

# Acute Stress Disorder, Posttraumatic Stress Disorder and Complex PTSD



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## Economic considerations

**Note:** A detailed economic evaluation of the 2013 Guidelines and the key recommendations is available in a separate companion document which is available for download from the Phoenix Australia website. The purpose of this chapter is to provide a broad overview of the economic considerations presented by the diagnosis and treatment of PTSD and ASD, with particular reference to the Australian community.

Building on the economic analysis completed for the previous version of these Guidelines, a brief search of the literature was conducted to identify any key studies published since 2013. Key search terms, combined with PTSD or trauma, included: economic, cost, resource, economic evaluation, cost-benefit, cost-utility, and cost-effectiveness.

### Summary of literature collected

In the previous (2013) Guidelines, seven records were identified in the search, of which six were considered potentially useful. The current search revealed a further ten, of which nine were considered potentially useful. The following provides an integrated summary of the studies identified in those searches.

### The cost burden of PTSD

PTSD is associated with substantial levels of disability, reduced productivity, and loss of quality of life.<sup>1</sup> For example, data from 26 countries involved in the World Mental Health Project were analysed to explore partial disability associated with a range of physical (e.g., cardiovascular disease, diabetes, cancer, back pain) and mental health conditions.<sup>2</sup> At an individual level, PTSD was consistently found to result in the highest levels of partial disability, followed by depression and bipolar disorder. At a population level, physical disorders resulted in higher disability levels than mental disorders due to their greater prevalence.

With respect to the additive cost of psychiatric conditions over physical conditions, in a study of trauma surgical patients, Zatzick et al.<sup>3</sup> reported a 46 to 103 per cent increase in length of stay and the cost of care ( $p < 0.01$ ) for those who had a psychiatric disorder compared to those who did not. The authors highlight the potential cost benefits of early recognition and intervention.

People with PTSD or posttraumatic stress symptoms have been shown to incur significantly higher healthcare costs compared to people without those symptoms,<sup>4-6</sup> or to those with other psychiatric diagnoses.<sup>7,8</sup>

For example, Chan et al.<sup>4</sup> explored the economic impact of psychiatric disorders resulting from motor vehicle accidents in South Australia. Approximately nine months after their accident, 31 per cent of

respondents were identified as depressed and 62 per cent as anxious, while 29 per cent met criteria for PTSD. Chan concluded that PTSD cases incurred significantly higher health care costs compared with non-PTSD cases ( $p < .001$ ), with untreated PTSD cases incurring significantly higher economic losses than treated PTSD and non-PTSD cases ( $p < .05$ ).

A US study by Walker et al.<sup>5</sup> examined the health care costs of a large group of women. After adjusting for depression, chronic medical disease, and demographic factors, women with high PTSD symptoms had significantly greater odds of having non-zero health care costs than women with low PTSD scores. Compared with women who had low PTSD symptoms, those with moderate symptoms had, on average, a 38 per cent increase in adjusted total annual health care costs, and those in the high PTSD group had a 104 per cent increase. The authors suggest that instituting health services interventions to improve recognition and treatment of PTSD in primary and specialty care clinics may be a cost-effective approach for lowering the prevalence of this disorder.

Lamoureux-Lamarche et al.<sup>6</sup> examined healthcare costs incurred by adults aged over 65 in a Canadian sample. The costs included those related to outpatient and ED visits, physician fees, inpatient stay, and medication use. The authors found that those adults with posttraumatic stress syndrome (PTSS) had higher psychotropic medication mental health outpatient costs, but not inpatient services-related costs, than those without PTSS.

Similarly, in a study of US Iraq and Afghanistan veterans suffering depression with or without PTSD, Chan and colleagues<sup>7</sup> revealed greater utilisation of specialty mental health treatments and other outpatient visits, greater use of antidepressant medications, and higher overall mental health care costs in the previous 12 months in those with PTSD.<sup>7</sup>

In another US study comparing the health care burden associated with PTSD compared to other psychiatric disorders, annual per-patient healthcare costs in a civilian US population were 4-9% higher for patients with PTSD than for those with major depressive disorder.<sup>8</sup> The difference in costs was driven by higher mental health service use among patients with PTSD.

In an economic analysis of health care costs following the current Middle East conflicts, the US National Bureau of Economic Research found that soldiers deployed to combat zones where they engaged in frequent enemy contacts, or witnessed allied or civilian deaths, were at substantially increased risk for suicidal ideation and PTSD.<sup>9</sup> The authors estimate health care costs to be a minimum of US\$1.5 to \$2.7 billion for combat-induced PTSD.

Despite the debilitating effects of PTSD, many people with the disorder do not seek treatment or do so only after having experienced symptoms over an extended period.<sup>10</sup> Koenen and colleagues<sup>11</sup> analysed World Health Organisation World Mental Health Surveys, and found that half of those participants with severe PTSD sought treatment, with only a minority receiving speciality mental health care. Unsurprisingly, there were significant disparities in PTSD treatment at country income level.<sup>12</sup>

People with PTSD are likely to incur costs additional to those of healthcare resources, such as social services and loss of employment productivity. A study into the economic costs of PTSD among the Northern Ireland adult population included both direct treatment costs (medication, hospitalisations, and visits to healthcare professionals) and indirect costs of productivity losses.<sup>13</sup> The total direct and indirect cost of PTSD in 2008 in Northern Ireland was estimated at £172.75 million. This study conservatively

indicates the extent of the public health burden of PTSD among the general population, and the associated adverse economic implications.

## **The cost-effectiveness of treatment**

The cost-effectiveness of a healthcare strategy, service, or intervention is determined by comparing both costs and health outcomes between the strategy and its comparator. Information about the cost-effectiveness of effective interventions is important in the context of developing clinical practice guidelines and translating research into patient benefit.

There is evidence that stepped care for individuals with PTSD in the aftermath of a natural disaster may be as cost-effective as usual care (skills for psychological recovery).<sup>14</sup> Prolonged exposure has also been shown to be more cost-effective than sertraline, a selective serotonin reuptake inhibitor (SSRI), in treating adults with PTSD.<sup>15</sup> Trauma-focussed cognitive behavioural therapy (TF-CBT),<sup>16</sup> prolonged exposure<sup>17</sup>, cognitive processing therapy (CPT),<sup>17</sup> virtual reality exposure<sup>18</sup> and SSRIs<sup>16</sup> appear to be cost-effective relative to no treatment or treatment as usual for adults with PTSD. However, Slade and colleagues (2017) examined the cost effectiveness of a 12 to 16 session cognitive behaviour therapy (CBT) intervention for PTSD tailored for adults with a co-occurring severe mental illness. In this very specific population, they found that the CBT was not more cost-effective than a three-session breathing retraining and psychoeducation intervention.<sup>19</sup>

While there is less research into the cost effectiveness of treatment for children and adolescents with PTSD, two studies have concluded that TF-CBT is cost-effective from the Australian healthcare perspective.<sup>16,20</sup> More recently, and outside of the Australian context, Shearer and colleagues<sup>21</sup> used trial data to estimate the cost-effectiveness of cognitive therapy for children and adolescents with recent exposure to a single-incident traumatic stressor (such as a motor vehicle collision, or assault). They found preliminary evidence in support of cognitive therapy's cost-effectiveness in this treatment population.

In the absence of data from clinical trials, cost-effectiveness can be modelled using costs, outcomes and disease progression data from a number of sources. One such modelling study suggested that optimal, evidence-based treatment of anxiety disorders, including PTSD, would be cost-effective compared with treatment as usual. Issakidis et al.<sup>22</sup> conducted a cost-effectiveness study that aimed to identify the averted burden and economic efficiency in Australia of current and optimal (i.e., evidence-based) treatment for the major mental disorders. The authors estimated that receipt of interventions consistent with evidence-based care ranged from 32 per cent of those in contact with services for social phobia to 64 per cent for PTSD. In terms of direct treatment costs, they found that PTSD treatment had higher per case per year costs than any of the other anxiety disorders. According to this study, individuals with PTSD constituted one-third of people treated for an anxiety disorder, but their treatment accounts for 40 per cent of the total cost of treatment for all anxiety disorders. The authors estimated that the costs to the community of 'years living with disability' from PTSD would be reduced by 34 per cent if evidence-based care were used for all. The authors conclude that evidence-based care for anxiety disorders would produce greater population health gains at a similar cost to current care, resulting in a substantial increase in the cost-effectiveness of treatment.

Policy simulations evaluating the savings associated with universal access to evidence-based treatment for veterans suggest that such access would generate substantial cost savings. In a large analysis of the benefits of evidence-based treatment, Kilmer and colleagues used microsimulation modelling to estimate

the social costs of depression and PTSD for the 261,827 US troops deployed on June 30, 2008, for Operations Enduring Freedom and Iraqi Freedom.<sup>23</sup> They estimated that, given current standards of care, roughly half of these individuals will be treated for these conditions in the two years after they return, and 30 per cent of those treated will receive evidence-based treatment. The authors estimated that the two-year social costs of depression and PTSD for this cohort would be US\$923 million.

Finally, on a slightly different topic, Jones and colleagues explored the benefits of remote screening for mental health conditions.<sup>24</sup> They found that using telehealth-only mental health screening for large numbers of soldiers within a compressed time frame was more expensive than in-person screening. Soldiers showed a strong preference for in-person screening, and telehealth resulted in higher referral rates (potentially a result of higher false positives). The authors conclude that there is no evidence of cost savings or improved acceptability for telehealth mental health post-deployment screening.

## Summary

The amount of high quality research literature is sparse, particularly around the economic burden of PTSD and the cost-effectiveness of evidence-based treatment. There is a limited number of treatments that are included in the economic evaluations we have reviewed, with other evidence-based treatments (such as EMDR) given little consideration in the literature. In addition there have been few comparisons made of active treatment interventions against other active interventions.

It is clear however that PTSD is a disorder that carries a high level of disability – possibly higher, in fact, than any other physical or mental disorder. It is also clear that people with PTSD tend to be high users of healthcare services and incur high healthcare costs – again, higher than those of other psychiatric disorders. There is preliminary evidence that routine use of evidence-based treatments may go some way, not only to improving outcomes for people with PTSD, but also to reducing the associated disability and healthcare costs.

## Commentary on economic burden

Thus, on the basis of existing research, it is clear that PTSD is associated with high service use, high healthcare costs, and long-term disability. PTSD is a high burden disorder that impairs functioning in many, if not all, areas of life, with consequences extending beyond the individual to impact on family members and society as a whole. To date there has been no comprehensive economic assessment of PTSD from a social perspective. Studies included in this review focus mainly on health service utilisation, and there is a paucity of evidence that uses surrogate outcomes of burden including rates of hospitalisation, work impairment and a greater risk of motor vehicle accidents. Further, the relative lack of evidence pertaining to treatment costs – particularly in Australia – makes it difficult to identify whether increased health care costs are a direct result of PTSD or are indirectly accounted for by the poor physical health commonly associated with PTSD.

The importance of addressing these issues through the use of health economic techniques was comprehensively addressed by McCrone et al.<sup>25</sup> Health economics provides tools (including cost-effectiveness, cost-benefit, and cost-utility analyses) to ascertain the relative efficiency of different treatment options. McCrone concludes that the quality of life and resource consequences of PTSD require a better understanding of the economics of the disorder and the alternative ways to treat it. These sentiments are echoed by the authors of the costing articles identified in the preceding section. The

economic burden associated with PTSD is significant, but treatments are available to alleviate this burden. These treatments, however, require the use of scarce resources and there is a shortage of adequately trained clinicians. In this environment of increased fiscal restraint, there is a need to identify those health care interventions, whether they are psychosocial or pharmacological, that provide the greatest benefit for the limited health dollar.

## **Current funding of ASD and PTSD treatment**

In the Australian healthcare system, a diverse range of practitioners provide treatment services for people with PTSD, variously funded by Commonwealth and state governments as well as by third party insurers and the affected individuals themselves. As a result of these diverse funding arrangements there are differences in availability of treatment between states. To date, there is no overall assessment of financing arrangements for the treatment of ASD and PTSD in Australia and the extent of unmet need for treatment is not known. In this context, it is difficult to make an assessment of the feasibility or cost and benefit of recommendations made in these Guidelines.

Of interest in this context, is the fact that the 2007 and 2013 Guidelines recommended 90-minute sessions for trauma-focussed therapy. Some jurisdictions have created a new item number allowing clinicians to claim a limited number of these extended sessions for trauma-focussed PTSD treatment (at the time of writing, the Department of Veterans' Affairs and several victims of crime agencies, for example), and other jurisdictions allow extended sessions more broadly if they can be justified (e.g., Comcare). To date, no data have been published on the cost benefit of these changes, but at least they give providers the opportunity to be remunerated for evidence-based treatment. It should also be emphasised, of course, that many other fee structures for mental health providers do not support consultation times of this length. Those briefer consultation times may favour short interactions – presumably with an emphasis on symptom management – rather than the recommended trauma-focussed interventions. Having said that, the recommendation for 90-minute sessions is not based on a strong empirical database and should not necessarily preclude the use of trauma-focussed interventions in shorter (e.g., one hour) sessions.

## **Potential implications**

Several implications are apparent. First, there is an urgent need for a comprehensive assessment of the economic burden associated with PTSD. Such research would provide the platform for identifying, measuring and valuing the private and social costs associated with PTSD.

Second, rigorous research is required to ascertain the cost-effectiveness of different interventions identified by the systematic review and recommended as treatment options. Of particular interest would be a study that looks at each recommendation if delivered as first, second or third line treatment, and is then able to identify the optimal package of cost-effective interventions. Given the impact of PTSD on morbidity and quality of life, it is particularly important that the economic evaluation uses a measure of disease burden as the outcome (i.e., disability-adjusted life year (DALY), quality-adjusted life year (QALY), years of life lost due to disability (YLD)).

Third, an assessment of current financing arrangements for treating ASD and PTSD should be conducted to ensure that adequate resources are provided. This strategy should complement the economic evaluation approach to ensure that the full spectrum of treatment options is evaluated and costed.

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