



Latest developments in post-traumatic stress disorder: diagnosis and treatment

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Abstract

Background: Most people will experience a traumatic event during their lives. However, not all will develop Post-Traumatic Stress Disorder (PTSD). There have been recent changes in diagnostic criteria for PTSD and there are a number of treatment options available.

Sources of data: This review is based on published literature in the field of PTSD, its management and the recently published DSM-V.

Areas of agreement: The most influential risk factors relate to the post-incident environment rather than pre-incident or the incident itself. There are two established and effective psychological therapies; trauma-focussed cognitive behavioural therapy and eye movement desensitization and reprocessing.

Areas of controversy: It is unclear what actually constitutes a traumatic event. Psychological debriefing or counselling interventions, shortly after trauma-exposure are found to be ineffective and may cause harm. Medication, whilst common practice, is not recommended as first line management.

Growing points: Future psychotherapies for PTSD may be just as effective if delivered in carefully considered group settings or through remote means.

Areas timely for developing research: Research into the most effective ways to prevent individuals at risk of developing PTSD is still at an early stage and development of effective early interventions could substantially reduce the morbidity associated with PTSD.

Key words: PTSD, trauma, CBT, EMDR

Background

Most people will experience at least one traumatic event during their lifetime.¹

However, the risk of trauma-exposure varies considerably as a result of their upbringing, where they live and also what job they do. Regardless of the nature of the traumatic incident they are exposed to, a substantial proportion of people will experience at least some short-term symptoms of distress. In most cases, these symptoms will dissipate over the course of a few weeks without the need for any formal intervention. However, it is inevitable that a proportion, in the main a minority, of those exposed to a traumatic event will develop longer-term mental health problems, which include, but are certainly not limited to, Post-Traumatic Stress Disorder (PTSD).

Post-Traumatic Stress Disorder as a formal diagnosis came into being in 1980, when the American Psychiatric Association (APA) included PTSD within the third edition of its standard diagnostic tome, the Diagnostic and Statistical Manual of Mental Disorders (DSM-III).² Perhaps more so than most other psychiatric diagnoses PTSD was initially, and has remained, a somewhat controversial label. This is perhaps because, unlike the vast number of other psychiatric diagnoses, in order to suffer from PTSD an individual has to be exposed to a specific, traumatic, event. Whilst precipitating factors are important in many other mental health conditions, the absence of a particular precipitant factor would not prevent a clinician from making any specific diagnosis. For instance, whilst many people who suffer from clinical depression will have experienced a 'loss event', making the diagnosis does not require a loss event to have occurred. However, being exposed to a traumatic event is an essential prerequisite to making a PTSD diagnosis. Another important element to the controversial nature of the PTSD diagnosis is that the definition of what constitutes a traumatic event is not clear and is a matter of both scientific and lay debate.

The nature of traumatic events

When first conceptualized in DSM-III, PTSD was a condition which followed a 'catastrophic stressor that

was outside the range of usual human experience'. The original thinking behind this label was that exposure to potentially traumatic occurrences such as war, torture, rape or disasters (natural or man-made) was instrumentally different to otherwise challenging but non-traumatic stressors which occur relatively commonly throughout life such as serious physical illnesses, loss of employment or marital breakdown. Should someone who had been exposed to a non-trauma stressor experience significant psychological suffering this might be classed as an Adjustment Disorder but could not be classified as PTSD. Whilst the actual symptoms of an Adjustment Disorder and PTSD might be similar, the early thinking was that whereas most healthy individuals would remain resilient in the face of 'ordinary' stress, they were much less likely to do so when confronted by a traumatic stressor.

However, differentiating between traumatic and 'ordinary' stressors can be far from clear. The DSM-IV criteria for PTSD, published in 1994,³ were more comprehensive. In order for someone to be diagnosed with PTSD, in accordance with the DSM-IV criteria, an individual needed to be exposed to a traumatic event and their response had to include experiencing intense helplessness, horror or fear. Again, whilst on the face of it, it might seem 'common sense' that any truly traumatic stressor should lead to an intense emotional, cognitive or behavioural response, the DSM-IV criteria failed to take proper account of how people respond to challenging circumstances particularly with regard to the timing of trauma-induced reactions. Whilst popular films often portray panic and terror as the inevitable consequence of being exposed to traumatic events, this view is not consistent with the ever-growing literature on psychological resilience. For example, a study carried out in the aftermath of the 2007 Madrid bombings examined the impact of the terrorist incident on different groups of people.⁴ High levels of psychopathology, including PTSD, were unsurprisingly evident in individuals who were injured during the incident as well as the general population living in the areas where the bombings took place. However, levels of PTSD in the Police service personnel who dealt with the aftermath of the incident were remarkably low. This was in spite of the Police in

question having been repeatedly exposed to traumatic scenes over many years as they dealt with the consequences of the Basque terrorist group ETA. A similarly low rate of post-incident mental health problems was found in rescue workers in New York City after the 11th September 2001 World Trade Centres incident⁵ whose careers required them to repeatedly deal with traumatic events. Thus the requirement of having to experience helplessness, horror or fear in response to a traumatic event as a prerequisite to making a diagnosis of PTSD failed to take account of many individuals, especially those in trauma-exposed occupational roles, such as the military or media, to respond in a wholly rational and considered manner after a traumatic event.

What leads to PTSD?

Thus whilst PTSD is an important, albeit relatively uncommon, consequence of exposure to traumatic events, there are many factors which influence an individual's vulnerability to develop post-incident mental ill-health. Comprehensive meta-analyses of risk factors for PTSD^{6,7} have consistently found that psychological processes are more important predictors of post-incident outcome than pre-traumatic static factors such as poor childhood adversity or demographic factors such as gender or race. In general terms the two strongest factors which determine longer-term psychological outcomes after traumatic incidents are ones which relate only to the post-incident period. In particular how much pressure or 'stress' an individual experiences as they cope with/react to the traumatic event and the availability and quality of social support during the recovery period are the two most influential factors in determining longer-term outcomes. For most people the first few weeks after experiencing a traumatic event are the most challenging and being able to access social support and recover in a low 'stress' environment are important.

Taking account of the considerable available evidence on the normality of short-term post-incident distress, the National Institute for Health and Care Excellence's (NICE) guidance on the management of PTSD⁸ recommends a period of 'watchful waiting'

for the first month after a traumatic experience. During this period NICE recommend that rather than formally intervene, individual's recovery is checked upon to ensure it is progressing positively. If recovery is not evident after a month then more formal interventions might be recommended at that stage (as discussed later). The recommendation for watchful waiting, rather than routine immediate psychological intervention, acknowledges both that the majority of people who experience distress after an event recover without the need for formal psychological support and that there is no evidence that post-incident counselling, often termed psychological debriefing (PD), is helpful. In fact the contrary is true with the most robust reviews of PD finding that its routine use is associated with worse outcomes⁹ than doing nothing.

As stated above, there is however good evidence that social support can be helpful in aiding post-incident recovery. Studies of military personnel have consistently shown that unit cohesion or camaraderie and supportive leadership from immediate line managers are highly important determinants of post-incident resilience especially for individuals working in trauma-exposed organizations.¹⁰ In simple terms, within organizational settings, resilience often lies between individuals rather than within individuals. Recent guidance from the United Kingdom Psychological Trauma Society for trauma-exposed organizations¹¹ reinforces the need for preparing staff, including importantly those in managerial positions, well before working in trauma-prone environments as well as the importance of peers in the early detection of persistent trauma-related mental health conditions. One example of this approach is enshrined in the Trauma Risk Management (TRiM) system which was developed in the UK military. Trauma Risk Management is a method of secondary prevention that functions by providing non-healthcare staff, such as frontline troops, media professionals or diplomats, with a background understanding of psychological trauma and its effects. Trauma Risk Management Practitioners are trained to carry out a simple interview to identify a number of risk factors which, if present, suggest that someone either be managed through improved social support and

managerial led temporary workplace adjustments or, for more serious problems, brought to the attention of a healthcare professional. Trauma Risk Management interviews take place a few days after an incident and, in keeping with the NICE guidance, about a month later. People who are found to have persistent difficulties are encouraged to seek professional help.

Diagnosing PTSD

The recent publication of the DSM-V in 2013¹² included a considerable revision of the PTSD diagnosis. The other major diagnostic text, the International Classification of Diseases Volume 10 (ICD-10), published in 1991,¹³ does not cover the PTSD diagnosis in an especially detailed manner. However, the ICD 11, which is due for publication in 2017, is likely to include a more comprehensive if somewhat more restrictive definition of PTSD. The section on diagnostic criteria below is based on the DSM-V criteria and applies to adults, adolescents and children older than six years. The DSM-V also includes a preschool subtype of PTSD for children aged six years and younger, which is not covered in any detail in this article.

In order to make a diagnosis of PTSD there are a number of criteria which need to be assessed (please see Table 1). First, clinicians should ensure that individuals have indeed been exposed to a traumatic event and have subsequently experienced symptoms related to trauma exposure from each of four clusters namely: (i) intrusion; (ii) avoidance; (iii) negative alterations in cognitions and mood and (iv) alterations in arousal and reactivity. The sixth criterion concerns the duration of symptoms which should have been present for at least one month after the incident and the seventh criterion is that the symptoms being experienced must affect day to day functioning and not be merely unpleasant or simply cause non-impairing distress. The eighth, and final, criterion relates to the symptoms not being attributable to a substance or co-occurring medical condition. A diagnosis of PTSD is thus not warranted for individuals who have been inconvenienced, upset, temporarily distressed or annoyed by a highly challenging experience.

According to the DSM-V criteria,¹² a potentially traumatic stressor should include exposure to: death, threatened death, actual or threatened serious injury or actual or threatened sexual violence. This exposure may occur in one of four ways: (i) directly; (ii) through direct witnessing of an incident; (iii) through indirectly learning that a close relative or friend has been exposed to actual or threatened trauma whether intentional (e.g. violence) or accidental (e.g. road traffic accident) or (iv) as a result of repeated or extreme indirect exposure to aversive details of an event usually in the course of professional duties (e.g. first responders, collecting body parts; professionals repeatedly exposed to details of child abuse). The last exposure criterion does not include indirect non-professional exposure through electronic media (including internet), television or movies which many members of the public might be exposed to. The occupational nature of traumatic experiences was not specifically recognized before the publication of DSM-V.

As a result of traumatic exposure, as stated above, people who suffer with PTSD need to experience symptoms from four clusters. The first of these are the intrusion symptoms which describe persistently re-experiencing the traumatic event which need to be experienced in at least one of the following way(s): (i) recurrent, involuntary and intrusive memories (or repetitive play in children); (ii) traumatic nightmares (or frightening non-trauma-related dreams in children); (iii) dissociative reactions (e.g. flashbacks) which may occur on a continuum from brief episodes to complete loss of consciousness (children may re-enact the event in play); (iv) intense or prolonged distress after exposure to traumatic reminders or (v) marked physiologic reactivity (e.g. raised heart rate or shortness of breath) after exposure to trauma-related stimuli. People who suffer with PTSD also need to experience at least one avoidance symptom which can be either avoiding: (i) trauma-related thoughts or feelings or (ii) trauma-related external reminders (e.g. people, places, conversations, activities, objects or situations). Those who suffer with PTSD experience at least two negative alterations in cognitions and mood which can include: (i) an inability to recall key features of the traumatic event (usually because of dissociative amnesia and not because of head injury, alcohol or drugs);

Table 1 DSM-5 diagnostic criteria for PTSD *Criterion 1: Exposure to a traumatic event*

- Directly experiencing the traumatic event(s)
 - Witnessing, in person, the event(s) as it occurred to others
 - Learning that the traumatic event(s) occurred to a close family member or friend
 - Experiencing repeated or extreme exposure to aversive details of the traumatic event(s); this does not apply to exposure through media such as television, movies or pictures
- Criterion 2: Persistent re-experiencing of the event in one of several ways:*

- Thoughts or perception
- Images
- Dreams
- Illusions or hallucinations
- Dissociative flashback episodes
- Intense psychological distress or reactivity to cues that symbolize some aspect of the event

Note: Unlike adults, children re-experience the event through repetitive play rather than through perception.

Criterion 3: Avoidance of stimuli associated with the trauma and numbing of general responsiveness, as determined by the presence of one or both of the following:

- Avoidance of thoughts, feelings or conversations associated with the event
 - Avoidance of people, places or activities that may trigger recollections of the event
- Criterion 4: At least two symptoms of negative alterations in cognitions and mood associated with the trauma:*

- Inability to remember an important aspect of the event(s)
- Persistent and exaggerated negative beliefs about oneself, others or the world
- Persistent, distorted cognitions about the cause or consequences of the event(s)
- Persistent negative emotional state
- Markedly diminished interest or participation in significant activities
- Feelings of detachment or estrangement from others
- Persistent inability to experience positive emotions

Criterion 5: Marked alterations in arousal and reactivity, as evidenced by at least two of the following:

- Irritable behaviour and angry outbursts
- Reckless or self-destructive behaviour
- Hypervigilance
- Exaggerated startle response
- Concentration problems

(ii) persistent (and often distorted) negative beliefs and expectations about themselves or the world (e.g. 'I am bad' or 'The world is completely dangerous'); (iii) persistent distorted blame of self or others for causing the traumatic event or for resulting consequences; (iv) persistent negative trauma-related emotions (e.g. fear, horror, anger, guilt or shame); (v) markedly diminished interest in (pre-traumatic) significant activities; (vi) feeling alienated from others (e.g. detachment or estrangement) and (vii) constricted affect or persistent inability to

experience positive emotions. Of all the PTSD symptoms avoidance symptoms have been found to be the most impairing.¹⁴

The next set of diagnostic criteria are those which relate to alterations in arousal and reactivity that began or worsened after the traumatic event of which two need to be present. These include at least two of the following: (i) irritable or aggressive behaviour; (ii) self-destructive or reckless behaviour; (iii) hypervigilance (which refers to being over aware of potential

threats); (iv) exaggerated startle response (which manifests as someone being overly jumpy); (v) problems in concentration and (vi) sleep disturbance.

As mentioned above, in order to constitute a PTSD diagnosis these symptoms have to continue for more than one month and be associated with significant symptom-related distress or functional impairment (e.g. social, occupational) and not be otherwise due to medication, substance use or other illnesses.

There are two specific additional sub-categories of PTSD that are worthy of mention. The first of these is PTSD with dissociative symptoms as a reaction to trauma-related stimuli. Dissociation refers to alterations in consciousness, identity and memory which can manifest as either 'depersonalization' which refers to feelings of being an outside observer of or detached from oneself (e.g. 'this is not happening to me' or 'I feel like being in a dream') or 'derealization' which refers to an experience of unreality, distance or distortion (e.g. 'things are not real'). People who experience PTSD with dissociative symptoms are more likely to present as complex, because of possible high levels of childhood adversity or exposure to repeated or prolonged trauma.

Whilst 'complex PTSD' is not a diagnostic formal category within DSM-V¹² (current ICD 11 proposals are to include complex PTSD as a formal diagnosis) the label is recognized by many traumatic stress experts. Complex PTSD is thought to refer to presentations of PTSD with predominant symptoms grouped into five broad domains: (i) emotion regulation difficulties, (ii) disturbances in relational capacities, (iii) alterations in attention and consciousness (e.g. dissociation), (iv) adversely affected belief systems and (v) somatic distress or disorganization. Complex PTSD is typically the result of exposure to repeated or prolonged instances or multiple forms of interpersonal trauma, often occurring under circumstances where escape is not possible due to physical, psychological, maturational, family/environmental or social constraints.¹⁵ Whilst some professionals would argue that people who suffer from complex PTSD should be more correctly labelled as suffering from a personality disorder (most often either a borderline personality disorder or personality change after catastrophic experience) or substance dependency, it is fair to say

that people who fall into this category are substantially more challenging to treat (as discussed later).

The other sub-category is termed 'with delayed expression' which refers to a full PTSD diagnosis not being met until at least six months after the trauma(s) although onset of symptoms may occur immediately. Most often people who experience what is sometimes also termed delayed-onset PTSD do indeed suffer with sub-threshold symptoms well before six months post the index traumatic event and over time the burden of symptoms increases¹⁶ as the individual fails to get sufficient support or effectively re-establish their pre-trauma routine. In other cases whilst individuals cope with the psychological consequences of the traumatic event well but a subsequent significant life event (e.g. relationship breakdown) occurs and the individual may attribute the subsequent distress to the earlier trauma rather than the more recent life event.

Co-morbidity at the time of diagnosis is common. Studies have shown that compared to men who do not have PTSD, men who suffer from the disorder have around a 7-fold increase in depression, 6-fold increase in generalized anxiety disorder, 3-fold increase in drug abuse¹⁷ and a 2-fold increase in alcohol abuse. Co-morbidity at the time of diagnosis is also more common in women.

How common is PTSD

Within the UK the best estimate of the whole population PTSD point prevalence is 3%, which is derived from the 2007 Adult Psychiatric Morbidity Study (APMS).¹⁸ International studies of lifetime prevalence^{19,20} show considerable variations in rates between nations, however figures in the region of 5% for men and 10–11% for women tend to be most commonly quoted. Post-Traumatic Stress Disorder rates within occupational groups vary considerably for instance up to one-third of security contractors; between 7 and 30% of combat troops²¹; up to 20% of Ambulance workers²² and up to a quarter of war reporters are likely to suffer from PTSD; many also frequently report significant trauma-related guilt²³. Rates of PTSD following specific traumatic events also vary considerably and do not correlate well with objective trauma markers such as the Injury Severity Score in the case of

physical injury.²⁴ This is most probably because the underlying causes of PTSD are related to cognitive processes than easier to measure objective factors and indeed there is now good evidence that changes in the way people think about a traumatic event directly predict recovery from the impact of a traumatic event.²⁵

How to manage PTSD

During the initial post trauma period, formal treatment is not required in the vast majority of cases. Instead, as stated above, provision of good social support and a temporary reduction in exposure to stressors is likely to aid recovery in most cases.²⁶ A minority of individuals will however suffer with most intense and impairing symptoms which are diagnostically referred to as acute stress disorder for the first month post-incident. These individuals may benefit from formal 'early interventions' and the strongest evidence for these is for Cognitive Behavioural Therapy (CBT) techniques being effective.²⁷

The most significant barrier to the effective provision of care for those who do not recover but instead develop PTSD is that the majority of people who suffer with mental health disorders, including but not limited to PTSD, do not seek any professional help at all. The 2007 APMS study found that around 70% of people who suffer with PTSD were not seeking any professional help for their condition.

For those who do come forward for help there is good evidence, from many randomized controlled trials (RCTs), that two forms of time-limited psychological therapies are effective treatments. The first is trauma focussed CBT,²⁸ which include variants such as cognitive processing therapy (CPT), prolonged exposure (PE), cognitive therapy (CT), cognitive restructuring (CR). Traditionally this is delivered in 8–12 weekly sessions lasting between 60 and 90 minutes. However, complex PTSD cases are likely to require more sessions, many of which will initially not be trauma focussed but instead aim to stabilize and improve the strength of the therapeutic alliance with the therapist. There is also some good evidence that for military veterans, group-based CPT can be effective²⁹ and there is also emerging evidence that remotely delivered CBT for PTSD may be effective.³⁰

The other therapy for which there is good RCT evidence is eye movement desensitization and reprocessing (EMDR).³¹ Eye movement desensitization and reprocessing is a structured intervention that asks patients to recall an image that represents the traumatic incident, along with associated negative cognition and bodily sensations. Whilst doing this, patients are asked to follow alternating eye movements or other bilateral stimulation, which have been shown to tax working memory and lower emotional arousal of the traumatic memory so that the trauma can be resolved.³² Eye movement desensitization and reprocessing is also routinely delivered as 8–12 weekly 60–90 min sessions.^{26,31}

The NICE guidelines on the management of PTSD recommend that the use of medication should be considered as a second-line strategy although prescriptions may also be used to treat co-morbidity. There is considerable evidence available, which suggests that antidepressant medications can have a positive effect on PTSD symptoms. The strongest evidence is for paroxetine, sertraline and venlafaxine. A variety of other medications have also been suggested as being useful in the management of PTSD including the alpha-blocker prazosin, which may have a role in treating trauma-related nightmares and also atypical antipsychotics that may reduce agitation. The evidence supporting the use of these two medications is less strong, however, than the evidence for antidepressants.²⁶ One important note with respect to medication is that there is no evidence at all that benzodiazepines have a role in the treatment of PTSD as shown by numerous trials.³³ Furthermore, their use may risk paradoxical disinhibited behaviours.

Conclusions

Traumatic events are, by their nature, capable of leading to significant changes in people's lives. Most people who experience trauma will however remain resilient in the longer term although a substantial number will experience short-term, non-disabling symptoms in the days, weeks and months after the incident. A minority of trauma-exposed individuals will undoubtedly develop mental health difficulties including, but not limited to, PTSD. Of all the

various factors which affect an individual's potential to develop PTSD, the most important ones are the availability of effective social support after the event and an opportunity to recover in a relatively low pressure environment. Problematically, most people who develop PTSD do not approach a healthcare professional to seek help. There are, however, a number of effective relatively brief psychotherapies that can treat the condition, and medication may have a secondary role in some cases or to treat co-morbid conditions which are common. People who suffer repeated traumatic events, especially if they occur during childhood, are likely to be more challenging to treat and in general require a period of stabilization before they can engage in trauma-focussed treatment.

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Conflicts of Interest statement

The lead author (N.G.) is the President of the UK Psychological Trauma Society and also consults commercially with organizations about their management of traumatic exposure in the workplace.

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