)	5.61 (.01)	15.37 (.05)	6.1 (.047)	12.14 (.002)	7.11 (.31)			
Deprivation quintile																	
1 (most deprived)	7.7	11.1	9.8	22.6	9	22.2	22.6	20.1	32.5	8.1	9	11.1	29.5	32.5	21.8	21.5	24.4
5 (least deprived)	6.8	8	5.2	13.6	3.2	15.6	11.6	14.4	20	4	9.2	4.4	17.6	46	27.2	14	12.8
X2 (P)	2.31 (.68)	2.95 (.57)	9.25 (.055)	9.53 (.049)	11.15 (.03)	9.97 (.04)	21.06 (.007)	8.29 (.41)	10.33 (.035)	21.61 (.006)	18.34 (.3)	12.55 (.01	11.13 (.03)	27.7 (.006)			

Appendix 5: Prevalence of Child Outcomes by ACE Count Group and Adjusted[a] Odds Ratios Comparing those with 4+ ACEs to those with 0 ACES

	Total		ACE Categories				Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES						
Outcomes			%[b]						Confidence Interval		Omnibus Tests of Model Coefficients		
	N	%	0	1	2-4	4+	p	OR	Lower	Upper	X^2	df	p
Education													
No formal qualifications	225	18.9	16.7	19.9	18.2	23.3	.11	1.43	.92	2.2	140.78	6	<.001
Special Educational Need	83	7	4.0	4.5	9.3	14.8	<.001	**4.48**	2.4	8.35	76.42	6	<.001
School Exclusion	83	7.9	2.7	5.1	9.8	21.3	<.001	**8.96**	4.64	17.31	107.76	6	<.001
Health													
Health concerns as child	274	23.0	14.7	18.7	30.2	40.8	<.001	**3.9**	2.68	5.71	62.92	6	<.001
Long term health condition as child	76	6.3	3.3	6.1	7.9	11.8	<.001	**4.38**	2.25	8.53	25.44	6	<.001
Hospitalised as child	491	41.5	35.7	35.7	50.2	54.4	<.001	**2.31**	1.65	3.25	48.73	6	<.001
Sexual behaviour													
Unintended pregnancy (<18)	65	5.4	2.5	5.1	4.2	13.7	<.001	**5.58**	2.74	11.36	55.69	6	<.001
Early sexual initiation (<16)	118	10.7	3.9	7.5	11.2	29.7	<.001	**10.69**	5.9	19.27	106.75	6	<.001
Lived away from home	61	5.1	0.8	2.4	5.1	18.4	<.001	**24.92**	8.74	71.1	85.46	6	<.001
Paramilitary threat	128	12.2	4.2	6.5	14.7	36.1	<.002	**13.92**	7.78	24.89	147.26	6	<.001

[a] Adjusted for age, gender and deprivation; [b] these percentages reflect the distribution of each outcome variable within in each ACE category

Appendix 6: Prevalence of Adult Mental Health Outcomes by ACE Count Group and Adjusted[a] Odds Ratios Comparing those with 4+ ACEs to those with 0 ACES

	Total		ACE Categories				Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES						
Outcomes			%[b]						Confidence Interval		Omnibus Tests of Model Coefficients		
	N	%	0	1	2-4	4+	p	OR	Lower	Upper	X^2	df	p
Current Anxiety (PHQ)	225	19	9.3	14.6	22.5	43.7	<.001	**7.48**	4.91	11.39	120.52	6	<.001
Current Depression (PHQ)	185	15.6	6.1	11.3	22.1	36.9	<.001	**8.6**	5.35	13.82	114.17	6	<.001
Poor Mental Wellbeing (SWEMWEBS)	134	11.1	5.6	8	12.9	29.9	<.001	**6.56**	3.96	10.88	87.16	6	<.001
Current PTSD/CPTSD	73	6.1	1.5	1	10.7	18.9	<.001	**14.76**	6.46	33.77	101.3	6	<.001
Any MH diagnosis as an adult	234	19.5	8.1	12.5	27	47.2	<.001	**9.56**	6.21	14.72	175.28	6	<.001

[a] Adjusted for age, gender and deprivation; [b] these percentages reflect the distribution of each outcome variable within in each ACE category

Appendix 7: Prevalence of Adult Physical Health Outcomes by ACE Count Group and Adjusted Odds Ratios Comparing those with 4+ ACEs to those with 0 ACES

	Total		ACE Categories				Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES						
Outcomes			%[b]						Confidence Interval		Omnibus Tests of Model Coefficients		
	N	%	0	1	2-3	4+	p	OR	Lower	Upper	X^2	df	p
Any current ongoing physical health problems		35.7	25.1	33.4	42.3	56.5	<.001	**5.39**	3.65	7.97	290.71	6	<.001
Angina or long-term heart problem		4.9	3.3	6.1	4.7	7.1	.03	**2.32**	1.1	4.89	24.05	6	<.001
Asthma		4.9	3.3	3.7	7.4	7.5	.008	**2.75**	1.31	5.78	46.2	6	<.001
Cancer		2.7	2.1	4.1	1.4	3.8	.14	2.06	.79	5.4	8.55	6	.2
Chronic pain or fibromyalgia		5.7	2.5	2.7	10.7	11.8	<.001	**5.12**	2.49	10.55	52.76	6	<.001
Diabetes (Type 2)		5	4.2	5.1	6	5.7	.48	1.32	.62	2.79	15.93	6	.014
High blood pressure		9.8	9.6	8.1	10.2	12.3	.18	1.43	.84	2.43	42.87	6	<.001
Insomnia/poor sleep		5.7	3.1	4.4	7	12.3	<.001	**4.3**	2.19	8.47	31.07	6	<.001
Rheumatoid arthritis		5.9	5	3.4	7.9	9.4	.021	**2.11**	1.12	3.99	32.72	6	<.001

[a] Adjusted for age, gender and deprivation; [b] these percentages reflect the distribution of each outcome variable within in each ACE category

Appendix 8: Prevalence of Adult Adversities and NI Troubles/Conflict Related Adversities by ACE Count Group and Adjusted[a] Odds Ratios Comparing those with 4+ Childhood ACEs to those with 0 Childhood ACES

	Total		ACE Categories				Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES						
Outcomes			%[b]						Confidence Interval		Omnibus Tests of Model Coefficients		
	N	%	0	1	2-4	4+	p	OR	Lower	Upper	X^2	df	p
Domestic Abuse	107	8.9	2.5	4.1	14	25	<.001	**12.37**	6.41	23.88	98.56	6	<.001
Sexual Violence	67	5.6	1.5	3.4	7.4	16	<.001	**12.39**	5.36	28.65	69.77	6	<.001
Lived with a household member who had substance abuse issues	188	15.6	4	8.1	19.5	48.6	<.001	**23.23**	13.5	39.98	225.01	6	<.001
Lived with an adult who had serious mental health issues	295	24.5	10.2	16.9	36.3	55.7	<.001	**11**	7.33	16.5	186.77	6	<.001
Lived with a household member who was in prison	50	4.2	0.8	0.3	2.3	18.9	<.001	**27.75**	9.64	79.87	105.61	6	<.001
Physically assaulted in past 12 months	27	2.3	0.4	0.4	4.4	7.5	<.001	**18.99**	4.2	85.97	60.48	6	<.001
Someone close killed in Troubles	139	11.6	6.9	8.5	16.3	21.7	<.001	**4.37**	2.65	7.22	72.69	6	<.001
Someone close injured Troubles	149	12,4	6.2	11.2	16.7	23.6	<.001	**4.56**	2.77	7.52	70.38	6	<.001
Self-injured in Troubles[b]	30	2.5	0	0.7	3.3	9.9	-	-	-	-	-	-	-
Struggled with debt	178	15.3	8.1	11.1	23.2	29.6	**<.001**	**4.24**	**2.69**	**6.68**	**74.29**	**6**	**<.001**
Borrowed from illegal money lender	61	5.2	1.5	2.1	8.2	15.4	**<.001**	**10.86**	**4.65**	**25.35**	**77.38**	**6**	**<.001**

[a] Adjusted for age, gender and deprivation; [b] these percentages reflect the distribution of each outcome variable within in each ACE category; b figures too low to calculate reliable odds ratios

Appendix 9: Prevalence of Adult Health Behaviours and Services Use by ACE Count Group and Adjusted[a] Odds Ratios Comparing those with 4+ ACEs to those with 0 ACES

	Total		ACE Categories				Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES						
Outcomes			%[b]						Confidence Interval		Omnibus Tests of Model Coefficients		
	N	%	0	1	2-4	4+	p	OR	Lower	Upper	X^2	df	p
Daily smoking or vaping	296	24.6	18.3	20.0	30.2	39.6	<.001	**2.59**	1.79	3.75	89.43	6	<.001
Any past year drug	175	14.5	9.8	11.5	19.1	25.0	<.001	**2.95**	1.88	4.63	89.38	6	<.001
Weekly alcohol over recommended limit	140	11.7	9.2	9.5	16.4	15.8	.014	**1.86**	1.13	3	33,34	6	<.001
No daily fruit or veg consumption	184	16.7	14.1	14.7	20.6	21.8	.028	**1.64**	1.06	2.55	22.7	6	<.001
No or low weekly physical activity	196	17.6	13.4	20.7	17.8	23.0	.002	**2.05**	1.31	3.19	51.58	6	<.001
Attended ED	117	9.8	6.7	7.1	12.2	18	<.001	**2.92**	1.76	4.87	23.3	6	<.001
Spent time in hospital in past 3 months	68	5.7	4.4	6.4	5.2	8	.1	1.76	.89	3.47	3.83	6	.699
Contacted GP 3+ times in past 3 months	134	11.6	6.8	12.1	16	17.4	<.001	**2.85**	1.7	4.78	27.35	6	<.001
Ever arrested	138	11.9	5.9	6.7	14.6	30.5	<.001	**8.3**	4.86	14.1	188.84	6	<.001

[a] Adjusted for age, gender and deprivation; [b] these percentages reflect the distribution of each outcome variable within in each ACE category

Appendix 10: Prevalence of Adult Mental Health Outcomes by ACE Count Group and Adjusted Odds Ratios Comparing those with 4+ ACEs to those with 0 ACES *with*[a] and without *BCEs*[b]

	Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES[a]							Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES, including BCEs[b]						
Outcomes			**Confidence Interval**		**Omnibus Tests of Model Coefficients**					**Confidence Interval**		**Omnibus Tests of Model Coefficients**		
	p	**OR**	**Lower**	**Upper**	**X^2**	**df**	**p**	**p**	**OR**	**Lower**	**Upper**	**X^2**	**df**	**p**
Any current ongoing physical health problems	<.001	**5.39**	3.65	7.97	290.71	6	<.001	<.001	**3.886**	2.496	6.051	300.08	7	<.001
Angina or long-term heart problem	.03	**2.32**	1.1	4.89	24.05	6	<.001	.105	2.011	.865	4.675	24.564	7	<.001
Asthma	.008	**2.75**	1.31	5.78	46.2	6	<.001	.446	1.418	.578	3.479	54.02	7	<.001
Cancer	.14	2.06	.79	5.4	8.55	6	.2	.07	2.711	.921	7.98	9.63	7	.211
Chronic pain or fibromyalgia	<.001	**5.12**	2.49	10.55	52.76	6	<.001	.011	**2.95**	1.28	6.79	60.41	7	<.001
Diabetes (Type 2)	.48	1.32	.62	2.79	15.93	6	.014	.281	.253	.021	3.08	6.73	7	.457
High blood pressure	.18	1.43	.84	2.43	42.87	6	<.001	.89	1.045	5.61	1.945	46.72	7	<.001
Insomnia/poor sleep	<.001	**4.3**	2.19	8.47	31.07	6	<.001	.001	**3.63**	1.67	7.93	31.84	7	<.001
Rheumatoid arthritis	.021	**2.11**	1.12	3.99	32.72	6	<.001	.54	**1.269**	.589	2.73	38.83	7	<.001

Appendix 11: Prevalence of Adult Physical Health Outcomes by ACE Count Group and Adjusted Odds Ratios Comparing those with 4+ ACEs to those with 0 ACES *with*[a] and without *BCEs*[b]

	Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES[a]							Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES, including BCEs[b]						
Outcomes			**Confidence Interval**		**Omnibus Tests of Model Coefficients**					**Confidence Interval**		**Omnibus Tests of Model Coefficients**		
	p	**OR**	**Lower**	**Upper**	**X^2**	**df**	**p**	**p**	**OR**	**Lower**	**Upper**	**X^2**	**df**	**p**
Current Anxiety (PHQ)	<.001	**7.48**	4.91	11.39	120.52	6	<.001	<.001	**4.678**	2.894	7.564	136.851	7	<.001
Current Depression (PHQ)	<.001	**8.6**	5.35	13.82	114.17	6	<.001	<.001	**4.548**	2.656	7.787	141.607	7	<.001
Poor Mental Wellbeing (SWEMWEBS)	<.001	**6.56**	3.96	10.88	87.16	6	<.001	<.001	**2.932**	1.620	5.306	118.226	7	<.001
Current PTSD/CPTSD	<.001	**14.76**	6.46	33.77	101.3	6	<.001	<.001	**8.662**	3.512	21.362	110.489	7	<.001
Any MH diagnosis as an adult	<.001	**9.56**	6.21	14.72	175.28	6	<.001	<.001	**5.863**	3.617	9.504	194.897	7	<.001

[a] Adjusted for age, gender and deprivation; [b] these percentages reflect the distribution of each outcome variable within in each ACE category

Appendix 12: Prevalence of Adult Health Behaviours and Services Use by ACE Count Group and Adjusted Odds Ratios Comparing those with 4+ ACEs to those with 0 ACES *with*[a] and without *BCEs*[b]

	Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES[a]							Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES, including BCEs[b]						
Outcomes			**Confidence Interval**		**Omnibus Tests of Model Coefficients**					**Confidence Interval**		**Omnibus Tests of Model Coefficients**		
	p	**OR**	**Lower**	**Upper**	**X^2**	**df**	**p**	**p**	**OR**	**Lower**	**Upper**	**X^2**	**df**	**p**
Daily smoking or vaping	<.001	**2.59**	1.79	3.75	89.43	6	<.001	.016	**1.692**	1.1	2.596	106.488	7	<.001
Any past year drug	<.001	**2.95**	1.88	4.63	89.38	6	<.001	.011	**1.969**	1.17	2.904	99.518	7	<.001
Weekly alcohol over recommended limit	.014	**1.86**	1.13	3	33,34	6	<.001	.049	**1.753**	1	3.068	33.528	7	<.001
No daily fruit or veg consumption	.028	**1.64**	1.06	2.55	22.7	6	<.001	.743	1.09	.651	1.826	32.907	7	<.001
No or low weekly physical activity	.002	**2.05**	1.31	3.19	51.58	6	<.001	.532	1.183	.699	2	68.37	7	<.001
Attended ED in past 3 months	<.001	**2.92**	1.76	4.87	23.3	6	<.001	.005	**2.331**	1.29	4.22	25.59	7	<.001
Spent time in hospital in past 3 months	.1	1.76	.89	3.47	3.83	6	.699	.008	**2.808**	1.311	6.01	9.748	7	.203
Contacted GP 3+ times in past 3 months	<.001	**2.85**	1.7	4.78	27.35	6	<.001	.001	**2.665**	1.478	4.81	27.56	7	<.001
Ever arrested	<.001	**8.3**	4.86	14.1	188.84	6	<.001	<.001	**6.416**	3.58	11.49	193.2	7	<.001
Ever hit (previous 12 months)	<.001	**18.99**	4.199	85.97	60.48	6	<.001	<.001	**14.49**	2.95	71.198	61.647	7	<.001

[a] Adjusted for age, gender and deprivation; [b] Adjusted for age, gender, deprivation and BCEs

Appendix 13: Prevalence of Adult Adversity and Troubles/conflict Outcomes by ACE Count Group and Adjusted Odds Ratios Comparing those with 4+ ACEs to those with 0 ACES, *with*[a] and without *BCEs*[b]

	Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES[a]							Results from Binary Logistic Regression Comparing 4+ ACEs with 0 ACES, including BCEs[b]						
Outcomes			**Confidence Interval**		**Omnibus Tests of Model Coefficients**					**Confidence Interval**		**Omnibus Tests of Model Coefficients**		
	p	**OR**	**Lower**	**Upper**	**X^2**	**df**	**p**	**p**	**OR**	**Lower**	**Upper**	**X^2**	**df**	**p**
Domestic Abuse	<.001	**12.37**	6.41	23.88	98.56	6	<.001	<.001	**6.718**	3.260	13.846	115.896	7	<.001
Sexual Violence	<.001	**12.39**	5.36	28.65	69.77	6	<.001	<.001	**5.860**	2.317	14.819	85.297	7	<.001
lived with a household member who had substance abuse issues	<.001	**23.23**	13.5	39.98	225.01	6	<.001	<.001	**18.891**	10.457	34.126	227.865	7	<.001
lived with an adult who had serious mental health issues	<.001	**11**	7.33	16.5	186.77	6	<.001	<.001	**8.976**	5.705	14.123	190.474	7	<.001
lived with a household member who was in prison	<.001	**27.75**	9.64	79.87	105.61	6	<.001	<.001	**23.160**	7.571	70.851	106.582	7	<.001
Physically assaulted in past 12 months	<.001	**18.99**	4.2	85.97	60.48	6	<.001	<.001	**14.492**	2.950	71.198	61.647	7	<.001
Someone close killed in Troubles	<.001	**4.37**	2.65	7.22	72.69	6	<.001	<.001	**4.794**	2.717	8.457	73.147	7	<.001
Someone close injured Troubles	<.001	**4.56**	2.77	7.52	70.38	6	<.001	<.001	**3.998**	2.277	7.019	71.398	7	<.001
Self injured in Troubles[b]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Struggled with debt	<.001	**4.24**	2.69	6.68	74.29	6	<.001	<.001	**3.83**	2.28	6.43	74.93	7	<.001
Borrowed from an illegal money lender	<.001	**10.86**	4.65	25.35	77.38	6	<.001	<.001	**8.02**	3.17	20.03	80.03	7	<.001

[a] Adjusted for age, gender and deprivation; [b] Adjusted for age, gender, deprivation and BCEs

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