Troubled consequences: A report on the mental health impact of the civil conflict in Northern Ireland

Prepared for the **Commission for Victims and Survivors**

By the Bamford Centre for Mental Health and Wellbeing at the University of Ulster in Partnership with the Northern Ireland Centre for Trauma & Transformation and Compass

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Preface

“Better to light one candle than curse the darkness”. This ancient proverb was never more apposite than as a comment on the long shadow cast by Northern Ireland’s civil conflict. The Bamford Review pointed to the need for more and better research to address the gaps in our knowledge of Northern Ireland’s mental health needs and our understanding of the determinants of the large amount of mental-ill-health within our community.

“Troubled Consequences” sheds considerable light on the relation between trauma and health. The Report reveals the pervasive and protracted toxicity of psychological trauma on the health of the Northern Irish Community. The long reach of “troubles-related” trauma is revealed to a degree that provides policy makers, service commissioners and providers with substantial evidence of the scale of the need from which sound judgements on how best to make progress can be determined. The report also provides evidence for a large amount of unmet mental health need, the need for services which are fit for purpose, the need for training across the statutory and voluntary sectors. The costs of not responding to such need are startling in terms of the personal suffering, the burden on families and the inevitable economic burden on Northern Ireland PLC.

The report expands and extends the initial insights provided by *Trauma Health & Conflict* (Ferry et al. 2008). Both works are the fruits of a creative partnership between the University of Ulster’s Bamford Centre for Mental Health and the Northern Ireland Centre for Trauma and Transformation.

The Commission for Victims and Survivors are to be congratulated for directing our attention to this hidden legacy of our civil conflict, through the commissioning of this Report. The Report’s authors are to be congratulated on the thoroughness and comprehensiveness of their endeavours. Let us hope that the Task Force and Inter-Governmental Forum overseeing the Bamford Mental Health Reforms are quickened in their resolve by the findings in this Report. Let us also hope that our political leaders rise to the challenge presented by this new body of evidence, to ensure that mental wellbeing as a precious societal resource and the current mental health reforms are prioritised and protected during these difficult times.

Roy McClelland OBE
Professor Emeritus of Mental Health

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- The Big Lottery Fund
- The Lupina Foundation
- Atlantic Philanthropies.

Executive summary: Key findings

The prevalence of exposure to traumatic events

- An estimated 61% of the Northern Ireland adult population have experienced a traumatic event at some point in their lifetime.
- Males were more likely than females to have experienced any traumatic event.
- An estimated 39% of the study population have experienced a conflict-related traumatic event.
- Conflict-related traumatic events were more prevalent among males and those in the middle age-groups (i.e. age at the time of the NISHS interview).
- Comparison of the geographical profile of "Troubles"-related deaths (from the COTT study) with the current location of those who experienced a conflict-related trauma, reveals that need is not exclusively located in those areas characterised by intense violence during the "Troubles".

Post traumatic stress disorder (PTSD)

- An estimated 8.8% of the Northern Ireland adult population met the criteria for PTSD at some point in their life while 5.1% met the criteria in the previous 12 months.
- While males were more likely to have experienced a traumatic event (see above), females were more likely to have PTSD.
- The prevalence of PTSD in Northern Ireland is the highest of all countries that have produced comparable estimates including the USA, other Western European countries and countries that have experienced civil conflict in their recent history.

The prevalence of lifetime mental health disorders and 'post-conflict' disorders amongst those exposed to conflict-related events

- Individuals who experienced any conflict-related traumatic event were more likely to have had any lifetime anxiety, mood, substance or impulse-control disorder compared to those who experienced a non conflict-related event and those who had not experienced a traumatic event.
- Overall, an estimated 53% of individuals who experienced a conflict-related traumatic event had a mental health disorder at some point in their life, while 32% had a mental health disorder in the 12 months previous to the NISHS interview.
- Almost 44% of individuals who experienced a conflict-related traumatic event had a 'post-conflict' disorder following their first experience of conflict (i.e. had a disorder that first developed after their first experience of conflict).

- Examination of the characteristics associated with having any lifetime disorder show that:
    - » There were no gender differences with respect to the prevalence of any lifetime disorder. This overall result however masks significant gender differences with respect to different disorder types (see Appendix A).
    - » Individuals who were separated/divorced/widowed (at the time of the NISHS interview) were significantly more likely than those who were married to have a lifetime disorder.
    - » Those aged 65+ were significantly less likely to have a lifetime disorder compared to those aged 18-34.

The prevalence of chronic physical health conditions amongst those exposed to conflict-related events

- Results show that the prevalence of chronic physical health conditions was higher among those who had experienced a traumatic event (conflict or non conflict-related) compared to those who had not experienced trauma.
- The most prevalent chronic conditions among those who experienced a conflict-related traumatic event were back or neck pain, persistent headaches and arthritis or rheumatism.

Help-seeking and service use

- Results reveal a wide variation in the percentage of individuals who sought help, depending on the type of disorder.
- For example an estimated 79% of individuals who experienced conflict and had lifetime major depressive disorder (MDD) sought help compared to just 15% of those with separation anxiety disorder/adult separation anxiety.
- Although also varying by disorder type, a low percentage of individuals received treatment that they felt was helpful or effective (55% for MDD and 11.2% for alcohol/drug abuse).
- Delays in treatment (from first onset of the disorder to first treatment contact) also varied with respect to disorder type.
- The average delay in treatment was 2 years for mood disorders, 22 years for anxiety disorders and 15 years for substance disorders.
- The general medical sector was visited by the highest percentage of individuals with each ‘post-conflict’ disorder category, followed by psychiatrists.

- Among those with any ‘post-conflict’ disorder, females and those who were previously married were more likely to have visited any service provider.
- The prevalence of medication use in the 12 months previous to the NISHS interview was significantly higher among those who experienced a traumatic event (conflict or non conflict-related) compared to those who had not experienced a traumatic event.
- Overall an estimated 18.3% of individuals who experienced a conflict related traumatic event used prescription medication in the previous 12 months.

Chapter 1: Background to this report

The University of Ulster - Northern Ireland Centre for Trauma and Transformation partnership

In 2008 a partnership of the Psychology Research Institute at the University of Ulster and the Northern Ireland Centre for Trauma & Transformation (NICTT) published a report of the health impact of the civil conflict in Northern Ireland. Funded by the UK's Big Lottery Fund, the report, '*Trauma Health & Conflict in Northern Ireland; A Study of the Epidemiology of Trauma Related Disorders and Investigation of the Impact of Trauma on the Individual'* (Ferry et al. 2008) was the first population-wide (epidemiological) study of the mental health impact of the conflict, and involved a secondary analysis of the first phase of data (N=3100) from the Northern Ireland Study of Health & Stress (NISHS).

The NISHS was initiated and led by Professor Brendan Bunting and his team at the University of Ulster with support from the Research & Development Office[1]. It is one of nearly 30 national and international World Mental Health Survey Initiative studies, all using the same methodology and research instruments, being undertaken under the auspices of the World Health Organisation. These studies are being coordinated and supervised by Harvard University and besides providing valuable national data, also open the opportunity for international comparisons.

The 2008 Report, *Trauma Health & Conflict* (Ferry et al. 2008), provided significant preliminary insights into the mental health impact of civil conflict. It also reported upon the association between poor physical health and the adverse psychological impact associated with traumatic experiences. The socio-demographic characteristics of individuals who experienced traumatic events and developed post traumatic stress disorder (PTSD) as well as the profile of service use was also examined. In addition, the Report included detailed accounts of the experiences of a number of participants who had suffered traumatic experiences associated with the conflict along with important observations and insights into the personal and family impacts, life consequences, and on issues such as trust, help seeking and finding effective services.

The UU-NICTT partnership is currently undertaking two follow-up studies. The first will report on the health economic consequences of the adverse mental health impact of civil conflict (due to be published later in 2011). The second will report upon the particular conflict-related needs of the ageing population in Northern Ireland (due to be published in early 2012).

The findings outlined in the current report provide an update of *Trauma, Health & Conflict* (Ferry et al. 2008) and are based on analysis of the full NISHS dataset (N=4340).[2] This update involves a more in-depth investigation of particular areas requested by the Commission for Victims & Survivors and other areas where the research team were able to

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[1] R&D Office of the Department of Health, Social Services and Public Safety, Northern Ireland

[2] *Trauma, Health and Conflict* was based on analysis of the first wave of data from the NISHS (N=3100)

bring forward additional findings or analysis relevant to the brief.

The information provided in the current report is based on an epidemiological study of mental wellbeing. Epidemiological research has the advantage that the results can be generalised to the population (individuals living in Northern Ireland) from which the information was obtained. Within the current context it is possible to generalise the results from the Northern Ireland Study of Health and Stress psychological/psychiatric interviews to those that would be expected if everyone in the society were to be interviewed; and where the appropriate procedures are followed, this can be done with a high degree of confidence. In other words, in the current study, information is being reported from a sample of respondents in Northern Ireland, and these results are being generalised to the wider society. Epidemiological research, upon which the current report is based, therefore represents a powerful tool in informing the planning, delivery and provision of effective mental health services. There are many ways to evaluate mental health. In the data reported here the criteria used were developed by the: (1) World Health Organisation (WHO) and (2) the American Psychiatric Association (APA). The instrument used was the WHO Composite International Diagnostic Interview (CIDI) (Robins et al. 1988). A goal of the research was to present the prevalence rates (number of cases in the population, at a given point in time) for a wide range of mental health conditions as well as levels of treatment sought by individuals with these conditions. However, a second goal was to enable the data obtained from individuals in Northern Ireland to be set within an international system of classification and comparison. When figures are cited, and comparisons made, we are using internationally agreed criteria. Of course the criteria for a mental health condition could be shifted or the symptoms classified in different way; nevertheless, there are considerable advantages in keeping to internationally agreed criteria, not least in recognition of the considerable therapeutic and research input that has gone into the creation of these criteria.

The context for the tender from the Commission for Victims and Survivors (CVSNI)

The Strategy for Victims & Survivors published in Nov 2009 by the Office of the First Minister and deputy First Minister (OFMDFM) describes the responsibilities of the Commission for Victims & Survivors (CVSNI) in developing a comprehensive needs assessment (CNA) (pages 10-11). The Strategy summarises the purpose of the CNA as enabling “the Commission to comment on the effectiveness of services for victims and survivors and represent the needs of victims and survivors to government in a coherent fashion”. It is intended that the CNA “will be used to create a sound basis for funding the work of victims and survivors groups and other non-statutory organisations providing services in this area.”

Given the size and complexity of the needs associated with the conflict (such as – the different types and level of needs, both visible and hidden, across a range of groups and

locations, in addition to the time frame needed to establish appropriate services) it has been necessary to divide the CNA into manageable project areas. One of the main areas of focus is on health needs, one part of which is the mental health needs of victims and survivors in Northern Ireland.

Areas required by the CVSNI under the original terms of reference for this Report

The CVSNI identified the following key areas and questions to be addressed in the report of the mental health impact of the "Troubles" on victims and survivors:

- Establishing the policy/research context of mental health service delivery in Northern Ireland including the impact of the Bamford Review on the future design of treatments and services. Setting the current provision of mental health services within the international context of other countries linked with the UU study and the World Mental Health Survey Initiative.
- Identification of victims and survivors within the data from the survey. If possible, how could this be achieved and what would be the potential for further analysis/breakdown of the data?
- To support our analysis of the (statutory and non-statutory) mental health services currently provided within the sector, what is the potential for interrogating the data to provide evidence of the efficacy and effectiveness of services currently being accessed by victims & survivors? What is the potential for analysing data to evaluate different types of alternative treatments from traditional reliance on pharmacological pathways i.e. complementary therapies, psychological 'talking therapies' etc? Is it possible to determine that these complementary treatments are (i) being readily accessed by those adversely affected by their experiences of the conflict, (ii) that they are having a positive impact in terms of individual perception, measurable reduction in medication, better management of chronic pain condition(s) and/or a positive transition in their lives i.e. greater mobility, reemployment, adoption of a more positive mental attitude?
- Economic analysis of the costs of current treatments involved in the care pathways of victims and survivors affected by mental ill-health. Breakdown of costs associated with effectiveness of treatments, unmet need and treatment delay would be very useful in identifying gaps in service provision as well as gauging the potential increase in demand for services from victims and survivors currently not availing of non-statutory services.
- The data to 'inform policy and resource allocation through examination of small area characteristics, considered at both micro and macro level.'

In the early summer of 2011 and in response to a tender from the CVSNI, the Bamford Centre for Mental Health and Wellbeing (at UU) in collaboration with the Northern Ireland Centre for

Trauma & Transformation (NICTT) and the Northern Ireland Association for Mental Health (NIAMH) submitted a proposal outlining an examination of mental health needs among victims and survivors of the Northern Ireland conflict. The proposal submitted by the research team was based on a completed and planned updating analysis of data from the Northern Ireland Study of Health and Stress (NISHS) which, as described previously, is the largest epidemiological/population based study of mental health in Northern Ireland. The analysis and subsequent report to the CVSNI would include an examination of rates of mental illness, treatments and unmet need among the participants in the NISHS who might be defined as victims of the NI civil conflict.

The tender was awarded in June 2011 and analysis and the writing of the report was undertaken and completed over the summer of 2011.

The current report

On acceptance of the submitted proposal, the research team subsequently met with the CVSNI on a number of occasions to discuss and refine the research questions for the project. For the purposes of this analysis a 'victim' of the "Troubles" is defined as an individual who experienced a traumatic event that we have categorised as 'conflict-related' from 1968 onwards as identified in the NISHS. The categorisation of 'conflict-related' events will be discussed in further detail within the methods section of this proposal. The current report provides:-

(a) estimates of the prevalence of conflict-related traumatic experiences among the Northern Ireland adult population;

(b) estimates of the prevalence of a range of mental health disorders among this subgroup including their onset in relation to the experience of conflict ;

(c) an examination of service use and effectiveness of treatment among those who have experienced conflict related events and have a mental health need;

(d) a profile of the types of service provider visited by those with mental health needs associated with conflict; and

(e) an investigation of the association between the experience of conflict-related trauma and the prevalence of chronic physical health conditions.

(f) In addition, these areas of analysis are examined in relation to key demographic variables including geographical location, which provides a profile of the location and key characteristics of those with mental health needs associated with conflict.

Chapter 2: Mental Health and the Northern Ireland "Troubles"

The elevated prevalence of mental health problems and the need for a strategic national framework for the development and improvement of mental health services in Northern Ireland was notably acknowledged and endorsed in the recent Bamford Review of Mental Health and Learning Disability. The report highlighted the high levels of psychiatric morbidity in Northern Ireland with over one in five individuals in the general population having a mental health disorder in a given year. These high levels of psychiatric morbidity are also confirmed by evidence from the Northern Ireland Study of Health and Stress which estimates that 23% of the adult population had an anxiety, mood, substance use or impulse-control disorder in the 12 months previous to the interview (Bunting et al. under review). Following an assessment of current mental health needs, the Review states that a new strategic framework requires better information on mental health and service needs and that a holistic and comprehensive approach to service provision and mental health practice is necessary (Bamford, 2005).

Given the backdrop of 30-40 years of civil conflict, Northern Ireland presents a specific environment for the study of the epidemiology of mental health disorders. The conflict in Northern Ireland has had significant direct and indirect associations with deprivation, unemployment and economic inactivity and poor physical and mental health.

The earliest significant study on mental health in relation to the NI conflict has been the Cost of the Troubles Study (COTT) (Fay et al. 1999). This took the form of an in depth investigation of individuals who have been exposed to "Troubles" related violence. The COTT Study sample was constructed by dividing Northern Ireland into three categories of reported levels of community violence: high intensity, middle intensity and low intensity (based on "Troubles" related death rate). A questionnaire was administered to 1,346 people to determine experience of the "Troubles", effects of the "Troubles" and help and support required and received. The researchers concluded that around 30% of those who participated in the study and who had been exposed directly to violence associated with the "Troubles" had symptoms approximating to PTSD.

Muldoon et al. (2003) similarly explored the breadth of conflict experiences in a representative sample of the population in Northern Ireland and Border counties of the Irish Republic. Overall, 50% of respondents reported having some direct experience of the "Troubles" during their lifetime. The three most prevalent events were experiencing a bomb (21.5% of men vs 18% of women), a riot (26.2% of men and 13.1% of women) or intimidation (25.3% of men vs 15% of women).

O'Reilly and Stevenson (2003) also examined the effects of the "Troubles" by carrying out a secondary analysis of data collected on 1694 respondents aged 16-64 as part of the 1997 Northern Ireland Health and Well-being Survey. Overall 21.3% of respondents said that the "Troubles" had either 'quite a bit' or 'a lot' of impact on their life or the lives of their family. The corresponding figure for impact on their area of residence was 25.1%. Analyses of General Health Questionnaire-12 (GHQ-12) data revealed that respondents whose life or

area had been affected by the “Troubles” were more likely to experience psychological problems. O’Reilly and Stevenson concluded that the “Troubles” represented a significant and additional impact on the mental health of the Northern Ireland population.

A report of the Department of Health and Social Services and Public Safety concluded that much more evidence is required in order to fully understand the consequences, and in particular the long-term effects, on general and mental wellbeing (DHSSPS, 2004).

As previously outlined, an insight into the added burden of the conflict was provided through a more recent study which drew upon the first wave of data from the NISHS. Entitled, ‘*Trauma Health & Conflict in Northern Ireland: A Study of the Epidemiology of Trauma Related Disorders and Investigation of the Impact of Trauma on the Individual’,* (Ferry et al. 2008) the study found that 4.8% of the adult population met the criteria for 12-month PTSD of which one fifth was probably associated with the “Troubles”. High levels of mental health co-morbidity (i.e. people with PTSD were more likely than those with depression to have one or more other mental health problems) and similarly high level of association with adverse physical health conditions were also found. The current report provides updated information on and analysis of these initial findings.

Chapter 3: Trauma and the health of populations

Traumatic experiences and their impact

Studies published in recent years show that in western societies around two thirds of the general population experience one or more traumatic events during their lifetime (Galea et al. 2005). Traumatic events are those experiences that are highly unusual, unexpected or overwhelming, and on experiencing them a person may have a deep sense of powerlessness or helplessness or may strongly believe that they, or others close to them, are going to die. Examples of traumatic events include experiences such as being in a serious road traffic collision, experiencing a sudden serious illness, being mugged or raped, battlefield or other war and conflict experiences, having someone close to us die suddenly or being seriously injured. The "Troubles" in Northern Ireland were characterised by a range of potential traumatic events including shootings, bombings, sudden death and injury of loved ones, punishment beatings, torture and internment among many others. For some people involved in such events it is not the presenting distressing experience that in time goes on to be the cause of psychological difficulties, but one or more events linked to the primary event. For example, the traumatic experience might not be the primary event, for example a road traffic accident, but the near death experience in an A&E department, or the moment a police officer calls at the home to bring bad news or the visit to the mortuary to identify a family member or friend. This example also illustrates the impact of traumatic events not only on those who experience them directly, but also on those who are close through family, colleague-related or friendship ties. To this we could add those who through their work responsibilities are exposed to traumatic events and other witnesses and members of the public who are brought into contact with such events.

We know from research that some people are more at risk than others of having a traumatic experience. For example, young men are more at risk of traumatic events linked to street violence, women to sexual violence and violence within relationships. A study in the USA by Kessler and colleagues (1995) reported significant gender differences in the experience of traumatic events. Overall 60.7% of men reported experience of at least one traumatic event compared to 51.2% of women. Where people live sometimes plays a part (Fay et al. 1999), and the work that they do. For example members of emergency service and members of the armed forces are at risk of greater exposure to certain types of traumatic events.

Whilst many people experience such events, it is reassuring to note that most of us will suffer no adverse psychological or emotional consequences, save perhaps for a short period of distress or preoccupation with the experience. The reasons some individuals cope well while others do not, seems to be related to a number of factors, including what an individual made of their experience at the time and afterwards, the level of support they received and whether they had other major life problems at the time.

Following a traumatic experience some people (adults and children) can develop one or more psychological disorders, such as depression, a panic disorder, general anxiety or post traumatic stress disorder (PTSD) (Shalev et al. in Yehuda 1998). Sometimes people can

have several of these problems, and the longer people have a disorder such as PTSD, then the greater the likelihood they will develop other problems as well (known as co-morbid disorders). For example, unsurprisingly given the stress and strain of living with the disorder, people suffering PTSD over a long period can also become depressed. Further, as a means of coping with the distress of these disorders, people can radically change their lifestyles by, for instance, becoming very socially withdrawn, or becoming increasingly dependent upon alcohol or other drugs (prescribed or illegal), which in turn becomes a secondary set of problems, leading to further family, social and work related difficulties. In addition there is a growing body of evidence linking physical health problems and associated daily living problems, with trauma related disorders, and in particular PTSD (Ferry et al. 2008).

Post Traumatic Stress Disorder (PTSD)

PTSD is of particular interest in understanding the impact of traumatic events on mental health and well-being. The term has been used since the 1970's for a range of psychological and physical problems that can sometimes follow particular threatening or distressing events (National Institute for Health and Clinical Excellence (NICE) 2005) and was first classified as a disorder in the Diagnostic Statistical Manual of Mental Disorders, Third Edition (DSM-III), in 1980 (American Psychiatric Association (APA), 1980). Its current profile is described in DSM-IV-TR (APA, 2000). The current description of PTSD includes three clusters of commonly observed reactions to traumatic experiences, namely:

1. Re-experiencing of the event such as nightmares or flashbacks;

2. Avoidance of things that remind the person of the event and numbing of emotions and responsiveness;

3. Hyper-vigilance symptoms such as jumpiness, irritability and sleep disturbance.

Following the first classification of PTSD in 1980, a body of research and related literature emerged in the area of trauma and trauma-related disorders and needs. Of particular interest are the population or epidemiological studies of trauma and PTSD. Evidence from these studies has demonstrated that the experience of traumatic events is common, with more than two-thirds of persons in the general population experiencing at least one significant traumatic event during their lifetime (Galea et al. 2005).

Turning to the level of PTSD that follows traumatic experiences, many population studies conclude that PTSD is a common consequence of exposure to traumatic incidents and experiences. Estimates of the prevalence of PTSD among the general population occurring in the previous 12 months range from 0.5% (Levinson et al. 2007) to 3.6% (Kessler et al. 2005). These studies use what is referred to as the '12-month' measure meaning the percentage of the population being studied who met the criteria for a given disorder within the previous 12 months. This is a useful measure for planning purposes as it gives an indication of the current need from which the demand for services can be construed.

Another measure that is sometimes used is 'lifetime' prevalence, in this case of PTSD, which indicates the percentage of the population who have had PTSD at some point in their life up to the point at which the participants took part in the study. This measure includes those who previously met the criteria for PTSD but no longer do so, and those who currently (i.e. at the time of the study interview) meet the criteria. Here international estimates range from 1.0% (Helzer et al. 1987) to 9.2% (Breslau, 1991) depending in part on the definition being used and population under examination. Again, as with traumatic *experiences*, the level of PTSD seems to depend on gender and other socio-demographic factors. While men are more likely to have had a traumatic experience, women are more likely to develop PTSD. For instance, Frans et al. (2005) estimated the overall lifetime prevalence of PTSD at 5.6% with a 1:2 male-to-female ratio i.e. twice as many females develop PTSD.

Other trauma-related mental health problems

Individuals can also develop mental health problems other than PTSD following traumatic experiences, such as depression or panic disorder. We also know that concurrently with acquiring PTSD, or following the development of the condition, some individuals can develop additional mental health problems. Davidson and colleagues in the USA found that individuals with PTSD were 9.3 times more likely than those without PTSD to have at least one other comorbid disorder (Davidson et al. 1991). These findings are supported by Kessler et al. using data from the National Comorbidity Study (NCS). Their figures indicate that 88.3% of men and 79% of women with PTSD had a history of at least one other lifetime disorder (Kessler et al. 1995).

On the matter of the sequence of onset of psychological disorders in relation to traumatic experiences, Breslau (2002), in a review of population studies of trauma, PTSD and other disorders, summarises these theories as follows. First, there is the possibility that pre-existing psychological disorders may increase the risk of exposure to traumatic events that may result in PTSD. Second, PTSD may be a contributory risk factor for other psychiatric disorders. Third, there is the possibility that there is a non-causal relationship between PTSD and other disorders. Finally there is the theory that traumatic events themselves cause various disorders other than PTSD.

Whilst clearly important to researchers and to clinical practice, the sequence of onset of additional (co-morbid) disorders is not so central to the question of availability of and access to services. Whichever disorder comes first, or whatever the cause, the research is clearly telling us that PTSD is at the very least a marker which draws our attention to the long term mental health risks and needs of people affected by traumatic events.

Overall the evidence leads to the conclusion that people who suffer from PTSD are more likely to have a range of mood, anxiety and substance-use disorders. They also infer that an examination of the impact of traumatic events should not be solely focused on PTSD, but on a range of possible adverse psychological impacts following trauma exposure.

Treatments for PTSD and other mental disorders

The National Institute for Health and Clinical Excellence (NICE) in the UK is an independent organisation responsible for providing guidance on health promotion and preventing and treating ill health based on the best available evidence. In terms of depression for example, NICE advises a stepped-care approach to treatment depending on the level of severity of an individual's condition. For individuals with mild to moderate depression, NICE recommends the use of either individual guided self help based on the principals of Cognitive Behavioural Therapy (CBT), computerised CBT or a structured group physical activity programme. For severe cases of depression, NICE recommends the use of CBT or interpersonal therapy in conjunction with anti-depressant drug treatment (National Collaborating Centre for Mental Health (NCCMH), 2010).

In terms of PTSD treatment, NICE recommends two psychological therapy treatments of choice in adults and children, namely, trauma-focused CBT or Eye Movement Desensitisation and Reprocessing (EMDR). NICE recommended that drug treatments for PTSD should not be used as a routine first-line treatment for adults (in general use or by specialist mental health professionals) in preference to a trauma-focused psychological therapy (NCCMH, 2005).

The Economic Implications of Mental Health Disorders

Aside from the burden of these disorders in terms of the numbers affected, impact on functionality, quality of life and adverse impact on family and loved ones, mental health disorders have major economic implications for the individual and for wider society (Greenberg 2003, Thomas and Morris, 2002). In the first instance mental health disorders require treatment and medication and therefore are associated with elevated healthcare costs. Secondly given the debilitating effects of these disorders individuals are often unable to carry out their normal daily activities at home or in the work place which invariably results in economic consequences for individuals and wider society. Moreover as a consequence of the impact of symptoms on functionality, individuals with mental disorders often do not have the ability or the motivation to obtain employment or fulfil their economic potential. The extent of the economic burden of mental health disorders in Northern Ireland was examined in a study by the Northern Ireland Association for Mental Health which estimated the cost at £2,852 million in 2002-3. Despite 25% higher rates of mental health disorder in Northern Ireland compared to the rest of the UK, the comparative percentage of the total health care budget is 9.3% and 11.8% respectively (NIAMH, 2004).

Given elevated levels of mental health disorders and the extent of costs outlined above, the majority of which are costs associated with lost productive capacity in Northern Ireland as a result of adverse effects of mental illness, investment and provision of effective treatments for mental health disorders is highly desirable in economic terms. The potential economic savings from investment in evidence-based treatments was recently outlined in the 'Depression Report' which evaluated the economic benefits from training 10,000 new

therapists and rolling out evidence-based treatment for depression. Layard and colleagues at the London School of Economics (2006) showed that investment in effective services for depression will 'pay for itself' if an individual with depression works on average just one month more as a result of treatment.

Traumatic experiences and physical health problems

In recent years a growing body of evidence has emerged pointing to the association of traumatic experiences, trauma-related disorders and mental disorders generally with chronic physical health conditions (Schnurr, 2010; Scott et al. 2006). Studies have linked traumatic stress exposure to such conditions as cardiovascular disease (CVD), diabetes, gastrointestinal disease, fibromyalgia, chronic fatigue syndrome, musculoskeletal disorders, and other diseases (Boscarino, 2004).

Studies from various countries have signalled an association between PTSD and physical health problems including McFarlane et al. (1994) who found significantly higher symptoms of cardiovascular, respiratory, musculoskeletal and neurological symptoms amongst PTSD sufferers. Norman and colleagues found that in men, trauma history was associated with arthritis and diabetes; and in women with digestive diseases and cancer (Norman et al. 2006). Schnurr et al. found in a 30-year longitudinal study of older combat veterans, an increased incidence of upper gastrointestinal disorders was associated with greater combat exposure (Schnurr et al. 2000). Ferry et al. (2008) found an increased risk for those who met the criteria for PTSD and a wide range of chronic physical health conditions - more so than those with major depressive disorder.

Studies have been investigating the degree to which the range of these associated physical health problems is *caused* by the traumatic exposure. Possible explanations include lifestyle changes linked to the consequences of exposure or neuro-chemical changes in the brain arising from PTSD (Kemeny 2005).

Chapter 4: The Methodology in more detail

The Northern Ireland Study of Health and Stress (NISHS)

As previously outlined, results provided in the current report are based on analysis of the Northern Ireland Study of Health and Stress (NISHS). The NISHS is one of nearly 30 national and international World Mental Health Initiative studies being undertaken under the auspices of the World Health Organisation. All studies used the same survey instrument, the Composite International Diagnostic Interview (CIDI) (Robins et al. 1988) to obtain information from participants. These studies are being coordinated and supervised by Harvard University and besides providing valuable national data also open the opportunity for international comparisons.

The Sample

The NISHS is a representative household survey of English speakers, 18 years and older in Northern Ireland. The participants in the NISHS were selected from a random sample of households. Face-to-face interviews were undertaken between February 2004 and August 2008 by professional interviewers from two research companies (Research Evaluation Services and Ipsos MORI). The response rate was 67%. The survey was administered in two parts. Part 1 included a screening section and assessment of 'core disorders' such as depression and general anxiety (n=4340). Part 2 included questions about risk factors, and service use along with assessments of additional disorders such as PTSD. Specifically related to the current proposal, the PTSD included detailed questions about traumatic life events. This section was administered to all Part 1 respondents who met lifetime criteria for any 'core disorder' plus a probability subsample of other respondents. In total 1986 participants completed the total interview (Parts 1 and 2) while 4340 completed Part 1 only. All analyses presented in the current report are based on those who completed the full interview (N=1986).

Experience of 'conflict-related' traumatic events

Experience of traumatic events was assessed in the PTSD section, where participants were presented with 29 specific traumatic event types and asked whether they had ever experienced these events during their lifetime.

As previously outlined, for the purposes of this report, a 'victim' is defined as an individual who experienced a conflict-related traumatic event. The original instrument did not contain a specific question to link specific incidences of the 29 trauma types to the civil conflict in Northern Ireland. To obtain an estimate of the prevalence of traumatic events associated with the "Troubles", the team firstly identified events from the list that were likely to be 'conflict-related'. After excluding event types that were clearly or most likely not "Troubles"-related, we identified a 'conflict-related' category, creating an additional variable within the NISHS dataset. This variable was assigned a value of 1 if an individual reported

experiencing any one of the following traumatic event types from 1968 onwards (1968 is the year from which much of the violence can be seen to have escalated): participated in combat; served as peacekeeper or relief worker in a place of war or terror; was an unarmed civilian in a place of war; lived in a place of ongoing terror; was a refugee; was kidnapped or held captive; was in a man-made disaster; beaten by someone other than parents or partner; mugged or threatened with a weapon; witnessed someone being killed or seriously injured; purposely caused injury or death; saw atrocities.

The categorisation of 'conflict-related' events in this paper follows a similar procedure used by Karam and colleagues (2008), in their categorisation of 'war-related traumatic events' associated with the conflict in Lebanon, whilst taking account of issues local to the Northern Ireland conflict. Given that an unknown proportion of unexpected deaths and traumatic events of loved ones will also be associated with the "Troubles", it is expected that the current estimation of 'conflict-related' trauma is a substantial underestimation. Evidence from the recent Northern Ireland Omnibus Survey for example found that around 11% of respondents reported they had suffered bereavement as a consequence of the conflict (NISRA, 2010).

Traumatic event groupings

For purposes of comparison, NISHS participants were categorised into one of three trauma groupings depending on their experience of traumatic events:

- The first group included individuals who experienced any conflict-related traumatic event;
- The second included those who experienced any other traumatic event (but not a conflict-related event);
- The third category included those who hadn't experienced any traumatic event during their lifetime.

Assessment of Mental Health Disorders

In the NISHS, mental health disorders were assessed using the World Mental Health, Composite International Diagnostic Interview (WMH-CIDI) (Kessler & Ustun, 2008). This is a fully structured lay interview that generates diagnoses based on DSM-IV criteria (APA, 1994). The current report includes estimates of a range of anxiety, mood, substance and impulse-control disorders among those who experienced conflict-related trauma compared to other trauma groupings described above. **Anxiety disorders** considered in this report include agoraphobia, generalized anxiety disorder, obsessive compulsive disorder, panic disorder, posttraumatic stress disorder, social phobia, specific phobia, separation anxiety disorder/adult separation anxiety. **Mood disorders** include bipolar disorder, dysthymia, major depressive disorder. **Substance disorders** include alcohol abuse, alcohol dependence, drug abuse and drug dependence. Finally, **impulse-control**

disorders include attention-deficit disorder, conduct disorder, intermittent explosive disorder and oppositional-defiant disorder.

Onset of mental health disorders in relation to conflict

In order to obtain a deeper insight into the potential impact of the "Troubles" on mental health, the timing of each disorder was examined in relation to an individual's experience of conflict-related trauma. As well as indicating whether an individual met the criteria for each disorder described above, the NISHS data also includes information on the age at which an individual first developed the disorder. This information was compared to the *age at which an individual first experienced a conflict-related traumatic event* to determine the sequence of onset of disorders in relation to the experience of conflict.

Based on comparison of an individual's age when they first experienced a conflict-related trauma with their age at onset of specific disorders, the research team determined whether a disorder first occurred prior to experience of conflict or simultaneous/subsequent to experience of conflict. Also based on this analysis, the research team identified those individuals who had **'post-conflict' disorders**. For the purposes of this report an individual met the criteria for a **'post-conflict' disorder** if the disorder in question first developed simultaneous to or after their experience of conflict-related trauma.

Chronic physical health conditions

The NISHS data also contains information on a range of chronic physical health conditions that an individual may have acquired in their lifetime. These include arthritis or rheumatism, back or neck pain, persistent headaches, other chronic pain, allergies, stroke, heart attack, heart disease, high blood pressure, asthma, tuberculosis, any other chronic lung condition, diabetes or high blood sugar, ulcer of the stomach or small intestine, epilepsy and cancer. The prevalence of these conditions was examined among those who experienced conflict compared to other trauma groupings described above.

Service use, delays and effectiveness of treatment

Individuals were asked about their use of services both at the end of each disorder section and also in a more comprehensive 'Services' section of the NISHS interview. Results on service use are therefore presented in two sections in this report.

At the end of each diagnostic section, participants were asked had they ever talked to a medical doctor or other health professional about symptoms relating to that particular disorder. If an individual answered yes, they were subsequently asked the age at which they first sought help for symptoms relating to that specific disorder and if they ever received treatment that was helpful or effective. Delays in treatment seeking were determined by comparing age when a specific disorder first onset with an individual's age at first treatment

for that disorder.

The questions in the 'services' section ask about service use in relation to 'problems with emotions, nerves or mental health'. Within this section individuals were also asked about the types of service provider they visited for help with these problems. The following broad categories of treatment provider were developed from questions in the services section of the questionnaire: psychiatrist, other mental health specialist, general medical professional, human services provider and complementary and alternative medicine (CAM).

Medication

In the pharmaco-epidemiology section of the WMH-CIDI, people were asked about various types of medication they had taken in the last 12 months for problems with their emotions nerves or mental health. Specifically, individuals were asked if they had taken sleeping pills or sedatives, anti-depressants, tranquillizers, amphetamines or other stimulants, anti-psychotic medication, or any other prescribed or non-prescribed medication.

Socio-demographic characteristics associated with experience and mental health impact of conflict-related trauma

The experience of conflict-related trauma, prevalence of lifetime and post-conflict disorders and prevalence of service use was examined in relation to a number of key socio-demographic characteristics. These included gender, current[3] age (18-34 years, 35-49 years, 50-64 years, and 65+ years), age at first experience of conflict-related trauma (0-9 years, 10-19 years, 20-29 years, 30-39 years, and 40+ years), current household income (low, low-average, high-average, and high), current marital status (married/cohabitating, separated/widowed/divorced, and never married), and highest educational attainment (primary, GCSE/O-level, A level, and higher level). In addition, where appropriate, results where expressed in terms of an individual's current Health and Social Care Trust[4]. That is, the Health and Social Care Trust where an individual lived at the time of the NISHS interview and not the location of their traumatic experience.

Methods of analysis

Weights were used to adjust for sample selection, non-response and post-stratification factors such age, gender, and geographical region. An additional weight was also applied to adjust for differential selection into Part 2 of the survey. Information on weights and stratification were incorporated into all analyses included in the current report.

The majority of analyses carried out for this report were implemented using STATA statistical

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[3] In terms of socio-demographic characteristics, 'current' refers to status at the time of the NISHS interview.

[4] There are five Health & Social Care Trusts under the current statutory structures for the delivery of health and social care services. They are, Belfast, Northern, Western, Southern and South Eastern.

software, version 10.0 (StatCorp, 2007). All statistical significance tests were carried out at the 5% level. Socio-demographic predictors of trauma-related disorders and service use were examined using logistic regression analyses (Pampel, 2000) with multiple predictors. Logistic regression analysis examines the statistical association of a range of characteristics with a given dichotomous outcome, such as having a conflict related trauma or not. The association of each characteristic with this outcome is represented as an 'odds ratio' which indicates the risk of having a disorder compared to a given base category. So for example if we examined gender in relation to having a disorder and females had an odds ratio of 2, this would indicate that females were twice as likely to have a disorder as males (all else being equal).

Projected cumulative delays in treatment seeking from initial onset of a disorder were examined through survival analysis using the actuarial method, implemented in the Statistical Analysis System version 8.2 (SAS Institute, 2001). The median duration of treatment delay was defined as the median number of years between disorder onset and the first time they sought treatment.

Where relevant, n values and confidence intervals relating to analysis contained within the current report will be made available on request from the research team.

Extrapolation of findings to the Northern Ireland population

As previously, the NISHS, as an epidemiological study of mental health, allows the generalisation of findings to the general adult population. As a consequence, prevalence and estimates and other findings can be combined with NI adult population figures to obtain estimates of the number of adults in Northern Ireland that are likely to have experienced trauma or have PTSD for example. Where relevant, the research team applied prevalence estimates with the 2008 adult population figures (2008 was when the NISHS data collection was completed). Adult population figures were obtained from the Northern Ireland Statistics and Research Agency (NISRA) (NISRA, 2010).

Chapter 5: Findings and analysis of the impact of conflict-related traumatic events on the adult population

Introduction

In this Chapter the key findings from the analysis of the Northern Ireland Study of Health & Stress (NISHS) will be reported. The findings update the *Trauma, Health & Conflict in Northern Ireland* Report, (Ferry et al. 2008) and include additional and more detailed analysis of the NISHS data. Comparative data from other studies is also included where it seems relevant to do so.

The findings are reported in the following Sections:

1. The prevalence of exposure to traumatic events, which includes a specific section on the exposure to events associated with the civil conflict in Northern Ireland.

2. The prevalence of post traumatic stress disorder (PTSD) in the adult population.

3. The prevalence of lifetime mental health disorders and 'post-conflict' disorders in the adult population amongst those exposed to conflict-related traumatic events.

4. The prevalence of chronic physical health conditions amongst those exposed to conflict-related events, and those with 'post-conflict' disorders.

5. Help-seeking and service use.

At the end of each Section the findings are discussed and the implications for policy, services, training and practice are assessed. Any recommendations that appear to the research team to be relevant are identified (and repeated in the Chapter of Recommendations at the end of the Report). Finally, areas for further research are identified where this seems appropriate.

Section 1

The prevalence of exposure to traumatic events

Many population studies of post traumatic stress disorder (PTSD) and other trauma related disorders include an assessment of the level or prevalence of traumatic events experienced by the population. In his overview of such studies and as already noted, Galea et al. (2005) found that around two thirds of adults in Western industrialised societies had experienced one or more traumatic events over the course of their lifetime.

Participants in the NISHS were asked about their experiences of traumatic events. The findings are summarised in Table 1 below. This shows that 60.6% of the Northern Ireland adult population have experienced at least one type of traumatic event during their lifetime (includes all types of events: conflict and non conflict-related). This figure largely coincides with the estimate that two thirds of the general population will experience a traumatic event during their lifetime (Galea et al. 2005). Combining this figure of 60.6% with NI adult population figures suggests that an estimated 813,000 adults have experienced a traumatic event at some point in their life.

The difference between the prevalence for males and females was tested and found to be statistically significant, namely males were significantly more likely than females to have experienced a traumatic event during their lifetime.

Table 1: Lifetime experience traumatic events (Total sample n=1986)

	Lifetime experience of any traumatic event % (n)[5]
Overall Sample*	60.6 (1287)
Males	64.8 (558)
Females	56.9 (729)

* χ^2 test indicates significant gender differences at the 5% level of significance.[6]

Experience of *conflict-related* traumatic events

To obtain an estimate of the prevalence of traumatic events associated with the "Troubles" the research team identified those events from the list of traumatic events assessed in the NISHS that were likely to be conflict-related. After excluding those event types

[5] Percentages are weighted values while n-values represent the raw figures. This applies throughout the report.

[6] A χ^2 or Chi-squared test is a statistical test which examines if differences (in exposure to trauma for example) between two groups are likely to occur by chance. Significance is the level of certainty that the result has not occurred by chance. In social sciences this level is usually 5% or less.

that were clearly or most likely not "Troubles"-related, the team identified a new conflict-related category out of those event types that seemed to be conflict related. Individuals were identified as having experienced a 'conflict-related' trauma if they endorsed having experienced any one of these event types from 1968 onwards. This categorisation of conflict-related events is described in more detail in the Methods Section of this report. As previously described, for methodological reasons traumatic experiences related to experiencing the sudden death of, or trauma to a loved one, have been excluded from the list of traumatic event types included under the conflict-related category.

Table 2 shows the prevalence *conflict-related* traumatic experiences among the Northern Ireland adult population. Overall, an estimated 39% of the adult population (which equates to 524,000 individuals) have experienced at least one conflict-related traumatic event during their lifetime, revealing the prominence of the conflict in the lives of the current adult population. The most prevalent type of conflict-related traumatic experience was living as a 'civilian in a place of ongoing terror'. Again males were significantly more likely than females to have experienced each of the event types except for being a 'refugee' and having 'purposely caused serious injury or death'.

Table 2: Lifetime exposure to conflict-related events (Total sample n=1986)

Event Type	Total % (n)	Males	Females
Combat experience*	2.6 (54)	4.7	0.6
Relief worker in warzone*	1.4 (27)	2.4	0.4
Civilian in warzone*	3.1 (70)	4.6	1.8
Civilian in a place of ongoing terror*	19.5 (408)	26.1	13.5
Refugee	0.9 (23)	1.2	0.6
Kidnapped*	1.4 (33)	2.2	0.6
Manmade disaster*	6.4 (153)	8.7	4.4
Beaten by someone else*	6.8 (137)	11.8	2.3
Mugged or threatened with a weapon*	9.2 (208)	12.9	5.8
Witnessed death or serious injury*	16.9 (355)	22.6	11.7
Purposely caused serious injury or death	0.3 (7)	0.4	0.2
Saw atrocities*	3.3 (85)	5.0	1.8
Any conflict-related event	**39.0 (817)**	**49.8**	**29.1**

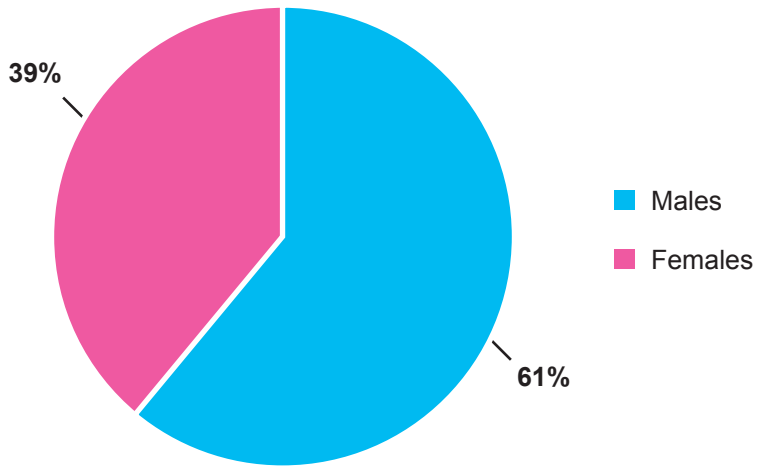
* χ^2 test indicates significant gender differences at the 5% level of significance.

Demographic breakdown of the sample of individuals who experienced any conflict-related traumatic event

The series of pie charts below (Figure 1 – Figure 5b) provide a demographic profile of the sub-sample of individuals who experienced any conflict-related traumatic event (n=817). Almost two thirds of the sample were male, 35% were aged 35-49 at the time of the NISHS interview and two thirds were married or cohabiting at the time of the NISHS interview.

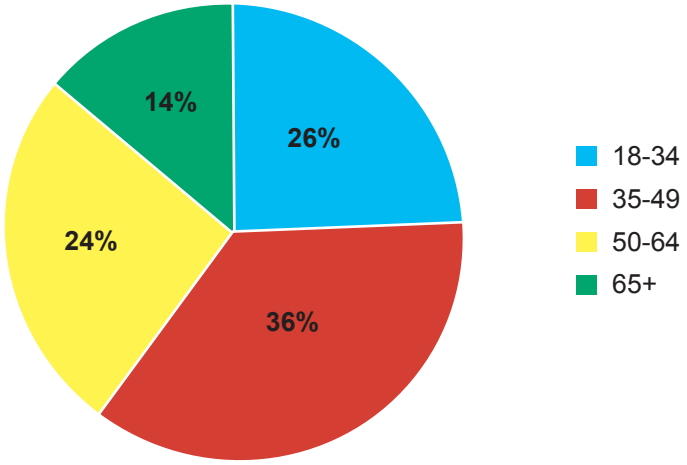
Figure 4 provides a breakdown of the sample of participants in terms of their age when they first experienced any conflict-related traumatic event. The majority of the sample experienced their first conflict-related trauma between the ages of 10 and 19, while almost a quarter first experienced conflict as young children (aged 0 to 9 years). The experience of conflict-related trauma among younger age groups is further highlighted by the fact that 80% of those who experienced their first conflict-related traumatic event did so between the ages of 0 and 29.

Figure 1: Breakdown of individuals who experienced any conflict-related traumatic event by gender



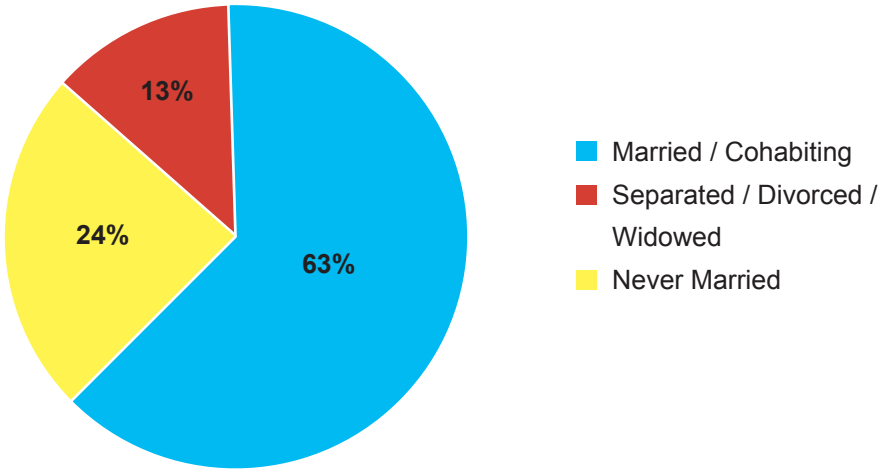
For comparative purposes, the gender breakdown of the overall NI adult population is: males, 48%; females, 52% (NISRA, 2010).

Figure 2: Breakdown of individuals who experienced any conflict-related traumatic event by current age-group[7]



For comparative purposes, the age-group breakdown of the overall NI adult population is: 18-34, 31%; 35-49, 28%; 50-64, 22%; 65+, 19% (NISRA, 2010).

Figure 3: Breakdown of individuals who experienced any conflict-related traumatic event by current marital status[8]

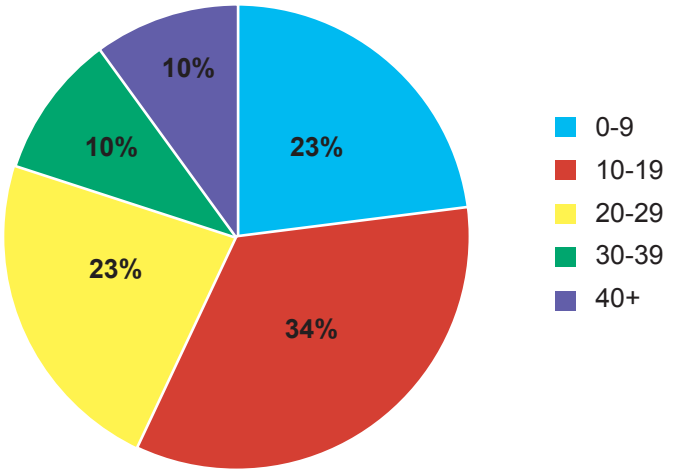


For comparative purposes, the marital status breakdown of the overall NI adult population is: married/cohabiting, 59%; separated/ divorced/widowed, 14%; never married, 27% (from NISHS analysis).

[7] Current age indicates the age of the participant at the time of the NISHS interview.

[8] Current marital status indicates the marital status of the participant at the time of the NISHS interview.

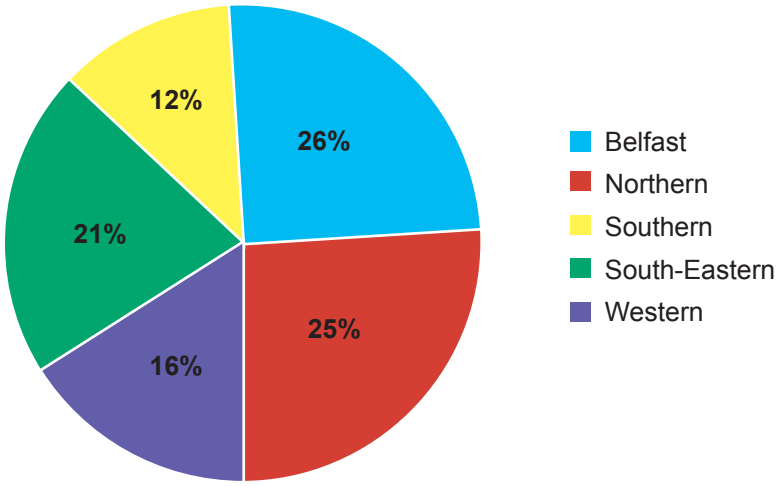
Figure 4: Breakdown of individuals who experienced any conflict-related traumatic event by age-group at which they first experienced a conflict-related trauma



One useful way of examining the sample of individuals who have experienced conflict is by current geographical location which helps identify where current need is located. Figure 5a shows the percentage breakdown of all individuals who experienced any conflict-related trauma by current Health & Social Care Trust. For example 26% of all those who experienced one or more conflict-related traumatic events, currently live in the Belfast Health & Social Care Trust area.

For comparative purposes, the breakdown of the NI population (2008 figures) by Health and Social Care Trust is shown in the footnote following Figure 5. These figures show that a disproportionately higher percentage of those who experienced conflict currently live in the Belfast Trust compared to its share of the population (26% versus 19%). Comparison of these figures for the Northern, South Eastern and Western Trusts shows largely similar percentage levels. However, looking at the figures for the Southern Trust shows that while 16% of the population currently live in this area, its percentage share of those who experienced a conflict-related traumatic event is just 12%.

Figure 5: Breakdown of individuals who experienced any conflict-related traumatic event by current Health & Social Care Trust[9]



For comparative purposes, the Health and Social Care Trust breakdown of the overall NI adult population is: Belfast, 19%; Northern, 27%, Southern, 19%, South Eastern, 19%, Western, 16% (NISRA, 2010).

[9] Current Health & Social Care Trust indicates the area in which the participant resided at the time of the NISHS interview. The location (census output area) of each participant was indicated in the NISHS data and then categorised in terms of Health and Social Care Trust (based on 2007 defined boundaries).

The prevalence of any conflict-related traumatic event by gender, age, marital status and Health & Social Care Trust

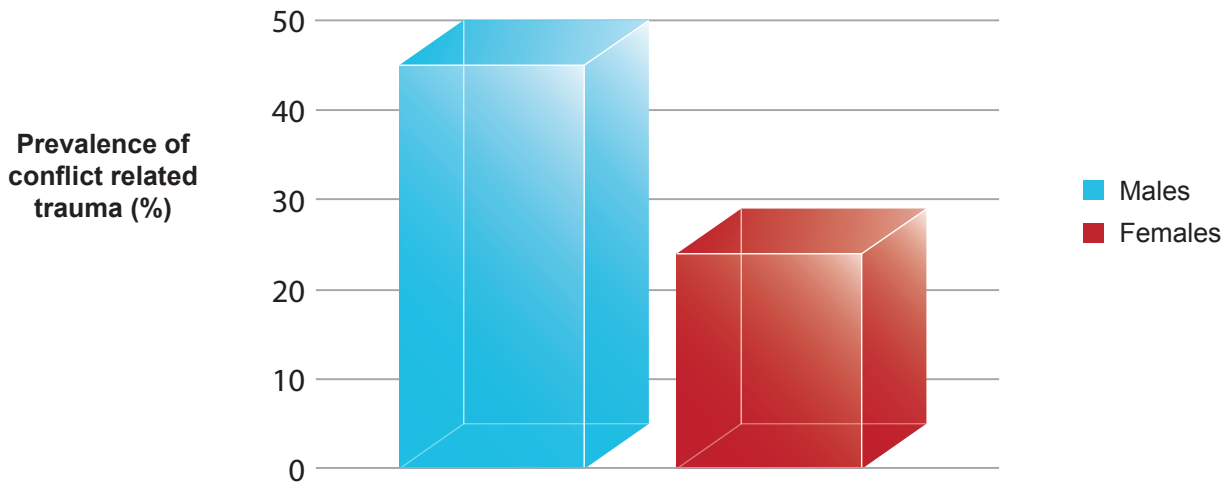
The sub-section immediately above looked at the demographic characteristics of all individuals who reported having had one or more conflict-related traumatic experiences. The next section goes on to examine the *level or prevalence* of conflict-related traumatic experiences among these different socio-demographic groupings.

As reported in Table 1, 39% (nearly 2 out of every 5) of the Northern Ireland adult population have experienced at least one type of conflict-related traumatic event during their lifetime. Figures 6-9 below indicate the prevalence of 'conflict-related' traumatic events by gender, age-group, marital status and Health and Social Care Trust.

Almost half of males experienced a conflict-related event during their lifetime compared to just over a quarter (29%) of females.

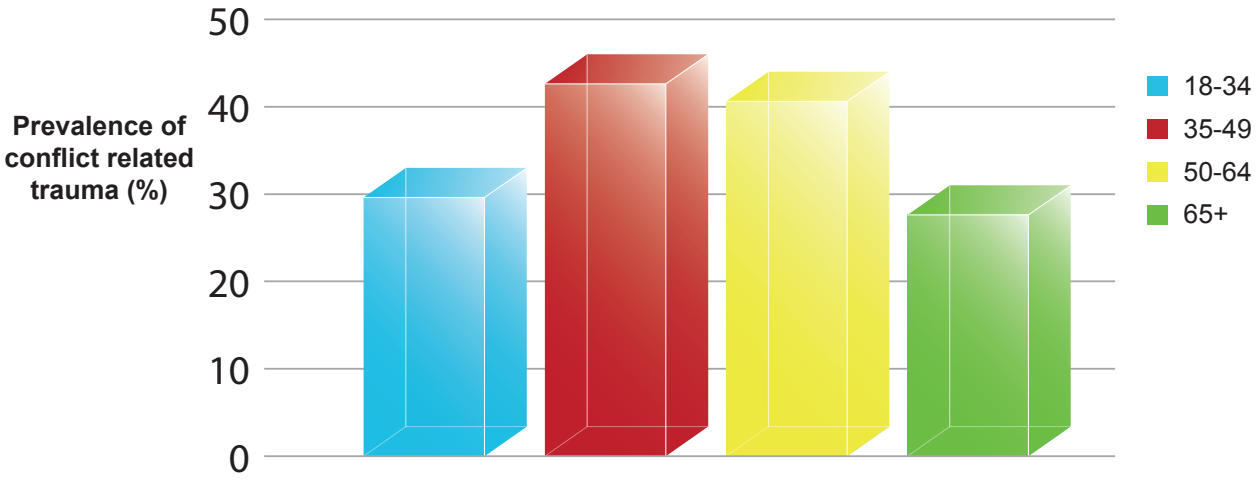
Conflict-related events were also more prevalent among participants currently aged 35-49 (46%) and 50-64 (44%) compared to the youngest and oldest age-groups. Differences between marital status categories were not significant although the prevalence of experience of conflict-related events was marginally higher among those who were married or cohabiting.

Figure 6: Prevalence of having experienced any conflict-related traumatic event by gender



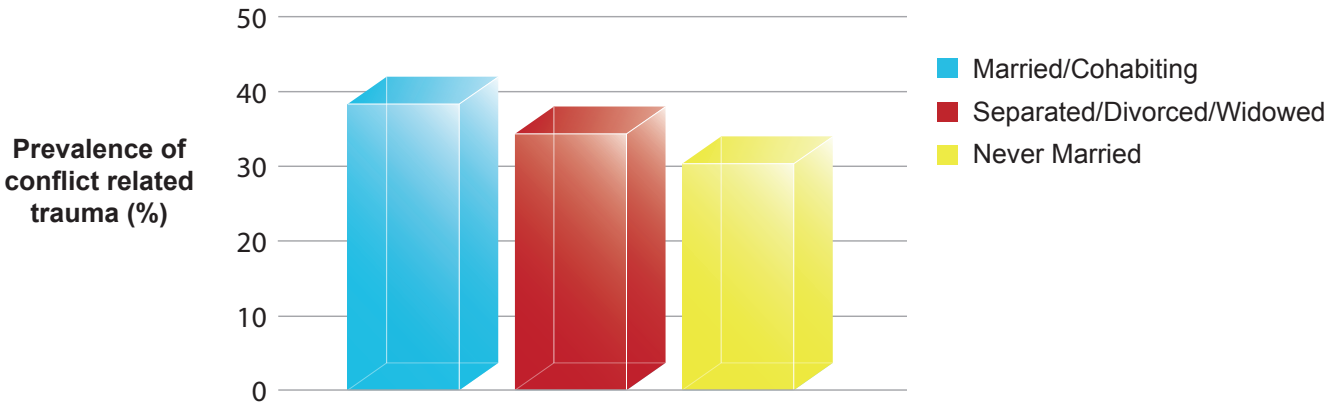
χ^2 test indicates significant gender differences at the 5% level.

Figure 7: Prevalence of having experienced any conflict-related traumatic event by current age-group



Significant differences between age-groups at the 5% level.

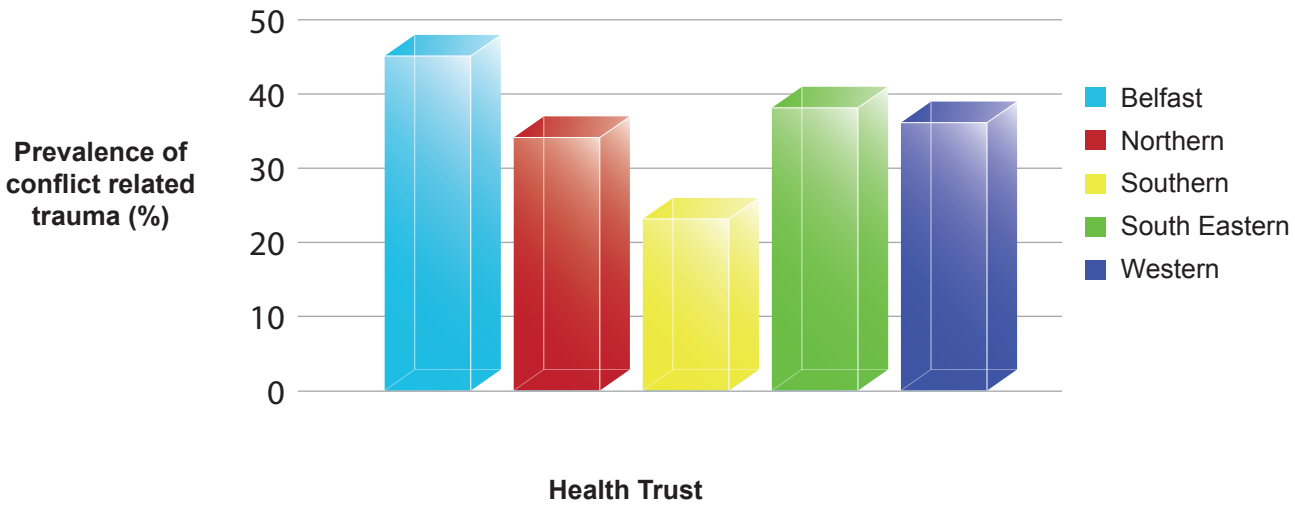
Figure 8: Prevalence of having experienced any conflict-related traumatic event by current marital status



No significant differences between categories at the 5% level.

Figure 9 shows the prevalence of conflict-related trauma by current Health & Social Care Trust. It should again be noted that this table does not indicate where the traumatic event took place; rather it shows the prevalence of conflict-related traumatic events among individuals who lived in each of the five trusts at the time of the NISHS interview. Almost half of the adult population living in the Belfast Trust at the time of the interview experienced a conflict-related traumatic event compared to 27.4% of those who lived in the Southern Trust. Combining the percentages in Figure 9 with relevant adult population figures in each Trust, provides an estimate of the number of individuals involved. For example approximately 126,000 currently living in the Belfast Trust are estimated to have experienced a conflict-related traumatic event. Based on these area estimates of conflict-related trauma and combining them with 2008 adult population figures, it is estimated that the number of individuals who experienced conflict-related trauma currently living in each of the Health Trusts are as follows: Northern (130,000), South Eastern (107,000), Southern (71,000) and Western (85,000).

Figure 9: Prevalence of having experienced any conflict-related traumatic event by current Health & Social Care Trust

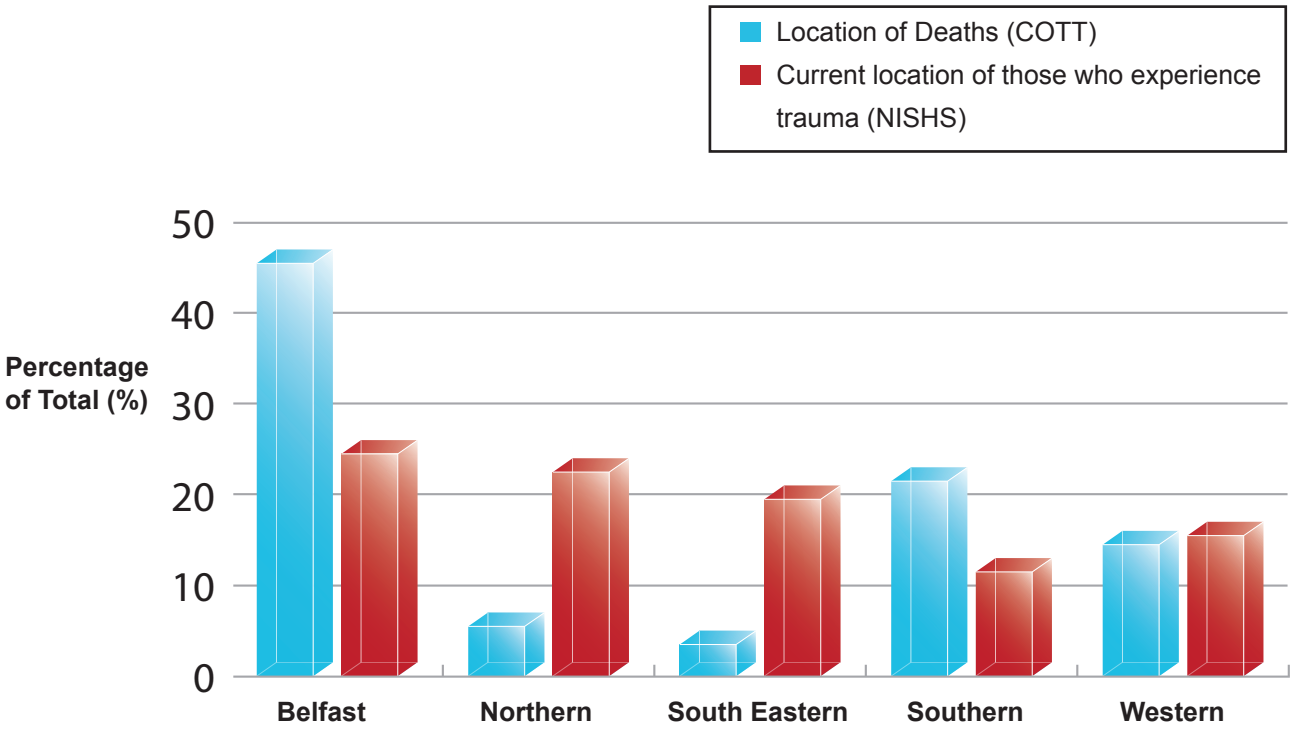


Significant differences between Health & Social Care Trusts at the 5% level.

Comparison of the location of "Troubles-related" deaths with the current location of those who experienced any conflict-related traumatic event

As noted previously, the earliest significant study on mental health in relation to the NI conflict has been the Cost of the Troubles Study (COTT) (Fay et al. 1999). This study provided a valuable insight into the location of violence associated with the "Troubles" including the number of deaths which occurred in each Local Government District in Northern Ireland. The figure below compares the percentage breakdown of conflict related deaths by Health and Social Care Trust (as per the COTT study) with the current location of individuals who experienced any conflict-related traumatic event (as per the NISHS). While these studies focused on different population samples and measured two different indices of conflict-related events (i.e. deaths and traumatic events), this comparison provides a good indication of where current need exists compared to the locations of conflict-related violence/deaths.

Figure 10: Comparison of locations of deaths (Fay et al. 1999) with current locations of individuals who experienced conflict-related traumatic events (NISHS)



Discussion

This section has looked in general at level of exposure of the population to traumatic events and specifically at the exposure to events associated with conflict. The basis upon which conflict-related events were determined has been described in some detail in Chapter 4.

In the view of the research team, the reported proportion of people who experienced conflict-related traumatic experiences is likely to be conservative. This is due to the difficulty (previously described) in determining what proportion of two of the trauma event types used in the study, i.e. sudden deaths of, or traumas to loved ones, could be accurately apportioned to the "Troubles". As a result these trauma types were omitted from the conflict-related trauma category. Given the number of deaths associated with the conflict, and the nature of the deaths, it seems hardly necessary to observe that deaths associated with the "Troubles" would form a distinctive proportion of trauma experiences. The problem was that it was not possible, with sufficient confidence, to determine the proportion. Whilst answering a slightly different question, a recent study commissioned by the Commission for Victims & Survivors for Northern Ireland found that 30% of respondents had been 'directly affected' by the conflict, through bereavement (11%), physical injury (6%) or experience of trauma (directly or as a carer) (24%)(NISRA, 2010). This gives us a sense of the estimated proportion of the Northern Ireland population that have experienced the sudden death of a loved one as a result of the conflict. The point of this discussion is that the conflict-related category used to define the proportion of the sample that were affected by the conflict and from which conclusions have been reached about the population as a whole, is likely to be under-estimated.

In this Section there are two initial observations that could be made about the level of exposure to traumatic events. First, Northern Ireland's level of exposure to traumatic events (60.6% or an estimated 813,000 individuals) is similar to international comparisons derived from a 2005 study which concluded that around two-thirds of populations experience traumatic events (Galea et al. 2005). The second observation is that 39% of study participants reported having had one or more traumatic experiences associated with the conflict. This means that conflict-related traumatic events have formed a large and distinctive category of stressor on the population with an estimated 524,000 individuals having experienced a traumatic event during their lifetime. We can conclude therefore that conflict-related traumatic events have been commonly experienced by the population. The implication therefore is that the health and associated risks associated with traumatic experiences extend to a large proportion of the population. This will be discussed further below.

Looking at the findings in more detail, the results reveal a number of important points that have implications for understanding the impact of conflict. Figure 4 shows that nearly one quarter of participants experienced their first traumatic event associated with the conflict whilst they were under the age of ten years. A further third (34%) were between the ages of 10 and 19 years, while another 23% were between 20 and 29. Taken together, 80% of

the adult population experienced their first traumatic event before they reached the age of 29 years. There is evidence to suggest that exposure to traumatic events in childhood and adolescence in particular can have a substantial psychological impact in later life (Thabet et al. 2003). Kessler and colleagues (2010) highlight the importance of childhood trauma in determining adult mental health outcomes. In their cross national study (including data from 21 countries) of the association of childhood adversities with adult psychopathology across 12 types of disorder, the authors concluded that the experience of childhood adversities accounted for 29.8% of all disorders across all countries.

Figure 5 shows the breakdown of the sample of individuals who experienced a conflict-related trauma by Health and Social Care Trust and the breakdown of the adult population in these areas (in the accompanying footnote). Comparing percentages shows that while the percentage of those who experienced conflict currently living in the Northern, South Eastern and Western Trust largely reflects their percentage share of the population, the percentage of those who experienced conflict is disproportionately higher in the Belfast Trust and lower in the Southern Trust compared to their share of the population. Although this analysis is based on where people lived at the time of the NISHS interview and not where traumatic events took place, findings in relation to the Belfast Trust may well reflect the intensity of violence experienced this area. Findings in relation to the Southern Trust require further investigation.

Figure 6 (and Table 2) provides more detail about the comparative experiences of male and females. From the findings, half of males and almost 30% of females experienced one or more events associated with conflict during their lifetime, nearly twice as many men as women. Compared with the figures for all traumatic event types (males, 64.8%; females 56.9%), gender differences are much more marked with respect to conflict-related event types.

Figure 10 compared two sources of data. The first is the findings of the 1998 Cost of the Troubles Study (COTTS) on the location of deaths associated with the conflict. The COTTS suggests that deaths are a proxy for understanding the impact on local populations. The second is the location of participants at the time of their interview for the NISHS. The data has been presented in terms of the Health & Social Care Trust structures extant at the time this report was compiled (2011). The comparison suggests that whilst the number of deaths was very high for example in the Belfast Trust area, the population that experienced events associated with the conflict, is also currently to be found in those Trusts adjacent to the Belfast Trust. Perhaps there are a number of factors affecting this shift. First, we might reasonably conclude that a high proportion of army, police and other service personnel who died in the violence, died in areas they served in, but did not live in. This is particularly the case with British soldiers who came from England, Scotland, Wales or other locations outside Northern Ireland. Second the shift could be due to the movement of individuals and populations to areas now outside the Belfast Trust area, particularly but not exclusively to areas we might regard as Greater Belfast, e.g. Newtownabbey, Lisburn. Whilst recognising that some areas experienced very high levels of violence in comparison to others, with undoubted implications for local neighbourhoods and communities, these findings suggest that we need also to be alert to the possibility that a proportion of those

who experienced violence now live elsewhere, an observation which we will later see has implications for the public services and specifically services for people affected by the conflict. In terms of understanding where the need now exists the intensity of deaths linked to the violence within areas is not the only marker for current need.

Recommendations

The finding that an estimated 39% of the adult population have been exposed to one or more traumatic events associated with the civil conflict reveals that events associated with the conflict have been a major traumatic stressor for the population. This finding should be a matter of concern especially in relation to the development of policy and services. It is recommended that policy, commissioning and service delivery plans should include an assessment of the exposure of the population or target group concerned to events associated with the conflict so that due consideration can be given to the risks of mental health needs associated with such exposure.

Section 2

Prevalence of PTSD among the Northern Ireland adult population

As previously outlined, post traumatic stress disorder (PTSD) is a unique mental health disorder as it is the only disorder that must diagnostically be preceded and directly linked to a traumatic event. The level of PTSD in a given population therefore provides a useful barometer of the mental health impact of traumatic events. This is particularly relevant where particular types of traumatic events have been experienced by a population such as natural disasters, war or, as in the case of Northern Ireland, events associated with the civil conflict

In this Section the prevalence of PTSD in the Northern Ireland population is examined by a comparison of this level with other estimates from around the world. An estimate of the level of PTSD associated with the Northern Ireland conflict is also provided.

Table 3 provides estimates of the levels of PTSD among the Northern Ireland adult population[10]. Overall, 5.1% (one in 20) of the population met the criteria for PTSD in the 12 months previous to the NISHS interview while 8.8% (just less than one in 10) met the criteria at some point in their life (the lifetime figure). If we combine these prevalence rates with NI population figures, we can conclude that approximately 118,000 individuals met the criteria for PTSD at some point in their lifetime. The 12-month figure represents the best estimate of current levels of PTSD among the population and suggests that approximately 68,000 individuals met the criteria for PTSD in the 12 months previous to the interview. Examining PTSD alone therefore points to substantial levels of need among the NI population as a result of traumatic experiences.

Almost 15% of individuals who experienced a traumatic event went on to meet the criteria for PTSD at some point in their life (conditional prevalence[11]). In contrast to findings in relation to the experience of traumatic events, females were significantly more likely than males to meet the criteria for lifetime and 12-month PTSD. In addition females had a higher conditional risk of PTSD following exposure to traumatic events.

Case-by-case analysis of the subgroup of individuals with PTSD in terms of the qualifying event (i.e. the event linked to PTSD) reveals that approximately 29% (nearly one third of all those who met the criteria for lifetime PTSD representing 2.6% of the total Northern Ireland adult population) of lifetime PTSD was associated with conflict-related traumatic events, representing an estimated 34,000 individuals. An estimated 27% of 12-month PTSD was associated with conflict-related traumatic events, which corresponds to approximately 18,000 individuals.

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[10] PTSD figures presented in the current report are updated estimates to those provided in Trauma, Health and Conflict (Ferry et al, 2008), which was based on a preliminary wave of the NISHS data.

[11] Conditional prevalence indicates the percentage of those who experienced any traumatic event who go on to have PTSD at any point in their life.

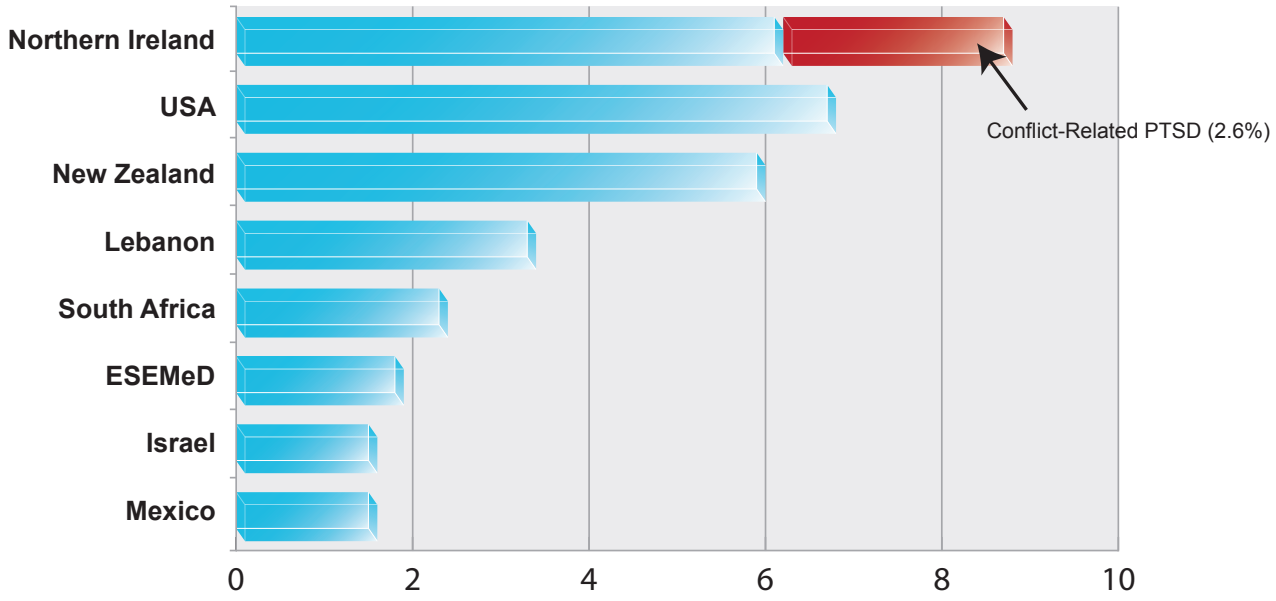
Table 3: Prevalence of post-traumatic stress disorder among the Northern Ireland population (conflict and non-conflict related) (total sample n=1986)

	Total % (n)	Males	Females
12-month PTSD*	5.1 (129)	4.0	6.1
Lifetime PTSD*	8.8 (238)	6.4	11.0
Conditional PTSD*	14.6 (238)	10.0	19.3

* χ^2 test indicates significant gender differences at the 5% level.

Comparison of rates of PTSD in Northern Ireland with other countries involved in the WMH Survey Initiative reveals that Northern Ireland has the highest rates among all countries. Figure 11 compares the lifetime rate of PTSD in Northern Ireland with rates from a selection of other WMH countries that have produced estimates. At 8.8%, the lifetime prevalence of PTSD in Northern Ireland is higher than the USA, well above estimates from other Western European countries and also countries with a recent history of civil conflict.

Figure 11: The lifetime prevalence of PTSD in selected WMH Survey Initiative countries



ESEMeD is a collaboration of six western European countries: Belgium, France, German, Italy, Spain and the Netherlands

Discussion

For reasons described above, this sub-section focuses on PTSD, because of its diagnostic association with traumatic events. It is also important to note the people exposed to traumatic events can develop other mental health problems instead of PTSD, or as well as PTSD. Collectively we might regard PTSD and these other disorders as 'trauma-related disorders'.

The findings described above show that an estimated 5.1% of the adult population in Northern Ireland met the criteria for 12-month PTSD. If this percentage is applied to adult population figures for 2008, an estimated one in 20 or 68,000 individuals may have met the criteria for PTSD, over that 12 month period. Lifetime PTSD describes the percentage of the population who meet the criteria for PTSD at some point in their life. Estimates presented above indicate that 8.8% or an estimated 118,000 individuals of the adult population of Northern Ireland met the criteria for PTSD at some point in their life. Case-by-case analysis of the subgroup of individuals with PTSD in terms of the qualifying event (i.e. the event linked to PTSD) reveals that approximately 29% (nearly one-third) of lifetime PTSD and 27% (over a quarter) of 12-month PTSD were associated with 'conflict-related' traumatic events.

It is when the Northern Ireland figures are compared with international estimates that the significance of these levels of PTSD becomes clearer. For reasons not fully understood and which require further investigation, the Northern Ireland PTSD figures stand out as the highest of all the studies from the WMH Survey Initiative that have so far published their results. This includes comparisons published by other areas that have experienced war and conflict. In terms of a tentative explanation, the duration of the conflict in Northern Ireland is most probably a factor but given the duration of the conflicts in Israel, Lebanon and South Africa, this is probably an insufficient explanation. Another factor might be related to the point Northern Ireland has reached in its political and peace building processes. Studies from the early days of the "Troubles" did not detect any marked evidence of adverse mental health consequences. It is only as time has passed that other studies began to pick up something of the distinctive need linked to the violence, with this study being the latest in that series of studies. One factor that might in part explain this is that perhaps it is when conflict has ended that people are better able to articulate their experiences and needs. This issue would benefit from further enquiry and research.

Looking more closely at the levels of PTSD associated with the conflict and to present the data slightly differently, the findings above show that 29% of all those who met the criteria for lifetime PTSD, met the criteria linked to a conflict-related traumatic experience. The figures for 12-month prevalence are one in four. A later section explores in more detail the association of a wider range of mental health disorders including PTSD in relation to the timing of the participants' traumatic experiences.

Perhaps the most important point from this section is that when set alongside international comparators the level of need in Northern Ireland is extraordinary. As a marker for adverse mental health outcomes associated with the civil conflict, the high level of PTSD shows

that Northern Ireland has a comparatively high level of PTSD and given the prevalence of exposure to conflict related traumatic events discussed in Section 1, points strongly to the impact of the violence on the population. If we take PTSD to be a barometer of wider need, then there is reason to be concerned that the civil conflict has had a pronounced impact on the health and wellbeing of the population, a point that is discussed further below.

Recommendations

The levels of PTSD in the Northern Ireland population are the highest across a number of related international studies. As a marker for wider need, the levels of PTSD should be noted and addressed as a public health concern and be a distinctive consideration in relevant areas of public policy and services.

Section 3

Mental health disorders among those who experienced conflict-related trauma

In Section 2 the prevalence on one particular disorder, PTSD, which is specifically associated with traumatic experiences, was discussed. In this Section the wider mental health impact of civil conflict is reported. Where relevant and feasible, the findings are reported in relation to three groups, namely:

1. Conflict-related trauma: Those who experienced one or more conflict-related traumatic events during their lifetime. This group includes those who may have also experienced one or more non conflict-related traumatic events.

2. Non conflict-related trauma: Those who experienced one or more traumatic events not associated with the conflict. This group did not report any traumatic events classified as conflict-related.

3. No Trauma: Those who did not report any traumatic experiences – conflict or non-conflict related.

The section that follows presents information on the prevalence of a wide range of mental health disorders that were assessed in the NISHS. For ease of reference these can be summarised into four main groups, namely:

1. Anxiety disorders

2. Mood disorders

3. Substance disorders

4. Impulse-control disorders

Prevalence of ***lifetime and 12-month disorders*** among those who experienced any conflict-related traumatic event

Table 4a compares the prevalence of a range of lifetime mental health disorders among (1) *those who experienced a conflict-related trauma, (2) those who experienced a non-conflict related trauma only and (3) those who did not experience any traumatic event.* For example 8.6% of individuals who experienced a conflict-related trauma had generalised anxiety disorder (GAD) at some point in their life compared to 6.7% of those that experienced a non-conflict-related trauma only and 2.8% of those that hadn't experienced a traumatic event.

The most prevalent disorders among those who experienced conflict were major depressive disorder (MDD), alcohol abuse, PTSD and drug abuse. Overall 53% (or an estimated 277,000 individuals) of those who experienced a conflict-related trauma had a lifetime mental health disorder of one kind or another. This compares with 43% for the non conflict-related trauma group and 23.2% for the no trauma group. Figure 12 provides a graphical representation of the prevalence of broad disorder categories across these three trauma groupings. As illustrated, individuals who experienced a conflict-related event were more likely to have any anxiety, mood, substance and impulse-control disorder at some point in their life.

Table 4a: Prevalence of lifetime mental health disorders among individuals who experienced conflict-related trauma

Disorder	Prevalence among individuals who experienced a conflict-related trauma %	Prevalence among those who experienced a non-conflict trauma only %	Prevalence among those who did not experience any trauma event %
Agoraphobia	2.5	2.2	0.8
Adult separation anxiety*	5.6	5.0	0.5
GAD*	8.6	6.7	2.8
OCD	0.5	1.0	0.3
Panic disorder*	3.9	4.0	1.4
PTSD*	16.1	11.5	-
Separation anxiety disorder*	3.9	2.7	0.6
Social phobia*	7.5	4.9	3.1
Specific phobia*	12.2	13.3	4.4
Any anxiety disorder*	**34.2**	**28.3**	**8.9**
Bipolar disorder*	3.7	2.9	1.1
Dysthymia	3.0	2.8	2.1
Major depressive disorder*	23.8	19.3	10.8
Any mood disorder*	**27.8**	**22.0**	**11.9**
Alcohol abuse*	19.5	11.2	7.2
Alcohol dependence*	3.9	2.7	1.1
Drug abuse*	16.1	3.5	0.9
Drug dependence*	1.1	0.7	0.2
Any substance disorder*	**21.9**	**12.3**	**7.4**
Attention deficit disorder*	3.9	1.3	1.4
Conduct disorder*	4.0	1.7	0.3
IED*	5.7	4.2	1.8
ODD*	5.3	3.0	0.6
Any impulse-control disorder*	**14.2**	**8.0**	**3.4**
Any lifetime disorder*	**53.0**	**43.2**	**23.2**

Abbreviations: GAD, generalized anxiety disorder; OCD, obsessive compulsive disorder; PTSD, post traumatic stress disorder; IED, intermittent explosive disorder, ODD, oppositional defiant disorder.

* indicates significant differences between sub-groups at the 5% level of significance with respect to the prevalence of a given mental health disorder.

- Indicates insufficient cell number (n<30) to produce estimates.

Figure 12: Lifetime prevalence of disorder categories by trauma grouping

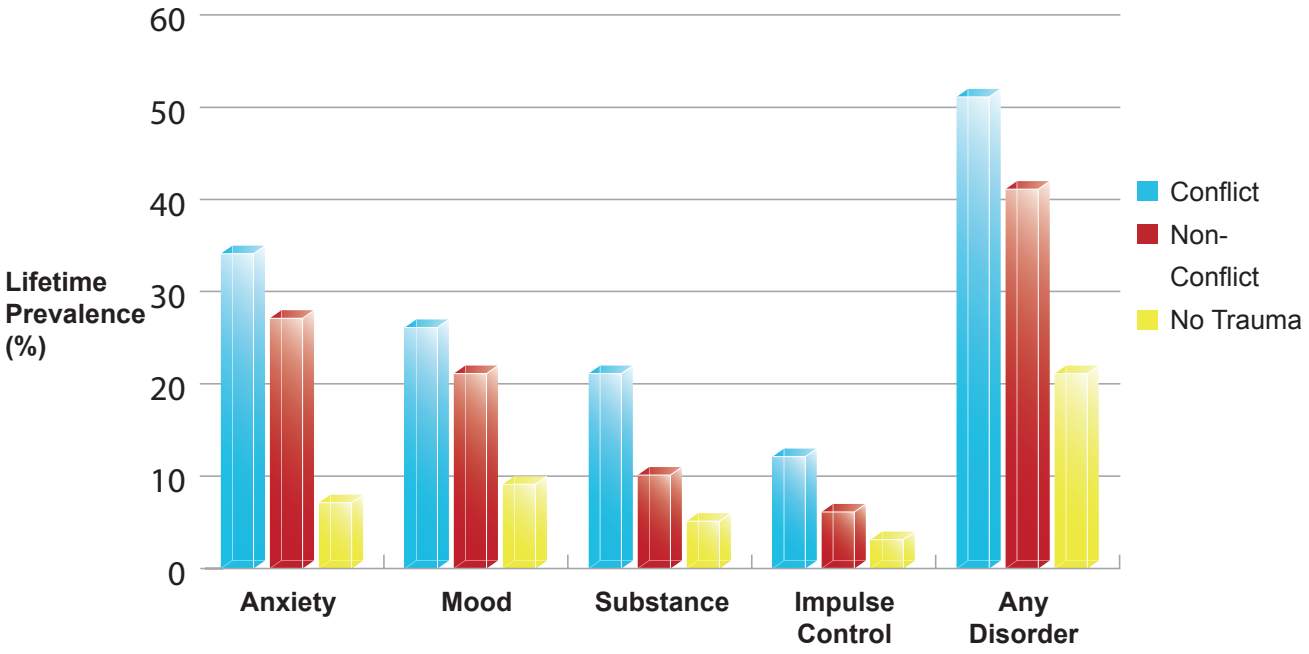


Table 4b replicates the analysis presented in Table 4a but focuses on the prevalence of disorders in the 12 months previous to the NISHS interview among (1) *those who experienced a conflict-related trauma, (2) those who experienced a non-conflict related trauma only and (3) those who did not experience any traumatic event.*[12] For example, 21.3% of those who experienced a conflict-related traumatic event had an anxiety disorder in the 12 months previous to the interview compared to 18.7% of those who had a non conflict-related experience and 6.1% of those who did not experience a traumatic event. The 12-month prevalence of all disorder groups considered was higher among those who experienced conflict compared to the other two groupings considered. Overall an estimated 32% of participants (which would equate to 168,000 individuals in the population) of those who experienced a conflict-related event had a mental health disorder in the 12 months prior to their NISHS interview. These 12-month figures provide the best indication of current mental health needs among those who experienced conflict-related traumatic events and therefore are most useful for the planning and provision of services.

[12] The 12-month prevalence of broad disorder categories are considered rather than individual disorders given smaller raw numbers involved in 12-month analysis.

Table 4b: Prevalence of 12-month mental health disorders among individuals who experienced conflict-related trauma

Disorder	Prevalence among individuals who experienced a conflict-related trauma %	Prevalence among those who experienced a non-conflict trauma only %	Prevalence among those who did not experience any trauma event %
Any anxiety disorder*	21.3	18.7	6.1
Any mood disorder*	13.9	12.9	6.2
Any substance disorder	4.9	2.9	2.4
Any impulse-control disorder*	6.1	4.1	0.7
Any 12-month disorder*	**32.0**	**26.4**	**12.3**

* indicates significant differences between sub-groups at the 5% level of significance with respect to the prevalence of a given mental health disorder category.

Onset of lifetime disorders in relation to experience of conflict-related trauma

Table 4a and Figure 12 give an indication of *associations* between experience of conflict and *lifetime* mental health disorders but do not consider the timing of disorder onset in relation to conflict-related traumatic experiences. The research team examined the onset of each of these disorders in relation to *an individual's first experience of conflict-related trauma*. Table 5 shows the percentage breakdown of disorder cases with onset before and after or in the same year as an individual's first experience of trauma. For example, among all individuals who experienced conflict and had major depressive disorder (MDD) at some point in their life, almost 80% of these individuals first met the criteria for MDD in the same year or *after* their first experience of conflict-related trauma. The table reveals that a high percentage of many disorders first occurred after an individual's first experienced of conflict-related trauma. These figures should however be interpreted with caution. Results in Section 1 of this report revealed how a high proportion of individuals who experience conflict related trauma first experienced an event of this type at a very young age. We may expect that a certain percentage of these individuals may have developed mental health disorders independent of their experience of trauma. Findings in relation to the onset of disorders may therefore in part reflect the usual age of onset of these disorders.

Table 5: Breakdown of disorders described above by onset (before or after first conflict-related event)

Disorder	% of disorders cases with initial onset before 'conflict-related' trauma	% of disorder cases which happened in same year or after 'conflict-related' trauma
Anxiety disorders		
Agoraphobia	-	-
Adult separation anxiety	29.2	70.8
GAD	24.5	75.5
OCD	44.0	56.0
Panic disorder	36.2	63.8
PTSD	20.6	79.4
Separation anxiety disorder	61.2	38.8
Social phobia	58.4	41.6
Specific phobia	57.1	42.9
Mood disorders		
Bipolar disorder	-	-
Dysthymia	11.8	88.2
MDD	20.4	79.6
Substance disorders		
Alcohol abuse	19.3	80.7
Alcohol dependence	18.4	81.6
Drug abuse	9.4	90.6
Drug dependence	7.8	92.2
Impulse-control disorders		
Attention deficit disorder	56.3	40.7
Conduct disorder	43.3	56.7
ODD	59.3	43.7
IED	34.9	65.1

Abbreviations: GAD, generalized anxiety disorder; OCD, obsessive compulsive disorder; PTSD, post traumatic stress disorder; IED, intermittent explosive disorder, ODD, oppositional defiant disorder.

- Indicates insufficient cell number (n<30) to produce estimates.

Prevalence of 'post-conflict' disorders

Based on examination of age-at-onset information, the research team were able to define *'post-conflict'* disorders i.e. those that first occurred in the same year or following a traumatic experience associated with the conflict. Specifically, for each individual who experienced trauma, the team identified whether each relevant mental health disorder occurred in the same year or after their first experience of conflict-related trauma. Table 6 considers the prevalence of 'post-conflict' disorders among this subgroup i.e. only disorders that occurred after an individual's experience of conflict are considered. For example 21.3% of individuals who experienced conflict went on to develop major depressive disorder. Overall, almost 44% of individuals who experienced conflict related trauma went on to develop some type of mental health disorder following

their experience. Again, it is noted that there is no way of determining from the dataset whether these disorders were causally linked to an individual's experience of conflict.

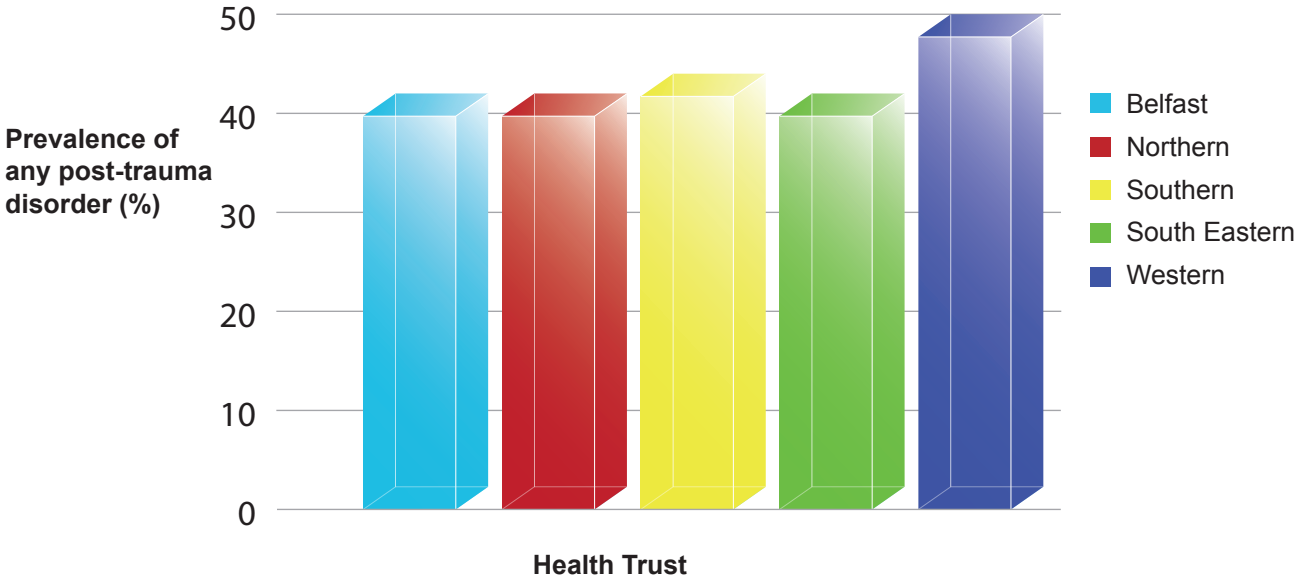
Table 6: Prevalence of 'post-conflict' disorders among those who experienced any conflict-related traumatic event

Disorder	Prevalence of post-conflict disorders among individuals who experienced any conflict-related trauma %
Agoraphobia	1.4
Adult separation anxiety	4.0
Generalised anxiety disorder	6.7
Obsessive compulsive disorder	0.3
Panic disorder	2.5
Post-traumatic stress disorder	12.9
Separation anxiety disorder	1.5
Social phobia	3.3
Specific phobia	5.4
Any anxiety disorder	**24.5**
Bipolar disorder	2.4
Dysthymia	2.8
Major depressive disorder	21.3
Any mood disorder	**22.1**
Alcohol abuse	16.0
Alcohol dependence	3.2
Drug abuse	5.1
Drug dependence	1.0
Any substance disorder	**18.7**
Attention deficit disorder	1.7
Conduct disorder	2.3
Intermittent explosive disorder	3.7
Oppositional defiant disorder	2.2
Any impulse disorder	**7.8**
Any post-conflict disorder	**43.8**

Prevalence of 'post-conflict' disorders by Health & Social Care Trust

Figure 13 provides an insight into the geographical spread of disorders that onset following a traumatic event associated with the conflict, showing the prevalence of these disorders *among those who experienced a 'conflict-related' event* by Health and Social Care Trust. For example 42.4% of individuals currently living within the Belfast Trust who experienced a 'conflict-related' trauma had a 'post-conflict' disorder while 49.3% of all those living in the Western Trust who experienced conflict had a 'post-conflict' disorder.

Figure 13: Prevalence of any 'post-conflict' disorder, among those who experienced any conflict-related traumatic event, by current Health & Social Care Trust



Socio-demographic characteristics associated with lifetime disorders

In this sub-Section the association of socio-demographic characteristics with having any lifetime disorder is examined. A summary of the key findings and implications of these results for service provision is also provided at the end of this sub-Section.

Table 7 summarises the results of a logistic regression analysis examining the association of socio-demographic characteristics with the risk of having any lifetime disorder. An additional series of logistic regression analyses have been carried out which examine these characteristics in relation to lifetime anxiety, mood, substance and impulse-control disorders. These more detailed results can be found in Appendix A.

For each demographic characteristic, a base category is assigned an odds ratio of 1.0. Logistic regression analysis assigns an odds ratio to the other categories for each characteristic, which shows the risk of having any lifetime disorder compared to the assigned base category. The table also shows p-values for each category. A p-value (probability) of less than 0.05 indicates a statistically significant difference in odds of having a lifetime disorder compared to the base category.

Table 7: Logistic regression analysis of socio-demographic correlates associated with any lifetime disorder

	Outcome: any lifetime disorder	
	Odds Ratio	**P-value**
Gender (base: male)		
Female	0.95	0.66
Income level (base: low)		
Low-medium	0.99	0.93
Medium-high	1.00	0.99
High	0.78	0.20
Age-group (base: 18-34)		
35-49	1.05	0.77
50-64	0.85	0.35
65+	0.28*	0.00
Marital status (base: married)		
Separated/divorced/widowed	2.31*	0.00
Never married	1.25	0.18
Educational attainment (base: primary)		
GCSE/O-level	0.66	0.11
A Level	0.65	0.13
Higher	0.91	0.75

* Indicates that the odds of having any lifetime disorder are significantly different to the base category at the 5% level of significance

Results presented in the table can be summarised as follows:

- There were no gender differences with respect to the prevalence of any lifetime disorder. This overall result however masks significant gender differences with respect to different disorder types (see Appendix A).
- Individuals who were separated/divorced/widowed (at the time of the NISHS interview) were significantly more likely than those who were married to have a lifetime disorder.
- Those aged 65+ were significantly less likely to have a lifetime disorder compared to those aged 18-34.

Discussion

Table 4 and Figure 12 compare the prevalence of mental health disorder across the three groups:

1. Conflict-related trauma: Those who experienced one or more conflict-related traumatic events during their lifetime. This group includes those who may have also experienced one or more non conflict-related traumatic events.

2. Non conflict-related trauma: Those who experienced one or more traumatic events not associated with the conflict. This group did not report any traumatic events classified as conflict-related.

3. No Trauma: Those who did not report any traumatic experiences – conflict or non-conflict related.

Findings in this section suggest that lifetime and 12-month mental health disorders are more prevalent among individuals who have experienced any traumatic event (conflict-related or non conflict-related). The additional impact of conflict-related traumatic experiences is highlighted by the fact that individuals in this category were more likely to have any mood, anxiety, substance and impulse control disorder compared to the other trauma groupings. Furthermore, the prevalence of many other individual/specific disorders such as GAD, PTSD, MDD and alcohol/drug abuse was higher among individuals who experienced a conflict-related event. Overall more than 2 out of every 5 who experienced a conflict related traumatic experience subsequently acquired one or more of the mental health disorders assessed in the NISHS.

Technically, there is a need for some caution in interpreting these findings. For example they may in part reflect the fact that people in certain demographic categories are more at risk of having mental health problems, regardless of whether they have a traumatic experience. So for example, as the COTT Study showed, areas of high levels of violence were associated with higher levels of deprivation. The question is, are the poor mental health outcomes the consequence of the violence or the deprivation? This was discussed earlier with reference to Breslau (2002), who had summarised the possible relationship amongst trauma exposure, acquiring PTSD and other contributory or risk factors. To restate:

- There is the possibility that pre-existing psychological disorders may increase the risk of exposure to traumatic events that may result in PTSD;
- PTSD may be a contributory risk factor for other psychiatric disorders;
- There is the possibility that there is a non-causal relationship between PTSD and other disorders, or
- Traumatic events themselves cause various disorders other than PTSD.

Yet from a service point of view the question is somewhat academic. What can be concluded is that individuals who have been exposed to conflict-related traumatic events are also more likely to have poorer mental health. In this case conflict exposure is a marker for adverse mental health, regardless of causes and effects. More generally, having any type of traumatic experience, conflict or non-conflict related, is associated with poorer mental health, although the conflict related category is more strongly associated for most types of disorder.

Table 5 takes a closer look at the relationship between the first conflict-related traumatic experience and poor mental health. This analysis compares the percentage of all disorder cases which first occurred before an individual's first experience of conflict-related trauma and those which first occurred in the same year or after this experience. The analysis addresses in part the question as to whether traumatic experiences or other demographic factors, for example, are the key to understanding need. These figures should however be interpreted with caution. Results in Section 1 of this report revealed how a high proportion of individuals who experienced conflict related trauma first experienced an event of this type at a very young age. We may expect that a certain percentage of these individuals may have developed mental health disorders independent of their experience of trauma. Findings in relation to the onset of disorders may therefore in part reflect the usual age of onset of these disorders. Whilst in this analysis it cannot be precisely determined that the traumatic experience caused the subsequent development of a mental health disorder the figures demonstrate an association between the two, particularly in relation to most of the anxiety disorders and all the mood and substance disorders. Whether the traumatic experiences have been causal or not, we can at least conclude that having a conflict-related experience is associated with the subsequent acquisition of most of the mental health disorders assessed in the NISHS.

Results included in this sub-Section also show the percentage of those who experienced a conflict-related event who went on to develop any disorder after their experience (i.e. the prevalence of 'post-conflict' disorders). In summary, the findings suggest that one in four people who have had a conflict-related experience acquired an anxiety disorder in the same year or subsequently; 22.1% acquired mood disorders; 18.7% substance disorders and 7.8% impulse disorders. These are striking figures and taken together with the prevalence of exposure to traumatic events associated with conflict, reported and discussed above in Section 1, have very profound implications for the Northern Ireland community, its politicians and policy makers, health providers, and victims and survivor's service commissioners and providers. It has also implications for workforce development and skills training.

Results from logistic regression analysis in Table 7 suggest that certain socio-demographic groups are at higher risk of having had a lifetime disorder. Results show that there were no significant gender differences in the prevalence of any lifetime disorder. However, examination of a more detailed series of regression analyses (see Appendix A) shows that females were more likely to have had a lifetime mood or anxiety disorder while males were more likely to have had a substance or impulse-control disorder. Those who were aged 65+ were less likely to have any lifetime disorder which may confirm that which has been

observed elsewhere, that the conflict was ‘a young man’s conflict’. Individuals who were separated/divorced/widowed at the time of the NISHS interview were more than twice as likely to have had a lifetime disorder.

Recommendations

The findings of this Section provide a more in depth perspective on the level of mental illness associated with conflict-related traumatic experiences.

It is recommended that policy makers, planners, commissioners and service providers incorporate into their assessments of need and commissioning and service plans the findings and key implications of the association between mental illness and conflict related traumatic experiences.

Assessments of need at population, group and neighbourhood levels and service plans should specifically take account of particular socio-demographic risk factors associated with mental health disorders. These assessments should take particular but not exclusive account of the risk of anxiety and mood disorders among women and substance and impulse-control disorders among men, those in younger age-groups and those who were previously married (separated, divorced or widowed).

Section 4

The association of conflict-related trauma and 'post-conflict' disorders with chronic physical health conditions

Previous trauma research has shown significant associations between the experience of traumatic events, PTSD and chronic physical health conditions (Ferry et al. 2008; Schnurr, 2000). Table 8 compares the prevalence of a range of these conditions among those who (1) have experienced a conflict-related event, (2) those who experienced a non conflict-related event only and (3) those who have not experienced a traumatic event. Findings in relation to any chronic condition among these three trauma groupings are also summarised in Figure 14. For example 19.8% of individuals who have had a conflict-related experience have had arthritis or rheumatism at some point in their life compared to 24.1% who experienced a non conflict-related event and 13.9% of those who did not experience any traumatic event. Individuals who experienced a traumatic event (conflict or non conflict-related) were generally more likely than those who did not experience any type of traumatic event to have a specific chronic physical health condition. There are however no consistent patterns with respect to traumatic event type and the prevalence of these health conditions.

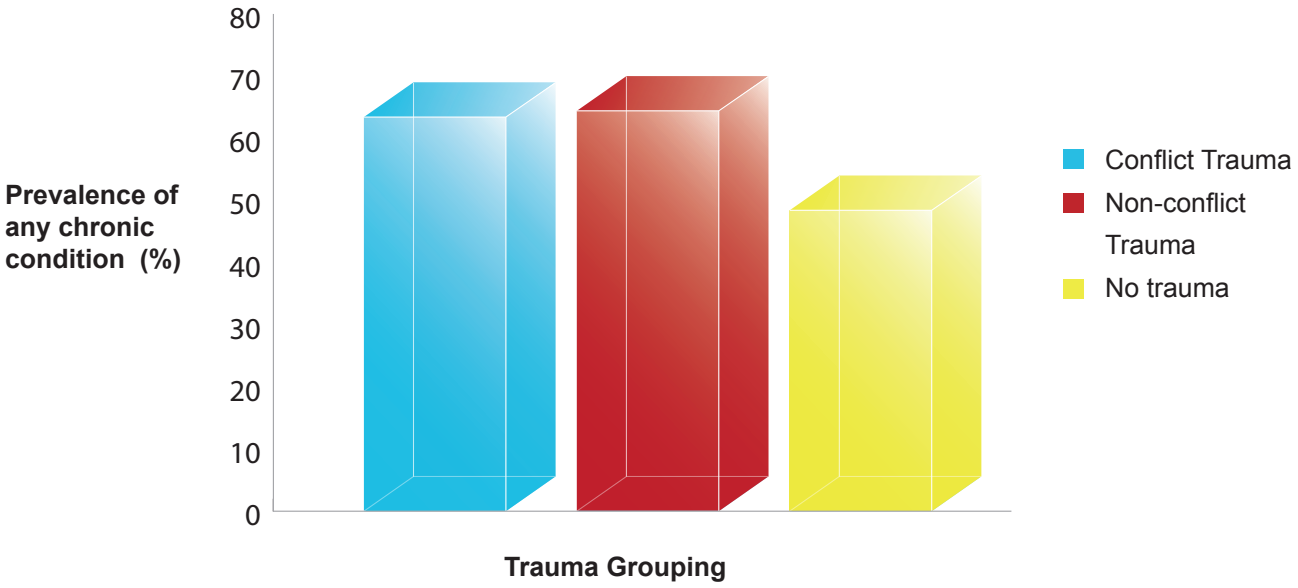
Table 8: Prevalence of chronic physical health conditions among those who experienced a conflict-related event

Disorder	Prevalence among those who experienced a conflict-related event (%)	Prevalence among those who experienced a non-conflict related event only (%)	Prevalence among those who did not experience any traumatic event (%)
Arthritis or rheumatism*	19.8	24.1	13.9
Back or neck pain*	28.4	31.6	14.8
Persistent headaches*	20.1	14.8	23.3
Other chronic pain*	10.2	4.1	8.8
Allergies	18.4	15.8	15.2
Stroke	1.8	1.5	0.7
Heart attack	2.5	4.5	1.9
Heart disease	4.7	5.6	2.5
High blood pressure	18.7	24.8	15.8
Asthma*	12.1	8.3	6.9
Tuberculosis	-	-	-
Any other chronic lung condition	-	-	-
Diabetes or high blood sugar	4.0	3.3	4.0
Ulcer of the stomach or small intestine*	7.7	6.6	2.6
Epilepsy	-	-	-
Cancer	-	-	-
Any chronic condition*	**68.9**	**69.5**	**53.9**

*indicates statistically significant differences at the 5% level of significance between trauma groupings with respect to disorder prevalence

- Indicates insufficient cell number (n<30) to produce estimates

Figure 14: Lifetime prevalence of any lifetime chronic condition by trauma grouping



Discussion

Results in this Section of the report investigated the association of having experienced a traumatic event with lifetime chronic physical health conditions. Results in the current report therefore extend the analysis reported in Trauma, Health and Conflict in Northern Ireland (Ferry et al. 2008), which focused on the association between PTSD and having one or more chronic physical health conditions.

Results assessed whether having a traumatic experience was associated with adverse physical health, specifically having one or more chronic physical health conditions. A comparison of the conflict-related and non conflict-related groups shows little difference with respect to the prevalence of a range of chronic conditions, yet the prevalence of these conditions among both these groups is notably higher than the group that had not experienced any traumatic event. We can conclude that having one or more traumatic experience(s) is associated with having one or more chronic physical health conditions, compared with never having had a traumatic experience.

These findings, and those of the 2008 Report, point to the additional health needs of people who have had traumatic experiences. If we are to make holistic assessments of need, then mental health and physical health should each be part of a comprehensive assessment. People with chronic physical health conditions who will be using medical and other such services, may have had traumatic experiences. Conversely, people using mental health services might also have chronic physical health problems. There is a clear case for a holistic approach to assessments and treatments, and conceivably the provision of effective mental health treatments for trauma related disorders might be clinically recommended to bring about improvements in an individual's physical health.

While the analysis in this section has focused only on associations between the experience of trauma and chronic physical health conditions, there is research and clinical evidence to suggest a link between the experience of trauma, PTSD and having a chronic physical health condition which also in part explain some of the possible intermediary mechanisms involved. The physiological sequelae or consequences of chronic stress response ('fight or flight' syndrome) which characterises many trauma-related disorders has a significant long term effect on bodily function, particularly in relation to the cardiovascular and immune systems (Sarafino, 1998). Work by Chris Brewin, Paula Schnurr (1999) and the Amsterdam Medical Centre point to bio-chemical or hormonal factors associated with traumatic reactions, having a 'wear and tear' effect on physical health. Also, some people with PTSD or other trauma related disorders develop lifestyles as a result of their anxieties or fears, which act against their physical health. Clinical evidence for such patterns has been observed in the treatment programme delivered by the Northern Ireland Centre for Trauma & Transformation.

Setting aside the issue of cause and effect, it is clear from these findings that the association between having a traumatic experience and having a chronic physical health condition should be factor in assessment of need and treatment programmes.

Recommendations

Policy makers, service commissioners and providers should be aware of the association between experiencing a traumatic event and having one or more chronic physical health conditions.

Steps should be taken at service commissioning and service delivery levels to ensure that the mental and physical health needs of people who have had traumatic experiences are properly assessed, that referral processes are in place and that evidence-based therapeutic services for mental health needs are available.

Health and social care service providers in the statutory and non-statutory sector should, as part of their assessments of need, be mindful of the demonstrable association between experiencing a traumatic event and higher risks of having a chronic physical health condition. Service providers should take account of both physical and mental health needs in their referrals and treatment provision for people who have experienced trauma.

Section 5

Service Use

This Section examines a number of areas relevant to need, help-seeking and availability and use of services. NISHS participants were asked about their use of services both at the end of each diagnostic section and also in a more comprehensive 'services' section of the interview. The questions at the end of each diagnostic section relate specifically to that particular disorder while the questions in the 'services' section ask about service use in relation to problems with 'emotions, nerves or mental health'. Results on service use are therefore presented in two sections. The first summarises data from each of the diagnostic sections and the second summarises information from the more general 'services' section.

Service results from specific diagnostic sections

At the end of each diagnostic section, participants were asked had they ever talked to a medical doctor or other health professional about symptoms relating to that particular disorder. If an individual answered 'yes', they were subsequently asked if they ever received treatment that was helpful or effective.

Table 9 shows the level of service contact among individuals who experienced conflict and had the relevant disorder *at any point in their life*. The level of service contact was highest among those with major depressive disorder (MDD) and lowest among those with separation anxiety disorder/adult separation anxiety (SAD/ASA). Almost 70% of individuals with MDD who made service contact received treatment that they considered to be helpful or effective. The corresponding figures for SAD/ASA and substance use were much lower (40.3% and 44.1% respectively). Interpreting these figures another way indicates the level of unmet need among those who have experienced conflict and have a lifetime mental health disorder. For example 59.6% (100-41.4) of those who experienced conflict and had lifetime PTSD have never received helpful or effective services for their PTSD symptoms.

Table 9: Level of service contact and perceived effectiveness of treatment among those who experienced conflict and had any lifetime disorder

Disorder	% Service contact among those who experienced conflict and any lifetime disorder	% of those who made contact, who received treatment that was 'helpful or effective'	% who received help that was effective
Agoraphobia	-	-	-
GAD	59.4	61.5	36.5
OCD	-	-	-
Panic attacks/disorder	63.1	62.7	39.6
PTSD	66.5	62.3	41.4
SAD/ASA	14.6	40.3	5.9
Social phobia	41.4	58.8	24.3
Specific phobia	18.8	56.5	10.6
Bipolar disorder	39.0	-	-
Major depressive disorder	79.1	68.9	54.5
Alcohol/drug abuse	25.4	44.1	11.2
Attention deficit disorder	-	-	-
Conduct disorder	-	-	-
IED	30.0	-	-
ODD	29.8	-	-

Abbreviations: GAD, generalized anxiety disorder; OCD, obsessive compulsive disorder; PTSD, post traumatic stress disorder; SAD, separation anxiety disorder; ASA, adult separation anxiety; IED, intermittent explosive disorder, ODD, oppositional defiant disorder.

- Indicates insufficient cell number (n<30) to produce estimates

Table 10 shows the level of service contact among individuals who experienced conflict and had the relevant disorder '*post-conflict*'. Again the highest level of service contact was among those with 'post-conflict' MDD and lowest among those with specific phobia. Perceived effectiveness was similar among those with GAD, panic, PTSD and MDD but much lower for substance use. Once again these figures highlight significant levels of unmet need with over 90% (100-9.9) of those with 'post-conflict' alcohol/drug abuse not having ever received treatment that was helpful or effective.

Table 10: Level of service contact and perceived effectiveness among those who experienced conflict and had a 'post-conflict' disorder

Disorder	% Service contact among those who had a 'post-conflict' disorder	% of those who made contact, who received treatment that was 'helpful of effective'	% who received help that was effective
Agoraphobia	-	-	-
GAD	61.2	62.4	38.2
OCD	-	-	-
Panic disorder	64.6	66.9	-
PTSD	65.1	68.6	44.7
SAD/ASA	12.2	-	-
Social phobia	48.1	-	-
Specific phobia	11.3	-	-
Bipolar disorder	42.0	-	-
Dysthymia	-	-	-
Major depressive disorder	79.7	67.5	53.8
Alcohol/drug abuse	23.8	41.8	9.9
Attention deficit disorder	-	-	-
Conduct disorder	-	-	-
ODD	-	-	-
IED	30.7	-	-

Abbreviations: GAD, generalized anxiety disorder; OCD, obsessive compulsive disorder; PTSD, post traumatic stress disorder; SAD, separation anxiety disorder; ASA, adult separation anxiety; IED, intermittent explosive disorder, ODD, oppositional defiant disorder.

- Indicates insufficient cell number (n<30) to produce estimates

Delays in help-seeking

As previously noted, at the end of each diagnostic section, individuals who endorsed disorder specific symptoms were asked if they had ever talked to a medical doctor or other health professional about symptoms relating to that particular disorder. Individuals who said that they had were then asked when they first talked to this health professional.

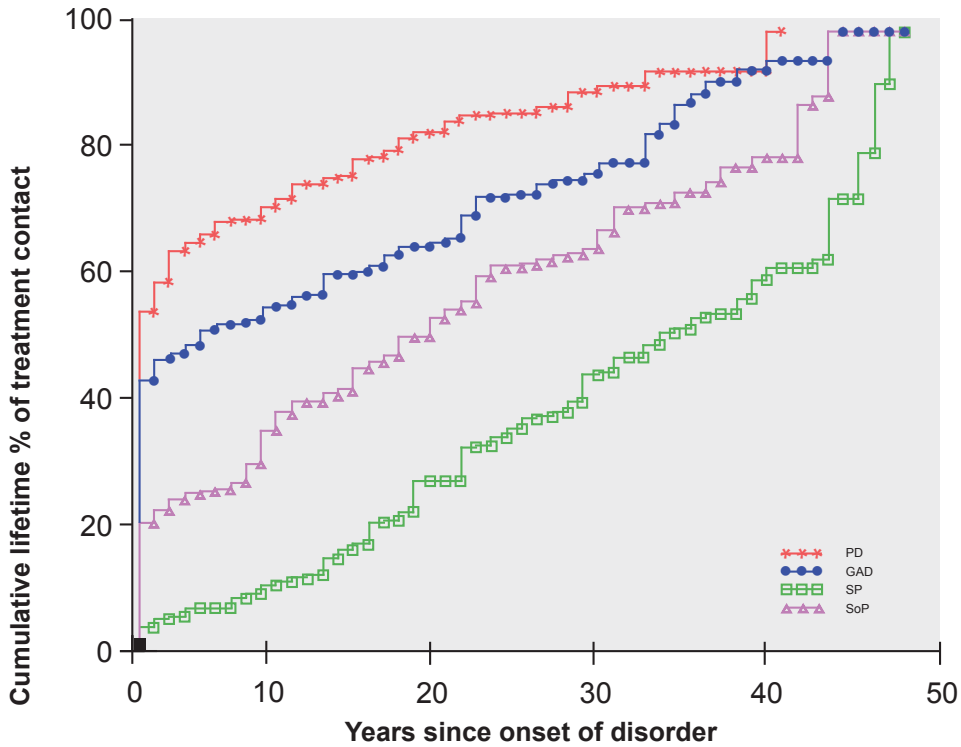
Survival analysis (see methods section for more detail) was used to predict the percentage of individuals with a DSM-IV lifetime disorder who eventually seek treatment. Projections for selected anxiety, mood and substance disorders are illustrated using a series of survival curves in Figures 15-18 respectively. These figures show the years since onset of the disorder along the horizontal (x) axis, while the cumulative lifetime percentage of treatment contact is shown on the vertical (y) axis. Projections for anxiety disorders (Figure 15) reveal a varied pattern. For example, while a substantial proportion of individuals with panic disorder seek treatment within 10 years of onset (approximately 70%), a comparatively lower percentage of those with specific phobia seek treatment in the same period (approximately 10%). Projections suggest that for each anxiety disorder, the majority of individuals take a considerable time before seeking treatment; in many cases 30 to 40 years.

In contrast, the projected percentages of treatment seeking among those with specific mood disorders were relatively similar (Figure 16). At least 50% of those with major depressive episode, dysthymia or bipolar disorder sought treatment in the first two years following initial onset. The projected cumulative probabilities then follow a fairly steep trajectory, i.e. people with such disorders tend to seek help quite quickly.

Treatment projections for substance disorders reveal a more varied pattern (Figure 17). While the majority of individuals with drug dependence seek help within the first two to three years following initial onset (approximately 84%), a much smaller percentage of those with alcohol abuse seek treatment in the same time period (approximately 12%).

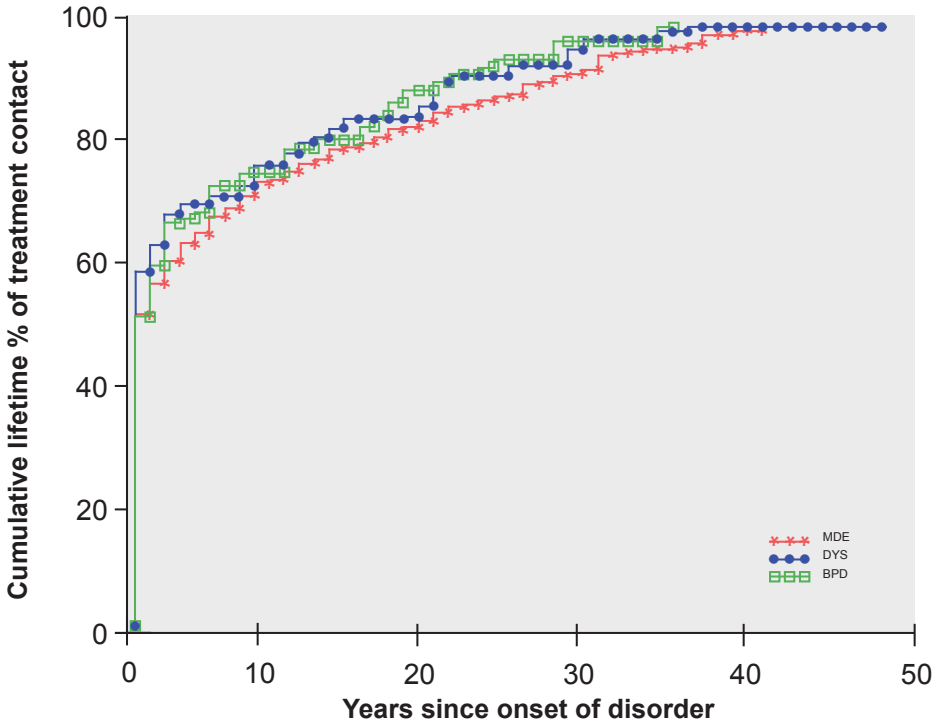
The overall lifetime treatment projections for any anxiety (post traumatic stress disorder being one) any mood and any substance use disorder are also shown in Figure 18. Tracing the duration since onset of the disorder type from the 50th percentile provides an indication of the median duration of delay in seeking help (and therefore delay in the earliest point at which treatment might commence) for individuals with these disorders. While the median duration of delay for mood disorders is around 1-2 years from initial onset, individuals with substance and anxiety disorders (which include PTSD) wait an average of 15 and 22 years respectively before seeking treatment. These figures once again highlight substantial levels of unmet need.

Figure 15: Cumulative lifetime percentage of treatment contact for anxiety disorders from year of onset



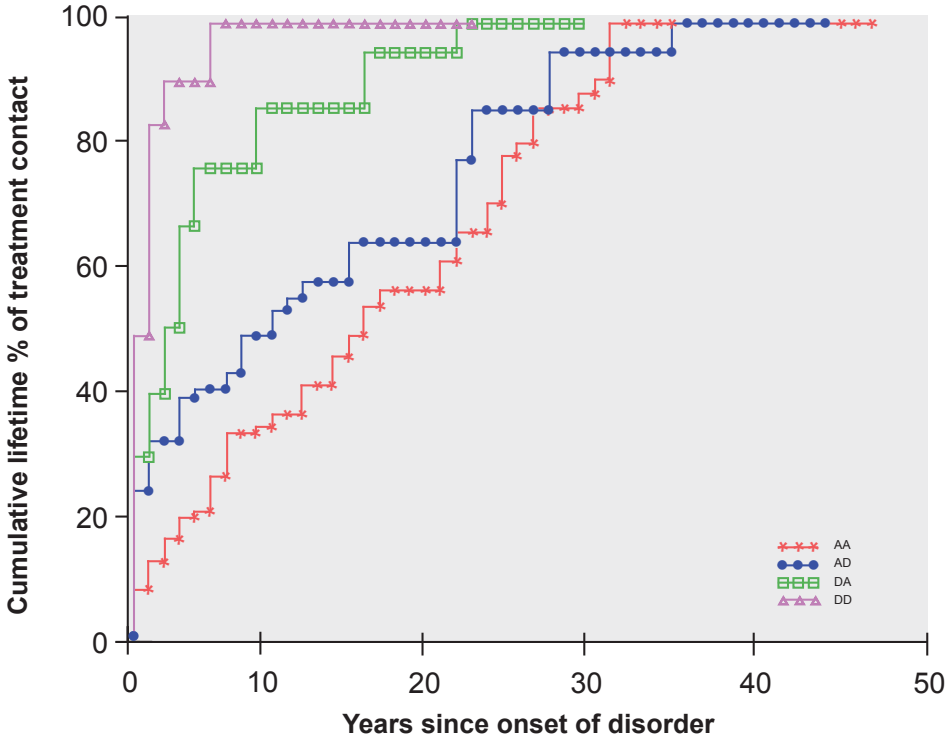
Abbreviations: PD, panic disorder, GAD, generalised anxiety disorder, SP, specific phobia, SoP, social phobia.

Figure 16: Cumulative lifetime percentage of treatment contact for mood disorders from year of onset.



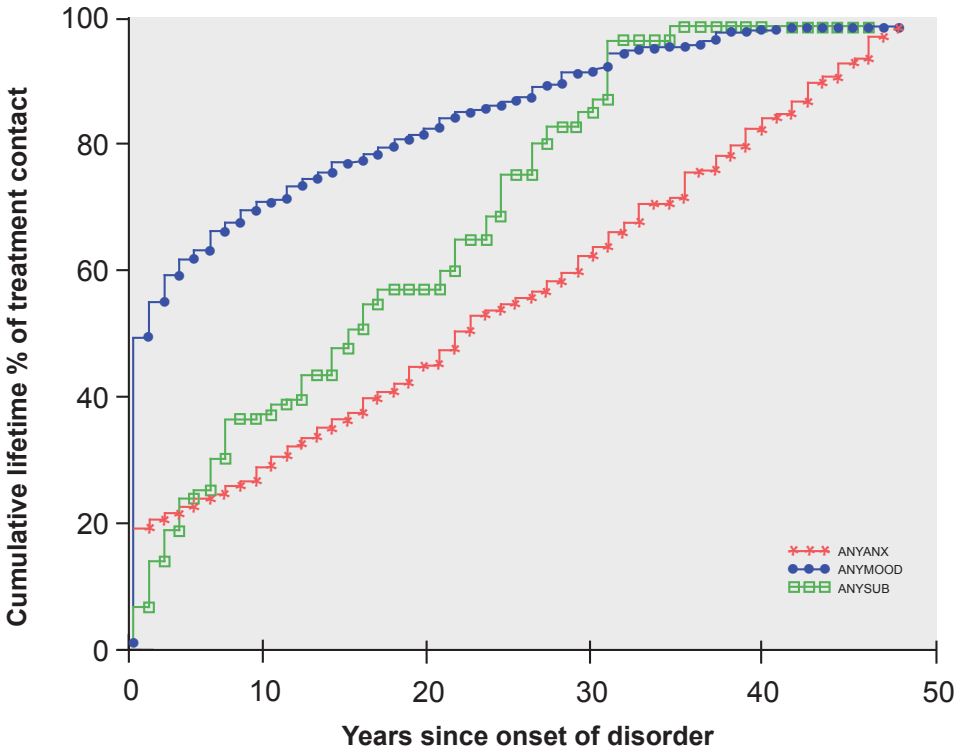
Abbreviations: MDE, major depressive episode; DYS, dysthymia; BPD, bipolar disorder.

Figure 17: Cumulative lifetime percentage of treatment contact for substance disorders from year of onset.



Abbreviations: AA, alcohol abuse; AD, alcohol dependence; DA, drug abuse; DD, drug dependence.

Figure 18: Cumulative lifetime percentage of treatment contact for any disorder group from year of onset



Service results from 'services' section of the NISHS

The service use results presented above are taken from each specific diagnostic section. The data in Table 11 were derived from the more general 'service use' section which asks about types of professional visited for 'problems with emotions/nerves or mental health' and does not relate specifically to disorder types or groupings.

Lifetime visits to various treatment providers

The table below shows the level of service use in different sectors among individuals with different categories of 'post-conflict' mental health disorder. For individuals with each of the disorder categories, the general medical sector was visited by the highest percentage followed by a psychiatrist, other mental health professional, CAM and human services. Results once again show that the prevalence of visits to any service provider was highest among those with any mood disorder (83.3%)

Table 11: Percentage of individuals with a 'post-conflict' disorder who visited treatment provider at any point in their life

Post-conflict disorder type	Psychiatrist	Other mental health	General medical	Human services	CAM	Any services
Mood	35.3	27.3	75.2	6.1	14.9	83.3
Anxiety	34.0	24.5	67.4	7.0	11.8	73.8
Substance	31.9	22.4	57.3	4.6	13.9	65.0
Impulse-control	28.9	21.1	54.3	6.6	11.9	64.0
Any disorder	27.4	19.2	58.1	4.7	11.8	65.5

Abbreviations: CAM, complementary and alternative medicine

Socio-demographic characteristics associated with visits to different service providers

Table 12 shows the results of a logistic regression analysis, examining the association of socio-demographic characteristics with lifetime visits to any service provider (among those with a 'post-conflict' disorder). Regression analyses have also been carried out for five different service providers: psychiatrist, other mental health professional, general medical professional, human services and complementary and alternative medicine (these more detailed results are provided in Appendix B).

Results presented in the table below can be summarised as follows:

- Females were more than twice as likely as males to have visited any service provider.
- Those who were previously married were also almost two and a half times as likely as those who were married to have visited any service provider.

Table 12: Logistic regression analysis examining socio-demographic correlates of service use among individuals who had any 'post-conflict' disorder

	Visited any service provider during their lifetime	
	Odds Ratio	**P-value**
Gender (base: male)		
Female	2.30*	0.00
Income (base: low)		
Low-medium	1.15	0.76
Medium-high	0.83	0.66
High	0.78	0.60
Age group (base: 18-34)		
35-49	1.00	1.00
50-64	1.53	0.34
65+	0.48	0.21
Marital status (base: married)		
Separated/divorced/widowed	2.31*	0.04
Never married	0.80	0.52
Highest educational attainment (base: primary)		
GCSE/O-level	0.73	0.65
A level	0.68	0.58
Higher	1.42	0.65

* Indicates that odds of having visited any service provider are significantly different to the base category at the 5% level of significance

Medication

In the 'pharmaco-epidemiology' section of the NISHS questionnaire, people were asked about various types of medication they had taken in the last 12 months for problems with their emotions nerves or mental health. Table 13 compares the percentage of medication use among individuals who experienced conflict, compared to those who experienced another type of trauma but not conflict, and those who did not experience any traumatic event. Figure 19 also summarises the findings in relation to the use of any medication across these three trauma groupings.

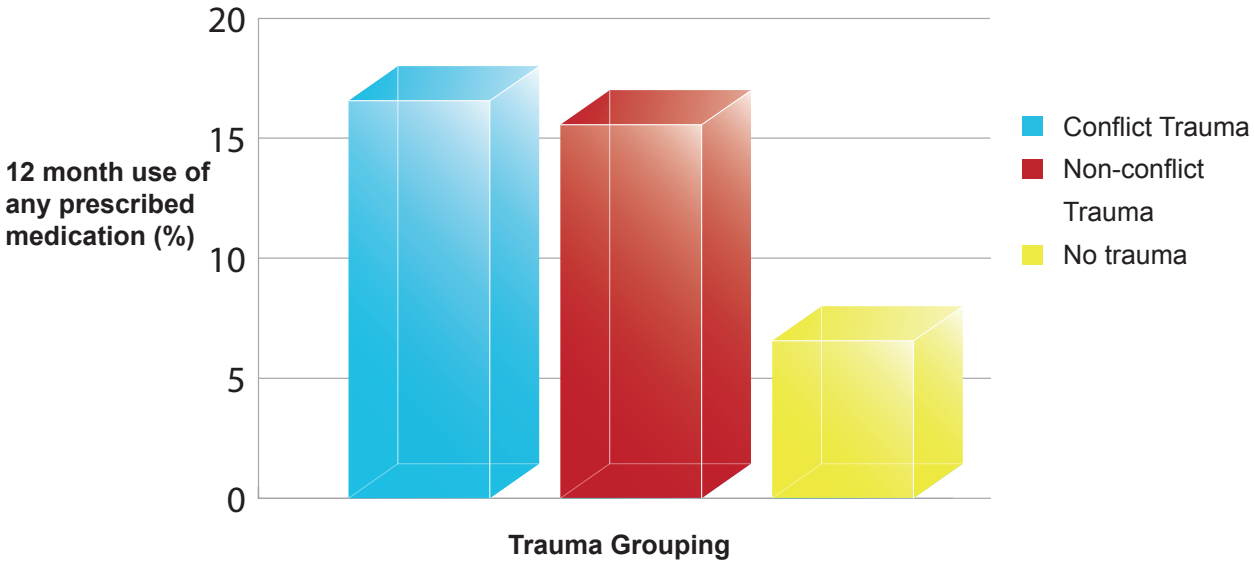
The most prevalent type of medication use among those who experienced conflict was anti-depressants followed by sleeping pills or sedatives. There were significant differences in the use of sleeping pills or sedatives, anti-depressants and tranquillizers with respect to trauma groupings compared to the no-trauma group. These findings suggest that having a traumatic event either conflict or non conflict-related is associated with higher use of these medication types.

Table 13: 12-month medication use among those who experienced conflict and those who did not

Medication type	12-month use among those who experienced a conflict-related event (%)	12-month use among those who experienced a non conflict-related event only (%)	12-month use among those who did not experience a traumatic event (%)
Sleeping pills or sedatives*	8.7	8.3	4.0
Anti-depressants*	11.7	11.6	6.3
Tranquillizers*	5.8	4.7	1.9
Amphetamines or other stimulants	0.4	0.3	0.5
Anti-psychotic medication	0.7	0.8	0.3
Any prescribed medication*	**18.3**	**17.8**	**8.4**
Any other prescribed or non-prescribed medication	1.7	1.8	1.0

*indicates statistically significant differences at the 5% level of significance between trauma groupings with respect to 12-month medication use.

Figure 19: Prevalence of medication use in the previous 12 months by trauma grouping



Discussion

The findings from this Section provide evidence of poor availability of effective services and the need to improve service access and effectiveness. It also provides evidence of substantial delays in treatment seeking for certain types of mental health disorders. In the case of anxiety disorders (which include PTSD) this is an average of 22 years, and the delay is 15 years for people with substance abuse problems. This indicates the need for the continual availability of services and in the case of the needs of those affected by the civil conflict, underlines the need for services to be available for some time to come. The generations most directly affected by their experiences may not reach the point of seeking help for many, many years. As a corollary, services need to be increasingly proactive in reaching out to sufferers and this should include enhancing the skills and knowledge of existing and new practitioners in recognising and responding effectively to trauma related disorders. Given that GPs in Northern Ireland are the 'gatekeepers' for more specialist mental health services and treatment, it is vital that they (or others within primary care services) are aware of the types of events, as well as the mental and physical symptoms commonly associated with trauma-related disorders.

It might be that many affected by the conflict prefer to not seek help, finding that they can manage to their own satisfaction with whatever problems they have, or that the prospect of seeking help is too daunting and they decide not to do so. Experience from trauma

focused clinical services and findings from the qualitative study contained in Trauma, Health & Conflict in Northern Ireland (Ferry et al. 2008), suggests that at least for some of those who seek help late, their lives are profoundly and adversely affected by their experiences before they seek help. The fact that people do not seek help is not a *good case* for doing nothing for the people who have yet to come forward for help or to be identified. Rather, the findings point to the need for improved, proactive and capable services that can find and, importantly, support sufferers of trauma related disorders and ultimately signpost them to, or deliver, effective trauma focussed interventions. The issue of support is additionally important in the context of the conflict whereby issues of distrust and safety loom very large as either feared or real concerns (Ferry et al. 2008).

Also, it should be a matter of considerable concern that the evidence indicates that low proportions of those who seek help get access to services they consider to be helpful or effective. For instance, in the case of depression just over half of those with 'post-conflict' major depressive disorder got help that they considered to be effective or helpful. For PTSD only 44.7% found such services and in the case of alcohol and drugs disorders, only one in ten got effective or helpful services.

There is clear evidence that for those who seek help, GPs are the key point of contact and the implications are that at the very least services could be improved further by building trauma focused support and therapy services around primary care, mindful of the need for a network of specialist and support services beyond GPs.

In this section the figures suggest that men with a 'post-conflict' disorder are significantly less likely to seek help compared to women. Clearly, this warrants particular attention on the part of policy makers, service commissioners and providers.

A study into the health economics of trauma is at an advanced state. This study is being undertaken by a partnership of the University of Ulster (The Bamford Centre for Mental Health and Wellbeing) and the Northern Ireland Centre for Trauma & Transformation, with funding from the Canadian Lupina Foundation. This is expected to report in late 2011 and will assess the direct service and indirect economic costs associated with PTSD. Meanwhile in this report this Section has looked at one aspect of the costs of trauma related disorders, expressed in terms of the percentage of those who have experienced trauma who have been prescribed medication. It is clear from these results that individuals who have experienced a traumatic event (conflict-related or non conflict-related) have much higher levels of medication use than those who have not had a traumatic event. Evidence from other health economic studies, which focus on mental health, suggests that substantial economic savings can be made by increasing the percentage of individuals with mental health disorders who are receiving effective treatment (The London School of Economics, 2006). This in turn would decrease the reliance on pharmacological treatments. Given results presented in the current report which highlights the low percentage of individuals with post-conflict disorders who are receiving effective treatment, it is clear that substantial economic gains can be made by investment in effective treatments.

Recommendations

Given evidence of lengthy delays in help seeking, policy makers, service providers, family and friends, advocates and support groups should encourage individuals with trauma-related mental health disorders to seek help for their emotional problems and raise awareness of available treatments.

Improving GPs' and others (particularly within primary and community care services) levels of awareness of the impact of traumatic experiences, skills in detection and assessment of trauma related disorders and in responding appropriately within their role to trauma needs, should be a particular focal point for service improvement and development. Such actions should be especially aimed at improving the pro-activity of services in addressing trauma related needs and ensure people are referred promptly to appropriate trauma related services.

There is a clear and urgent need for the further development of effective specialist trauma therapeutic services that are routinely and readily accessible to the public and to which primary care and other community services can refer.

Based on evidence of the low percentage of individuals who receive helpful or effective treatment, policy makers, service commissioners and providers must increase the promotion and delivery of evidence-based treatments for trauma-related disorders.

Costs associated with the management of symptoms of post trauma disorders and the management and treatment of co-morbid physical and mental health disorders should reduce where effective trauma focussed services are provided. We therefore recommend that a health economic perspective informs the development of services.

Chapter 6: Concluding Discussion

The current Report clearly demonstrates the elevated levels of psychiatric morbidity in Northern Ireland and the association of these morbidity levels with conflict-related traumatic experiences. As outlined in Chapter 2 of the Report, 23% of the NI adult population met the criteria for a mental health disorder in the previous 12 months. This represents almost 309,000 individuals and rates among the highest figures among comparable estimates from other WMH Survey Initiative studies (Kessler, Aguilar-Gaxiola et al. 2008). It should be noted that this figure does not include those under the age of 18 or individuals living in long term care or institutions, or those with psychosis or related conditions.

As underlined throughout this report, conflict-related traumatic events have been a prominent feature in the lives of the Northern Ireland population and are associated with a range of adverse mental and physical health problems. One of the key findings contained within this report is the notably high levels of PTSD among the NI population, which are higher than any other study from the WMH Survey Initiative. Considering PTSD, the findings point to the extent of the public health burden posed by traumatic events in NI: 68,000 adults (5.1%) met the criteria for PTSD in the 12 months previous to the NISHS interview while 118,000 (8.8%) met the criteria at some point in their life.

Kessler et al (1995) in their assessment of the rate of recovery from PTSD found that approximately one third of adults who develop PTSD will have it long term. Given the duration of the civil conflict in Northern Ireland, we can expect that those who developed PTSD for example as a result of events in the earlier days of the violence, and who have not recovered are more than likely to be found in Kessler's one third who do not recover in the long term. But this should not mean that we give up hope that chronic PTSD sufferers can recover. The findings of treatment studies for people with long standing and complicated PTSD and related trauma disorders show that known effective treatments can bring about very good recovery, which goes beyond the less aspirational aim of helping people to manage to live with unpleasant and distressing symptoms. For example, a study carried out by the Northern Ireland Centre for Trauma and Transformation highlights the effectiveness of trauma focused cognitive therapy for adults affected by the conflict in Northern Ireland (Duffy et al. 2007). The key is getting access to effective trauma therapies.

To draw a number of strands together from this study and wider research we can make a number of observations:

1. There is a significant mental health need associated with trauma in general and the conflict in particular.

2. People are seeking help late for anxiety disorders (which includes a number of disorders that often develop in association with traumatic experiences, such as PTSD).

3. A significant proportion of those who seek help are not getting help they consider to

be helpful or effective.

4. People with chronic trauma related disorders including those who have experienced traumatic events associated with the conflict can be helped to the point where they make a recovery when they get access to effective trauma focussed therapeutic services.

Taking account of the need for development in all services relevant to people adversely affected by the conflict, it is the view of the research team that the findings of this study taken together with wider research and clinical experience suggest that there needs to be a considerable development of services capable of treating what is now a chronic and extensive trauma need in the community that is associated with the conflict. First, we believe the situation could be greatly improved if there was better identification of trauma related needs. Drawing from the findings of this study primary care in particular has a key role to play as do other services which are in regular contact with potential or actual trauma sufferers and high risks groups who have experienced events associated with the conflict. One of the problems facing primary care and other services at this interface point with trauma sufferers is that there are few specialist trauma services to which people can be referred.

Our second observation and conclusion is that if people with chronic and complicated trauma related needs (of which there are many according to the findings of this study) are to be helped to recover, they will need to have routine and readily available access to effective specialist trauma services. These services need to be capable of delivering the trauma focussed therapeutic services that are required to manage the complex and sometimes risk bound needs of trauma sufferers. Taking the findings of this study together with clinical experience there are reasonable grounds for concern that the provision of specialist effective trauma focussed service for members of the public, in particular for the civilian population, is insufficient, probably significantly so. This points to the need for further investment in the quantity of services that are routinely and readily accessible, and to the development of the workforce, so that practitioners with a baseline of competence in appropriate therapeutic interventions can be lifted to the level of specialist trauma practice. Specialist services and other relevant services will need to be supported by a workforce plan that includes access to effective trauma focussed training and with on-going supervision and continuing professional development. The costs of such an investment would in the view of the research team be considerably offset by for example, the costs to the statutory health and social services of managing the symptoms and co-morbid physical and mental health problems and disorders associated with traumatic experiences as illustrated in detail in this report. (A study in progress and due to be published later in 2011 will present the costs and benefits in more detail providing an economic argument for addressing this legacy of the conflict, to set alongside the humanitarian and political arguments).

The following additional recommendations are made:

We recommend that, on basis of the quantities identified in the Report, working estimates of how many people are likely to require services in next 5 to 10 years should be developed. This should take into account:

- Those already known to public and voluntary services (some of which might not be sufficiently specialist for the assessed need);
- Those who have yet to seek help;
- The length of time over which people with in particular anxiety disorders are likely to seek help.

These estimates should be kept under review as data from service providers and experience in commissioning and delivering services progresses.

- We recommend that a determination is made as to the types of trauma-related therapeutic services that will be required taking account of the research evidence base and best practice guidance; also the numbers of practitioners required at each level of the stepped care spectrum in the public and voluntary sectors. This work should be supported by audits of existing services so that the current levels of provision across the stepped care spectrum is established and that any gaps in provision can be identified.
- We recommend that workforce development plans are generated which will provide a basis for the planning and commissioning of training and supervision across the stepped care spectrum. These plans should be kept under review as data from service providers and experience in commissioning and delivering services progresses.

In conclusion, we believe that the need identified in this Report poses this community with significant challenges and the findings describe a significant and as yet inadequately addressed legacy of the conflict. In preparing the Report we have endeavoured to carefully analyse the data available to us, erring on the conservative side where there was uncertainty and have set out to provide a resource for this community that would provide an analysis upon which sound judgements and progress could be made. We believe that in this Report, and previous reports and studies that have informed our work, there is more than a good case for acting to put in place the services so many in our community now clearly need access to. Given the scale of the impact that has been revealed, the increasing years of those with needs and the passing of time, on the basis of the findings of this study the need to act is both evident and urgent.

Chapter 7: Summary of all Recommendations

This Chapter draws together the conclusions and recommendations of Chapter 5.

Section 1 of Chapter 5 examined the level of exposure of the adult population to traumatic events, and specifically looked at the level of exposure to events associated with the civil conflict. The finding that 39% of the adult population have been exposed to one or more traumatic events associated with the civil conflict reveals that events associated with the conflict have been a major traumatic stressor for the population. This finding should be a matter of concern especially in relation to the development of policy and services.

1. It is recommended that relevant areas of public policy, commissioning and service delivery plans should include an assessment of the exposure of the population or target group concerned to events associated with the conflict so that due consideration can be given to the risks of mental health needs associated with such exposure.

Section 2 examined the levels of PTSD in the adult population and compared the Northern Ireland data with that from other related international studies. The level of PTSD in the Northern Ireland adult population is the highest across a number of related international studies.

2. As a marker for wider need, we recommend that the levels of PTSD should be noted and addressed as a public health concern and be a distinctive consideration in relevant areas of public policy and services.

Section 3 looked more closely at the levels of mental illness associated with conflict-related traumatic experiences. Clear associations were found between having had a conflict related traumatic experience and the risk of having one or more mental health disorders.

3. It is recommended that policy makers, planners, commissioners and service providers incorporate into their assessments of need and commissioning and service plans the findings and key implications of the association between mental illness and conflict related traumatic experiences.

4. Assessments of need at population, group and neighbourhood levels and service plans should specifically take account of particular socio-demographic risk factors associated with mental health disorders. These assessments should take particular but not exclusive account of the risk of anxiety and mood disorders among women and substance and impulse-control disorders among men, those in younger age-groups and those who were previously married (separated, divorced or widowed).

Section 4 examined the link between having one or more traumatic experiences (including those associated with the civil conflict) and having one or more chronic physical health conditions. Chronic physical conditions were found to be more strongly associated with having had a traumatic experience (conflict or non-conflict) than not having had any traumatic experience.

5. We recommend that policy makers, service commissioners and providers should be aware of the association between experiencing a traumatic event and having one or more chronic physical health conditions.

6. We recommend that steps are taken at service commissioning and service delivery levels to ensure that the mental and physical health needs of people who have had traumatic experiences are properly assessed, that referral processes are in place to address either need and that evidence-based therapeutic services for mental health needs are available.

7. We recommend that health and social care service providers in the statutory and non-statutory sectors should, as part of their assessments of need, be mindful of the association between experiencing a traumatic event and higher risk of having one or more chronic physical health conditions. Service providers should take account of both physical and mental health needs in their referrals and treatment provision for people who have experienced trauma.

Section 5 examined help seeking, service access and use, and the perceived helpfulness or effectiveness of therapeutic services.

8. Given evidence of lengthy delays in help seeking and therefore delays of the earliest point at which invention can commence, particularly among those with anxiety and substance disorders, we recommend that policy makers, service providers, family and friends, advocates and support groups should encourage individuals with trauma-related mental health disorders to seek help for their emotional problems and raise awareness of available treatments.

9. We recommend that improving GPs' and others' (particularly within primary and community care services) levels of awareness of the impact of traumatic experiences, skills in detection and assessment of trauma related disorders and in responding appropriately within their role to trauma needs, should be a particular focal point for service improvement and development. Such actions should be especially aimed at improving the pro-activity of services in addressing trauma related needs and ensure people are referred promptly to appropriate trauma related services.

10. We recommend that there should be specific progress in expanding and developing effective specialist trauma focussed therapeutic services so that they are routinely and readily accessible to the public and to which primary care and other community

services can refer.

11. Based on evidence of the low percentage of individuals who receive helpful or effective treatment, we recommend that policy makers, service commissioners and providers must increase the promotion and delivery of evidence-based treatments for trauma-related disorders.

12. Costs associated with the management of symptoms of post trauma disorders and the management and treatment of co-morbid physical and mental health disorders should reduce where effective trauma focussed services are provided. We therefore recommend that a health economic perspective informs the development of services

13. We recommend that, on basis of the quantities identified in the Report, working estimates of how many people are likely to require services in next 5 to 10 years should be developed. This should take into account:

    - Those already known to public and voluntary services (some of which might not be sufficiently specialist for the assessed need);
    - Those who have yet to seek help;
    - The length of time over which people with in particular anxiety disorders are likely to seek help.

    These estimates should be kept under review as data from service providers and experience in commissioning and delivering services progresses.

14. We recommend that a determination is made as to the types of trauma-related therapeutic services that will be required taking account of the research evidence base and best practice guidance; also the numbers of practitioners required at each level of the stepped care spectrum in the public and voluntary sectors. This work should be supported by audits of existing services so that the current levels of provision across the stepped care spectrum is established and that any gaps in provision can be identified.

15. We recommend that workforce development plans are generated which will provide a basis for the planning and commissioning of training and supervision across the stepped care spectrum. These plans should be kept under review as data from service providers and experience in commissioning and delivering services progresses.

Appendix A: Socio-demographic Characteristics associated with lifetime disorders

The table below summarises the results of a series of regression analyses examining the association of socio-demographic characteristics with the risk of having a lifetime disorder. Regression analyses have been carried out for four outcomes: any lifetime anxiety disorder, any lifetime mood disorder, any lifetime substance disorder and any lifetime impulse control disorder.

Results presented in the table can be summarised as follows: Females were more likely to have a mood or anxiety disorder while males were more likely to have a substance or impulse-control disorder. Thos aged 65+ were less likely to have each of the four broad categories of disorders. Those aged 50-64 were also less likely than those aged 18-34 to have a substance disorder. Individuals who were previously married were more likely to have an anxiety, mood or substance disorder. Finally those with a high level of income were significantly less likely to have a substance abuse disorder compared to those with the lowest income level.

Table 14: Logistic regression analysis of socio-demographic correlates associated with lifetime disorders

	Lifetime anxiety disorder		Lifetime mood disorder		Lifetime substance disorder		Lifetime impulse-control disorder	
	Odds Ratio	P-value	Odds Ratio	P-value	Odds Ratio	P-value	Odds Ratio	P-value
Gender (base: male)								
Female	1.77*	0.00	1.64*	0.00	0.22*	0.00	0.44*	0.00
Income level (base: low)								
Low-medium	0.92	0.65	0.82	0.28	1.08	0.76	1.28	0.35
Medium-high	0.94	0.69	1.01	0.94	0.86	0.53	1.28	0.36
High	0.79	0.30	1.02	0.91	0.53*	0.02	0.65	0.18
Age-group (base: 18-34)								
Age 35-49	1.08	0.68	1.23	0.27	0.60	0.03	1.03	0.91
Age 50-64	1.07	0.73	0.92	0.68	0.61*	0.05	0.62	0.15
Age 65+	0.45*	0.00	0.26*	0.00	0.11*	0.00	0.15*	0.00
Marital status (base: married)								
Separated/divorced/widowed	2.08*	0.00	2.35*	0.00	2.59*	0.00	1.59	0.08
Never married	1.16	0.42	1.10	0.61	1.46	0.10	1.41	0.18
Educational attainment (base: primary)								
Secondary	0.75	0.33	0.66	0.15	0.65	0.29	1.58	0.39
A level	0.72	0.30	0.62	0.13	0.68	0.40	1.17	0.78
Higher	0.84	0.60	0.89	0.71	0.92	0.86	1.78	0.31

* Indicates that odds of having any lifetime disorder are significantly different to the base category at the 5% level of significance

Appendix B: Socio-demographic Characteristics associated with service use among individuals with any 'post-conflict' disorder

Table 15 below show the results of a series of regression analyses examining the association of socio-demographic characteristics with lifetime visits to a range of service providers. Regression analyses have been carried out for five different service providers: psychiatrist, other mental health professional, general medical professional, human services and complementary and alternative medicine. These analyses were carried out for those who had any post-conflict disorder.

Results presented in the table can be summarised as follows: Females were more likely than males to have visited any other mental health professional and their GP. Those aged 35-49 were more likely than those aged 18-34 to have visited a human services provider. Those who were previously married were more likely than those who were married to have visited a psychiatrist or a human services provider while those who were never married were more likely to have used CAM. Individuals with a medium–high income level were less likely than those with a low income to have visited a psychiatrist, while those with a higher level of education were less likely to have visited a complimentary or alternative therapist.

Table 15: Socio-demographic correlates of service use among individuals who had any 'post-conflict' disorder

	Psychiatrist		Other mental health professional		General Medical		Human Services		CAM	
	Odds Ratio	P-value	Odds Ratio	P-value	Odds Ratio	P-value	Odds Ratio	P-value	Odds Ratio	P-value
Gender (base: male)										
Female	0.60	0.06	2.14*	0.01	2.70*	0.00	1.32	0.57	1.43	0.36
Income (base: low)										
Low-medium	1.22	0.61	0.87	0.71	1.37	0.45	0.37	0.20	0.53	0.25
Medium-high	0.45*	0.03	0.87	0.70	1.09	0.83	1.12	0.86	0.49	0.17
High	0.63	0.26	1.29	0.57	0.91	0.83	0.74	0.65	0.91	0.89
Age group (base: 18-34)										
35-49	1.09	0.84	1.65	0.19	0.89	0.74	5.99*	0.03	1.98	0.15
50-64	1.35	0.55	1.72	0.21	1.80	0.16	2.54	0.35	1.33	0.59
65+	0.83	0.76	1.13	0.88	0.67	0.50	5.17	0.18	3.91	0.09
Marital status (base: married)										
Separated/divorced/widowed	1.90*	0.05	1.13	0.75	1.51	0.28	4.74*	0.01	1.72	0.34
Never married	0.79	0.58	1.96	0.06	0.74	0.39	2.06	0.31	5.49*	0.00
Educational attainment (base: primary)										
secondary	0.64	0.55	.	.	1.51	0.46	0.39	0.46	0.51	0.35
Alevel	0.52	0.43	.	.	1.38	0.59	0.88	0.92	0.54	0.43
higher	1.13	0.88	.	.	2.20	0.21	1.42	0.79	0.14*	0.04

* Indicates that odds of having visited a given service provider are significantly different to the base category at the 5% level of significance

Appendix C: Glossary of Terms

Chi-squared: A chi-squared or χ^2 test is a statistical test which examines if differences (in exposure to trauma for example) between two groups are likely to occur by chance.

Conflict-related traumatic events: An individual was deemed to have experienced a conflict-related traumatic event if they reported experiencing any one of the following traumatic event types from 1968 onwards: participated in combat; served as peacekeeper or relief worker in a place of war or terror; was an unarmed civilian in a place of war; lived in a place of ongoing terror; was a refugee; was kidnapped or held captive; was in a man-made disaster; beaten by someone other than parents or partner; mugged or threatened with a weapon; witnessed someone being killed or seriously injured; purposely caused injury or death; saw atrocities.

Epidemiology: Epidemiology is the study of the level/prevalence of a disorder within a population.

Lifetime disorders: Lifetime disorders refer to disorders that were present at any point in an individual's life.

Logistic regression: Logistic regression analysis is a statistical method used to examine the statistical association of a range of characteristics with a given dichotomous outcome (an outcome with two possible options), such as having a conflict related trauma or not.

Odds ratio: An odds ratio is produced in the output of logistic regression analysis and indicates the risk of an outcome occurring compared to a base category. For example if we examined gender in relation to having a disorder and females had an odds ratio of 2, this would indicate that females were twice as likely to have a disorder as males (all else being equal).

Post-conflict disorder: For the purpose of this report a 'post-conflict' disorder is one which first developed in the same year or after an individual's first experience of conflict-related trauma.

Prevalence: The prevalence of a disorder indicates the percentage of the population who have or have had the disorder in a given period of time. For example, the lifetime prevalence of depression is the percentage of the population who have had depression at some point in their life.

Statistically significant: in statistics, a result is called **statistically significant** if it is unlikely to have occurred by chance. The significance level (p-value) is the amount of evidence required to accept that an event is unlikely to have arisen by chance.

The Troubles: This term has been widely used to refer to the most recent (and a previous) period of violence in Northern Ireland and the border areas of the Republic of Ireland.

Appendix D: Recommendations from '*Trauma, Health and Conflict*' (Ferry et al. 2008)

1. Improved public information for people involved in traumatic experiences, their families, schools, employers etc. to improve detection of PTSD and promote and support early help seeking.

2. The development of service pathways to ensure people with trauma related needs are referred to trauma focused and related services.

3. Support for primary and community care services (statutory and non-statutory) in detecting trauma related disorders, treating where effective services exist at this level and referring appropriately to specialist trauma related services.

4. Continue and enhance the development of mental health services to identify, assess and effectively treat trauma related disorders and to support people with trauma related needs before, during and after therapy.

5. Continue and enhance the development of specialist evidence based trauma services including the provision of support for people with trauma related needs before, during and after therapy.

6. The development of early trauma intervention services in line with the developing evidence base.

7. Services treating adults with Major Depressive Disorder should routinely assess for PTSD and provide effective trauma focused treatments where found.

8. Services and employers should be mindful of the additional risk for women in developing PTSD.

9. Primary and secondary care services should take into consideration the possibility of a link between the presence of a specific chronic physical health conditions and PTSD, and refer for assessment where indicated.

10. Services and employers should be aware of the link between PTSD and impaired daily living functioning.

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