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## Treating PTSD in cancer patients

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# Treating PTSD in cancer patients

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## Abstract

Post-traumatic Stress Disorder (PTSD) has been found in patients in a number of diseases. However, the recognition of symptoms and categorisation of the disorder is still controversial and not universally agreed amongst clinicians and researchers. This paper presents the debate and how the symptoms of PTSD may be usefully treated in patients surviving cancer.

## Introduction

A meta-analysis of psychological treatments for PTSD found that exposure-based therapies was the most effective in reducing symptoms of PTSD (Van Etten & Taylor, 1998). Rauch, Eftekhari and Ruzek (2012) report exposure therapy is recommended as first-line treatment for PTSD by a number of organizations, including the National Institute for Clinical Excellence (NICE) (2005) and the International Society of Traumatic Stress Studies.

Ehlers and colleagues (2005) explain the improved effectiveness of cognitive based therapies over relaxation approaches as due to the cognitive restructuring of trauma memories that occurs. Although relaxation approaches are effective in allowing individuals to manage the stress related to PTSD, they do not address the underlying mechanisms that are causing the anxiety to be repeatedly experienced.

Frye and Spates (2012) also highlight concerns of the use of prolonged exposure in PTSD treatment. Whilst having much support from the research of its effectiveness, prolonged exposure can result in exacerbation of symptoms, increased dropout rates and poor adherence to treatment in those who are unwilling or unprepared to confront trauma-related memories. Alternative to supportive therapies, Frye and Spates (2012) draw attention to using mindfulness and emotional regulation techniques to confront trauma related anxiety.

Research has shown that mindfulness based therapy programmes can facilitate significant improvements in PTSD symptoms in war veterans (Kearney, et al., 2012). Significant benefits of mindfulness based interventions on PTSD symptoms Disorder have also

been found in samples of refugees (Hinton, et al., 2013), fire-fighters (Smith, et al., 2011) and domestic abuse victims (Dutton, et al., 2013).

A qualitative study in breast cancer patients found positive experiences from the therapy were often reported; specifically being calmer and more aware, coping with stress, anxiety and panic, being more accepting of their situation, and improving their personal relationships (Hoffman, Ersser & Hopkinson, 2012).

Tests of the efficacy of Acceptance and Commitment Therapy (ACT) in PTSD are limited to a few case studies in the literature; however, these initial studies support the use of ACT as an effective, alternative way of understanding and approaching PTSD treatment (Thompson, 2013; Thompson, Luoma & LeJeune 2013).

Using a sample of cancer patients, Feros and colleagues (2013) found that ACT significantly improved their quality of life, self-reported distress and mood disturbances through increased acceptance of unpleasant thoughts and feelings related to the cancer experience. ACT may be useful to consider as a treatment for PTSD in cancer patients, as, rather than focussing on a specific trauma, it could be used to improve acceptance of various aspects of cancer diagnosis and treatment that contribute to PTSD development and maintenance.

There is limited research on psychological therapies that have been developed primarily for dealing with cancer. The most widely reported is Cognitive-Behavioural Stress Management (CBSM) - a therapy programme for treating anxiety that has been designed specifically for cancer patients (Antoni, et al., 2006). CBSM involves 10 weekly structured sessions delivered in a closed, small group format (up to 8 people), with relaxation homework exercises assigned for between sessions. It includes aspects of cognitive restructuring alongside relaxation and anxiety management training, to facilitate adjustment and reduce general distress in people being treated for cancer. Trials of CBSM have found it significantly reduces intrusive thoughts related to cancer, measures of anxiety, and emotional distress (Antoni, et al., 2006), and has even been found by Antoni and colleagues (2009) to improve physiological measures of immunity and stress in a breast cancer sample.

A CBSM group programme was tested by Beatty and

Koczwara (2010) in a study that included PTSD symptom clusters among its outcome measures. The study found improvements in overall PTSD symptoms; however, the CBSM programme did not influence levels of cognitive avoidance. Qualitative reports from the participants identified obtaining skills in relaxation and cognitive restructuring, as well as acquiring social support, as the main benefits of the programme. The study is limited by a small sample size, but this allows it to provide detailed, personal perspectives on the programmes benefits.

A review of psychosocial interventions for adults living with cancer by Stanton and colleagues (2013) found that the greatest mediators for improving well-being in cancer patients were altering negative cognitions, increasing self-efficacy for using coping strategies, improving psychological and physical symptoms related to the cancer (such as pain and mood disturbances), and improving other psychosocial resources such as self-esteem. There is a large similarity between these factors for general cancer therapy interventions and PTSD specific interventions, specifically altering cognitions and improving symptoms of mood disturbance, suggesting that standard PTSD treatments may already be appropriate for cancer samples. However this research does not consider the unique aspects of cancer related trauma that may be an obstacle to successful treatment of PTSD, which will be discussed in a later section of this review.

Levine, Eckhardt and Targ (2005) compared an unstructured psycho-educational support group to an intensive lifestyle change and group support programme with elements of meditation and imagery, using 181 breast cancer patients as the sample. The results showed that only the unstructured support group resulted in significant reductions in re-experiencing and avoidance symptoms of PTSD. The results suggest that patient-lead therapy approaches may result in better adjustment to trauma, perhaps due to targeting specific aspects that are relevant to them as individuals rather than unspecified training in coping mechanisms.

One drawback to investigating treatment options for cancer patients experiencing PTSD is the lack of PTSD research that focuses specifically on cancer samples. The majority of research that investigates psychological interventions in cancer patients focuses on improving overall emotional distress and coping abilities as the main outcomes. A meta-analysis of psycho-social interventions in a sample of breast cancer patients by Zimmermann, Heinrichs and Baucom (2007) found that psycho-educational

interventions were actually more efficacious in reducing emotional distress than Cognitive Behaviour Therapy (CBT), relaxation, mindfulness and supportive approaches. The authors however emphasise that psycho-education is more helpful at the beginning of therapy and will be specifically tailored to the type and phase of cancer, whereas CBT encompasses a broad range of skills that contribute mainly to the long-term recovery from all types of cancer treatment. Due to the chronic nature of PTSD, and the fact it cannot be diagnosed before symptoms present for at least 1 month, therapies such as CBT that focus on longer term recovery would be more appropriate for treating PTSD specifically in cancer patients. As shown by the research on PTSD in general, the more intensive therapies that focus on addressing the emotional and cognitive aspects of the specific trauma generally produced better outcomes in terms of PTSD symptom reduction compared to supportive approaches that aim to improve general coping abilities.

Frye and Spates (2012) identified mindfulness approaches as an alternative to prolonged exposure due a number of concerns discussed earlier. They however suggest that rather than replacing prolonged exposure as a therapy approach, mindfulness training could be used to aid the patient in withstanding the emotional reactions faced in the course of exposure therapy.

Psychological therapies that aim to expose the patient to reminders of the traumatic event rely on focussing on the initial traumatic event that is responsible for the subsequent distress. The traumatic event may be relatively clear in cases involving road traffic accidents or violent assaults, for example, however the specificity of the traumatic event in cancer patients can be more complex. Although some of these factors may not objectively be life-threatening, a diagnosis of cancer is often perceived as potentially fatal by the patient (Elklit & Blum, 2011) and would therefore meet the DSM diagnostic criteria for a traumatic event. However unlike other traumatic events, cancer patients are relatively in control of the illness during treatment, and have forewarning and are able to prepare for further traumatic events such as surgery (Mehnert & Koch, 2007). The onset of PTSD in cancer patients may therefore be due to a build-up of moderate stressors over time, rather than one distinct traumatic event.

The difficulties in identifying the origin of the trauma experienced in cancer may undermine the potential of exposure-based therapies in treating related PTSD, as these rely on exposing the patient to specific moments of a traumatic event. Other cognitive or mindfulness

based therapies that aim to improve acceptance and coping abilities to treat PTSD may be more relevant in cases where identifying the origins of the trauma are made difficult by the complexity of the cancer experience. A potential benefit of cancer related PTSD is that patients know in advance of potentially traumatic events, such as surgery, and may be able to prepare for these specifically through psychological therapy in order to reduce the event associated distress.

Due to the nature and degree of a diagnosis of cancer and subsequent treatment, cancer patients can present with a range of psychological disorders, with or without a diagnosis of PTSD. NICE (2004) report that 1 in 10 cancer patients will display psychological symptoms severe enough to warrant specialist intervention by psychiatric services, and approximately half of cancer patients will experience significant levels of depression or anxiety following cancer diagnosis.

Kangas, Henry and Bryant (2005) investigated the course of psychological disorders over 1 year from diagnosis of cancer in 49 patients. The study found all participants who met the criteria for an anxiety disorder (excluding PTSD and ASD) had a pre-morbid history of an anxiety disorder, suggesting a history of anxiety predisposes individuals to a recurrence of anxiety following a diagnosis of cancer. The incidence of anxiety in participants diagnosed with PTSD increased from 28.6 per cent 1 month post-diagnosis to 71.4 per cent 12 month post-diagnosis. In contrast, the majority of participants diagnosed with major depressive disorder (MDD) had developed it for the first time following cancer diagnosis, and the majority of the 71.4 per cent of participants diagnosed with PTSD and MDD continued to meet the diagnosis at 12 month post-diagnosis. Over a third of the sample had experienced substance and alcohol-related disorders prior to diagnosis; however no participant met the criteria for substance misuse disorders at 6 month and 12 month follow ups. The researchers suggest this is due to reducing their use following medical advice given during the course of cancer treatment.

Given the high rates of co-morbidity found in cancer patients suffering from PTSD, it may be necessary to apply a treatment approach that is able to tackle co-morbid problems effectively alongside PTSD symptoms. A CBT programme should therefore be easily adapted to address PTSD symptoms alongside co-morbid disorders commonly seen in cancer patients; however, Rauch and colleagues' (2012) review of exposure therapy found evidence that it is also able to effectively treat co-morbid symptoms including anxiety and depression alongside PTSD.

One of the main symptoms clusters of PTSD, intrusive re-experiencing, is characterised by distressing memories of a traumatic event. Whilst cancer patients are prone to re-experiencing past cancer experiences, a more common pattern is for cancer patients to experience intrusive fears about the future of their condition (Kangas, et al., 2005).

Fear of cancer recurrence (FCR) has been defined as the "degree of concern reported by subjects about the chances of cancer returning at a future time" (Hodges & Humphris, 2009). Rates of FCR from the research vary considerably, with prevalence estimates ranging from 22 – 99 per cent (Crist & Grunfeld, 2013). FCR is however one of the most commonly reported problems for patients suffering from a range of different cancers, and can persist long after cancer treatments have been completed (Simard, Savard & Ivers, 2010).

Whitaker, Brewin and Watson (2008) conducted a qualitative study investigating the content of intrusive thoughts through a structured interview, in a sample of 65 clinically anxious prostate cancer patients. They found that of the 19 types of intrusive thoughts reported across the sample, 12 were future orientated fears, compared to 3 that were of past events, 2 of present concerns, and 2 that were both past and future oriented. Reported intrusive cognitions represented general subjective threats related to cancer, rather than threats specific to their prognosis. These included FCR alongside other future oriented fears, such as fear of death, money worries, and the long-term implications of the cancer.

FCR is seen as a natural response to a realistic threat experienced by cancer patients, however high levels of FCR can result in the development of PTSD, as well as the perpetuation of maladaptive behaviours that can prolong PTSD, including avoidance behaviours and hyper-vigilance (Crist & Grundfeld, 2013). FCR therefore presents a strong barrier to psychological treatment of PTSD. PTSD is usually defined around a significant, single occurring traumatic event, such as a road traffic accident. As discussed earlier, the challenges in specifying a traumatic event in the complex experience of cancer can affect the approach to psychological therapy. However the fact that FCR is a common feature of PTSD in cancer may affect the patient's ability to reappraise the trauma, as cancer recurrence is a significant risk following initial cancer treatment. Kangas and colleagues (2005) suggest FCR may also explain the high co-morbidity of other anxiety disorders in cancer patients with PTSD, due to anticipatory fear being associated more with non-PTSD anxiety disorder diagnoses.

FCR presents a significant challenge to the

psychological treatment of PTSD in cancer patients. Exposing the patient to the traumatic aspects of their cancer experience may not be successful in reducing their emotional distress, since FCR would continually pose a realistic threat to the patient. Reappraising the fear would not be appropriate, since FCR poses a significant risk to patients who have already been treated for cancer.

One way FCR could be addressed in therapy is to direct attention to the present situation, as FCR refers to future worries. CBT should be appropriate for reducing FCR worries since it encourages patients to focus on the present situation, and attempts to facilitate more positive ways of thinking. Mindfulness techniques may also be appropriate for grounding patients in the present, in order to reduce future-oriented anxieties such as FCR.

A further barrier to psychological treatment of PTSD is presented when patients actually do experience a cancer recurrence. Elklit and Blum (2011) report that patients who develop PTSD following an initial cancer treatment are at increased risk of re-developing PTSD following a recurrence of cancer. Psychological treatment of PTSD may therefore need to be postponed whilst the patient receives medical treatment for a recurring cancer, or therapy may need to recommence following a successful treatment of PTSD after an initial cancer diagnosis, due to a cancer recurrence resulting in a second episode of PTSD.

Ehlers and colleagues (2005) state that symptoms of PTSD such as re-experiencing are commonly experienced by the majority of trauma survivors, as part of the natural recovery process from the traumatic event. Intrusive memories may not be sufficient to predict PTSD in the early stages following a trauma, and that it is only when intrusive memories are combined with symptoms of avoidance that PTSD can be predicted more accurately. Ehlers and colleagues (2005) were interested in what characteristics predicted longer term development of PTSD, and suggested that factors that predict the onset of PTSD symptoms were different from those that maintained them. Extending on emotional processing theories, the authors identified several personal characteristics that are predictive of PTSD symptoms 6 months to 1 year following the traumatic event. These are negative beliefs about the self or the world, negative interpretations of initial PTSD symptoms, negative interpretations of other people's responses following the trauma, and perceived permanent change. A meta-analysis by Ozer and colleagues (2003) identifying predictors of PTSD from the relevant literature also found negative emotions regarding the

trauma were a key predictor of PTSD development. They further add history of trauma or other psychological problems, and poor social support following the trauma as significant predictors.

Elklit and Blum (2011) conducted a study investigating PTSD symptoms in a sample of 64 breast cancer patients at a 1 year follow up after diagnosis, to establish factors that would predict the development of PTSD over time in cancer patients specifically. They found that at the 1 year follow up, 13 per cent of patients showed full symptoms for PTSD, compared to 7 per cent of patients at 6 weeks after diagnosis. Four factors were found to explain 65 per cent of the variance in PTSD severity: immature defence style (for example, use of repression or denial), an emotion focused coping style (as opposed to a problem focused style), avoidant behaviour, and negative affectivity. The authors highlight the importance of identifying these factors early in cancer treatment in order to prevent development of PTSD.

The findings from these studies highlight the importance of cognitive reappraisal in therapy, in order to address the negative attitudes towards various aspects of the trauma and the self. Developing the individual's coping abilities is also critical so the individual can manage the negative emotions they are experiencing.

A significant factor for PTSD development that has been found in various studies is lack of a social support network. Schmidt and Andrykowski (2004) conducted a study on a sample of breast cancer patients to investigate the effect of social variables on emotional processing and adjustment to breast cancer. The model suggests adaptation following a traumatic event occurs through cognitive and emotional processing, when facilitated through expression of related thoughts and feelings in a supportive social network. Trauma-related distress perpetuates if the individual fails to share and discuss thoughts and feelings related to the trauma with others. Schmidt and Andrykowski (2004) collected data from their sample through an online questionnaire which included measures of the impact of the trauma, social support and constraints, and emotional intelligence. The results supported the social-cognitive model in terms of the importance of social support in trauma adjustment, but added that the lack of a supportive social environment can be buffered by higher levels of emotional intelligence. Emotional intelligence was also found to be significantly associated with less depression, anxiety, and cancer-related avoidance. The authors acknowledge that patients who do have supportive social networks can still experience

significant levels of traumatic distress, possibly due to lower emotional intelligence, however developing emotional intelligence in cancer patients suffering from trauma may be an important aspect to consider in psychological therapy given these findings.

When examining individual characteristics that can predict PTSD development in cancer patients, a key area of research has investigated individuals who experience positive changes as a result of a traumatic event, as opposed to the typically negative reactions shown in PTSD. 'Post-Traumatic Growth' (PTG) was introduced by Tedeschi and Calhoun (1995) as "a positive cognitive process that is initiated to cope with traumatic events that extract an extreme cognitive and emotional toll". Despite the strong psychological impact of a traumatic event, research shows that some individuals often report positive life changes as a result. Research into PTG in cancer sufferers is still in its early stages, however initial evidence suggests that a diagnosis of cancer may serve as a catalyst for personal growth (Steel, Gamblin & Carr, 2008). When considering treatment options for PTSD in cancer patients; it may be important to observe what characteristics facilitate PTG rather than the development of PTSD, for people who have been diagnosed with the same life threatening illness.

Steel and colleagues (2008) measured PTG in 120 patients with hepatobiliary cancer using the Post-Traumatic Growth Inventory (PTGI), which measures PTG on 5 subscales; relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. They found that in line with previous research, PTG typically develops in the early stages of cancer diagnosis and treatment. The researchers added that PTG was more than just cognitive reappraisal or adaptive coping, and that PTG in patients resulted in observable positive behavioural changes, such as engaging in more positive health behaviours, for example, stopping smoking.

Qualitative research looking at PTG has highlighted the importance of willpower in cancer patients in not allowing their diagnosis to debilitate them; and altering their perspectives, in terms of self-understanding following their cancer journey as well as valuing their personal relationships (Turner & Cox, 2004). Connerty and Knott (2013) have identified several modifying factors that enabled cancer patients to experience PTG. These include having a strong support network of friends and family, gaining information about many aspects of the cancer experience in order to understand it fully, making positive lifestyle changes, and engaging in more physical activity.

When reviewing treatment options for PTSD it would

appear, given the contrast in the experience of PTG and of PTSD, that identifying ways to facilitate PTG would make a useful contribution to PTSD treatment planning. However Park, Chmielewski and Blank (2010) found that PTG did not moderate the level of intrusive thoughts experienced following cancer treatment. PTG did however moderate the effects of intrusive thoughts on positive and negative affect, meaning higher levels of intrusive thoughts were actually related to better adjustment in those with high levels of PTG. Jansen and colleagues (2011) also found there was no association between PTG and quality of life, although concluded that this is due to other determinants of quality of life other than the positive adaptation experienced in PTG.

The findings from Park and colleagues (2010) study is best explained by research from Joseph, Murphy and Regel (2012), who suggest the relationship between PTSD and PTG is curvilinear; in that greater PTSD is associated with greater PTG, but only until a point when the levels of PTSD become high enough that the individual is unable to effectively cope or process their experience. The researchers propose an affective-cognitive processing model of PTSD, based on theoretical principles that subjective appraisals are at the core of post-traumatic stress reactions, and that cognitive processing of a traumatic event is an important natural process in preventing PTSD development. The model includes several personality, social and psychological factors that can affect the facilitation of PTG, including coping style (task-focused, emotion focused or avoidance), emotional states, social-environmental contexts, and appraisal mechanisms (that is, whether the individual applies meaning and understanding to events when reflecting on them).

From this model Joseph and colleagues (2012) suggest several areas directed at therapeutic interventions to increase facilitation of PTG in those suffering with PTSD. The suggestions include; identifying social support processes that are impeding processing, engaging the client in exposure based interventions to promote reappraisal of the traumatic event, promoting helpful coping strategies, and reducing negative emotional states (such as through relaxation exercises). The paper emphasises the view that there may be no single therapy designed to treat PTSD that will effectively facilitate PTG.

## Discussion and Conclusions

The lessons for therapy that can be learned from examining the concept of PTG is that therapy

designed to treat PTSD may need to focus more on facilitating a positive adaptation to the traumatic event, rather than aiming to reduce the negative symptoms associated with PTSD. The research reviewed shows a complex yet close link between PTSD and PTG, that appears to be heavily influenced by the individual's appraisal and ability to process the traumatic event; utilising their own coping mechanisms and social support networks to not only effectively process their experience, but to use it to make positive and meaningful changes to their life. An individual's experience of a significant traumatic event will almost certainly involve strong psychological reactions, and efforts made in therapy to support the development of positive changes seen in PTG can help to reduce the suffering experienced in PTSD.

Another key contribution from this section of research is the importance of social support networks and personal relationships in helping the individual adapt to a traumatic event. This is something that may not necessarily be focused on in individual therapies designed primarily to assist the patient in processing the traumatic event, however may be an important aspect of their recovery. As suggested by Joseph and colleagues (2012), this will involve not only identifying and maintaining positive relationships, but identifying aspects of the individual's social life that may be impeding their recovery.

In applying these findings to specific therapies, the research on PTG supports aspects of exposure based therapies in treating PTSD, which focus on in vivo and imagination exposure in order to for the patient to reappraise the traumatic event. Prolonged exposure also includes psycho-education and emotional processing among its main therapeutic components, and has been found to effectively reduce PTSD symptoms as well as reduce negative emotions and perceptions (Rauch, Eftekhari & Ruzek, 2012); in line with findings from the research on PTG facilitation.

Another key aspect of PTG identified from the literature (Connery & Knott, 2013; Steel, et al., 2008) is the link between PTG in individuals and making positive changes to their lifestyle, which may be encouraged through therapies that actively apply psycho education to behavioural changes through homework assignments, such as CBT. Garland and colleagues (2007) found that an MBSR programme administered to cancer outpatients significantly improved measure of PTG, specifically through improvement in measures of stress, anger and mood disturbance. Group based programmes may also promote the development of an effective social support network.

Despite the extensive research that has been conducted on treating PTSD, little research has considered the treatment of PTSD in cancer patients specifically. There has been some debate as to whether PTSD is even a suitable diagnosis to explain the emotional distress encountered in cancer patients. Elklit and Blum (2011) suggest the diagnosis of PTSD in cancer patients is appropriate, since traumatic aspects of the cancer can be perceived as life threatening by the individual; they however suggest that the varying prevalence rates displayed in the research may be due to the unique aspects of PTSD presentation in cancer patients. In order to advise which approaches to PTSD treatment in cancer patients would be most relevant, it was deemed essential to consider any unique aspects of PTSD in cancer that may significantly affect the course of therapy; as well as individual characteristics in cancer patients that may increase vulnerability to PTSD, in order to advise areas that psychological treatments could target.

One of the initial problems in treating PTSD in cancer patients is the fact that the experience of cancer is often not defined by a single traumatic event; instead multiple aspects of cancer diagnosis and treatment can be perceived as traumatic (Mehnert & Koch, 2007). This poses an obstacle to prolonged exposure approaches to treatment, since they aim to expose the patient to specific aspects of a traumatic event in order to facilitate cognitive reappraisal. Considering this, in order to advise on first line treatment for PTSD in cancer patients specifically, research would have to be conducted to gain statistical data on the scale of cases of PTSD in cancer patients that do not have identifiable traumatic experiences that could be targeted through exposure. Elements of exposure may still be relevant in those patients who can identify specific traumatic stressors, however if the majority of cases are more complex than this, alternative approaches to therapy may be better placed, such as mindfulness based therapies or CBT.

Another aspect of cancer that can confound a diagnosis of PTSD is the high co-morbidity with other psychological disorders. PTSD cases are often accompanied by a range of other psychological disorders (Friedman, 2006), and this is particularly pertinent in cancer patients; as the adaptation to a diagnosis of cancer involves dealing with a range of difficult, often highly emotional issues (NICE, 2004). Despite the focus of exposure and other cognitive based therapies being treatment of the symptoms of PTSD in these cases, research suggests they also aid improvement in other axis I disorders commonly

experienced in cancer patients, including depression and anxiety disorders other than PTSD (Rauch, Eftekhari & Ruzek, 2012). Specific PTSD therapies should therefore already be able to deal with other psychological problems encountered in cancer patients. The key point of this area of enquiry should be that PTSD must be considered amongst the overall, complex presentation of emotional and psychological problems encountered in cancer cases, and that any therapy aimed at treating PTSD in cancer patients must also pay consideration to co-morbid problems.

Further research may wish to focus on ACT as an alternative approach to PTSD in cancer patients. Initial research of ACT in PTSD is limited to case study data, however shows promising efficacy in treatment (Thompson, Luoma & LeJeune, 2013). Furthermore, Feros and colleagues (2013) found that in cancer patients, ACT significantly improved quality of life, self-reported distress and mood disturbances. ACT may therefore be able to address the traumatic aspects of cancer alongside promoting positive adaptation to a diagnosis of cancer in an effective manner. In addition ACT has also been adapted to treat depression and anxiety, providing further support that it could effectively address the range of psychological problems experienced in cancer.

A potentially large barrier to PTSD treatment in cancer patients is FCR. Most trauma focused therapies would be able to operate under the assumption that the traumatic event has passed, although the patient is still experiencing the related emotional distress. However with a complex disease like cancer FCR poses a very real threat, even in those individuals whose physical cancer treatment has been successful. Alongside issues with specifying the key traumatic event in cancer, exposure therapy may not be effective in reducing the distress that is posed by FCR as it focuses on intrusive thoughts related to past traumatic memories. Therapy approaches that develop general coping abilities and promote positive growth following the trauma, such as cognitive based therapies or ACT, may reduce the intrusiveness of FCR related thoughts, as well as possibly reduce the risk of a relapse of PTSD symptoms should a recurrence of cancer occur.

There is a growing body of evidence into the concept of PTG, and it is particularly relevant to cancer as it promotes positive health behavioural changes as well as adaptation to and reappraisal of the trauma of cancer (Steel, et al., 2008). Joseph and colleagues' (2012) affective-cognitive processing model gives detailed insight into how PTG is experienced and can be promoted in trauma patients. Their paper highlights

the strong relationship between PTSD symptoms and PTG; typical symptoms of PTSD are part of the natural recovery from a traumatic event. A positive outlook however can be facilitated through several factors, including improving the individuals coping abilities and aiding adaptive appraisal of the traumatic event. Other key factors for PTG development identified include trauma related emotional states and the individuals social support network.

As opposed to primarily addressing the negative symptoms of PTSD, facilitating PTG in cancer patients may be a more relevant way to approach psychological treatment, given it can promote an ongoing positive adaptation to cancer. One of the key areas of Joseph and colleagues' (2012) affective-cognitive processing model of PTG is appraisal of the traumatic event; the focus of exposure based therapies. Hagenars and van Minnen (2010) found that PTG increased during the course of exposure therapy and resulted in a reduction of PTSD symptoms. However better treatment outcome was predicted by better pre-treatment PTG, suggesting factors occurring before exposure therapy may play a more important role. One drawback of exposure therapy in PTSD treatment in cancer patients is the conceptual model of exposure therapy states that individual's will generally not be considered for exposure therapy until at least 3 months have passed following the traumatic event, in order to allow time for natural psychological healing.

Research has found that PTG normally develops early in the diagnosis and treatment of cancer, with studies reporting positive changes occurring following cancer diagnosis in 50 – 90 per cent of patients (Steel, et al., 2008). Zimmerman and colleagues (2007) also found that intervention efficacy is greater overall for cancer patients in the earlier stages of cancer, and the NICE (2004) guidelines on cancer highlight the importance of early psychological intervention so that patient's psychological needs is not missed. PTSD is also commonly co-morbid with other psychological disorders in cancer patients, including anxiety and depression (Kangas, et al., 2005), which would likely benefit from psychological intervention earlier than 3 months post trauma.

An important contextual factor that has been found to predict recovery from PTSD in cancer patients is having an effective social support network. Schmidt and Andrykowski (2004) found support for a social-cognitive processing model of trauma adaptation, which suggests a social support network is essential in order to facilitate cognitive reappraisal through discussion of aspects of the traumatic events.

Social support is also a key component of Joseph and colleagues' (2012) affective-cognitive processing model of PTG, and they suggest therapy should encourage patients to obtain sources of support, as well as identify social processes that might be impeding processing of the trauma.

The initial research into CBSM interventions for cancer patients suggests it is effective for reducing symptoms of PTSD as well as improving stress handling abilities. Penedo and colleagues (2006) also found that CBSM significantly improved PTG and quality of life in a sample of 191 prostate cancer patients, changes that were mediated through development of stress management skills. One key aspect of CBSM is the fact that it is a group based intervention. Many PTSD interventions are individual therapies, however social support and personal relationships have been found in numerous studies to be an important factor in recovery from PTSD in cancer (Schmidt & Andrykowski, 2004; Turner & Cox, 2004). Decreasing social isolation is one of the key components of CBSM. and a common subjectively reported benefit of CBSM in Beatty and Koczwara's (2010) study was acquiring social support, suggesting the group therapy design is very appropriate for cancer patients. Research on CBSM has been limited to breast and prostate cancer samples (Beatty & Koczwara, 2010), and further research should aim to investigate its efficacy in other types of cancer.

Although exposure based therapies are appropriate for reducing trauma related distress in cancer patients, they are likely to not address the range of complex psychological needs that cancer patients will face during their treatment and recovery. Depression and anxiety disorders are very common in cancer patients with or without PTSD, and cancer has strong personal and emotional implications that may not be addressed in PTSD specific therapies. Psychological therapies designed for cancer patients must consider the degree and range of psychological and emotional problems experienced.

The research has highlighted the importance of early psychological intervention for cancer patients with significant emotional distress, in order to facilitate positive coping, buffer against further traumatic aspects of cancer such as surgery, and ensure cancer patients who need support are identified during treatment and receive necessary interventions. Another reason exposure therapy may not be the primary approach to therapy for cancer patients with PTSD is that it is not administered until 3 months post trauma. Although exposure therapy may still be beneficial after this time period, other supportive

therapies should be administered to those who show early signs of emotional or traumatic distress. Mindfulness and stress management groups have been evidenced as effective for addressing a range of psychological problems in cancer patients, and would be appropriate as initial easily administered therapy interventions. As PTSD will not be diagnosed until 1 month post trauma, this approach will be beneficial to any cancer patients who show early signs of distress and the potential to develop acute psychological problems.

An important suggestion for approaching PTSD therapy in cancer patients would be to aim to facilitate PTG, rather than to diminish symptoms of PTSD. Combining the research in this area has identified an evidenced link between symptoms of PTSD and PTG, suggesting therapy should address the coping style and ability of patients in order to promote a positive, healthier appraisal of PTSD symptoms related to cancer. This positive adaptation should also be able to buffer against future orientated fears related to cancer. Aspects key to PTG development are early adaptation and social support, which would further support the use of early administered, supportive groups utilising mindfulness or stress management techniques.

Psychological practitioners should be aware of the unique aspects of PTSD presentation in cancer identified in this review that present obstacles in treatment. These include FCR, and other future-oriented fears that are common in cancer patients, and physiological effects of cancer treatment confounding the patient's psychological presentation. Strategies to overcome these problems have been suggested in the review, however further research should aim to establish the extent to which these problems impact on PTSD treatment in cancer patients and test the effectiveness of the discussed strategies, as well as propose other ways to overcome these obstacles.

The research into CBSM for cancer patients shows promising evidence for its efficacy in treating symptoms of PTSD as well as general psychological distress. It also bridges the gap between individual trauma focussed therapies and stress management support groups. Further research should be conducted to conclude its efficacy in a range of cancer types, and in other psychological outcomes relevant to cancer, such as measures of depression and anxiety. Research into other group based PTSD therapies for cancer patients would also be suggested, due to their ability to facilitate the development of a social support network.

Social support has been identified from this review as

a key factor in cancer recovery. Research has highlighted its importance facilitating PTG and enabling cognitive reappraisal of traumatic events, and is therefore a key area that should be addressed in psychological therapy for cancer patients. Social support has been identified as a strong benefit of group based therapies, and this would further support the suggestion to implement group based therapies in cancer therapy programmes.

As a group format may not be suitable for targeting individual traumatic memories, a recommendation would be for individual trauma focussed therapies to be administered alongside a supportive group therapy specifically for cancer patients, or mindfulness based interventions that can improve overall coping and stress management abilities. The positive aspects of different therapy approaches could then be utilised together to improve functioning in a range of relevant areas. PTG is facilitated through a mixture of trauma reappraisal, developing coping abilities and improving social support networks; and any single therapy may not be able to achieve all of these. Supportive groups could be administered early in presentation of psychological problems, and the outcome of these programmes for cancer patients can inform whether further exposure therapy is required, as it becomes clearer whether a diagnosis of PTSD will be applicable to the patient.

Further research should aim to identify the efficacy of PTSD therapies, such as prolonged exposure, in treating cancer patients specifically, including outcomes for other commonly co-morbid psychological disorders and the patients perceived adaptation following cancer treatment. This will inform whether the development of cancer specific therapies is necessary, although the findings from this review suggest alternative approaches are likely to be required in order to consider the range of challenges identified. Furthermore research on alternative approaches to therapy for cancer patients, such as ACT and CBSM, suggest they may be more appropriate than, and as effective, as typically administered exposure therapies. The lessons for therapy that can be learned from examining the concept of PTG is that therapy designed to treat PTSD may need to focus more on facilitating a positive adaptation to the traumatic event, rather than aiming to reduce the negative symptoms associated with PTSD. The research reviewed shows a complex yet close link between PTSD and PTG, that appears to be heavily influenced by the individual's appraisal and ability to process the traumatic event; utilising their own coping mechanisms and social support networks

to not only effectively process their experience, but to use it to make positive and meaningful changes to their life. An individual's experience of a significant traumatic event will almost certainly involve strong psychological reactions, and efforts made in therapy to support the development of positive changes seen in PTG can help to reduce the suffering experienced in PTSD.

Another key contribution from this section of research is the importance of social support networks and personal relationships in helping the individual adapt to a traumatic event. This is something that may not necessarily be focused on in individual therapies designed primarily to assist the patient in processing the traumatic event, however may be an important aspect of their recovery. As suggested by Joseph and colleagues (2012), this will involve not only identifying and maintaining positive relationships, but identifying aspects of the individual's social life that may be impeding their recovery.

In applying these findings to specific therapies, the research on PTG supports aspects of exposure based therapies in treating PTSD, which focus on in vivo and imagination exposure in order to for the patient to reappraise the traumatic event. Prolonged exposure also includes psycho-education and emotional processing among its main therapeutic components, and has been found to effectively reduce PTSD symptoms as well as reduce negative emotions and perceptions (Rauch, Eftekhari & Ruzek, 2012); in line with findings from the research on PTG facilitation.

Another key aspect of PTG identified from the literature (Connery & Knott, 2013; Steel, et al., 2008) is the link between PTG in individuals and making positive changes to their lifestyle, which may be encouraged through therapies that actively apply psycho education to behavioural changes through homework assignments, such as CBT. Garland and colleagues (2007) found that an MBSR programme administered to cancer outpatients significantly improved measure of PTG, specifically through improvement in measures of stress, anger and mood disturbance. Group based programmes may also promote the development of an effective social support network.

Despite the extensive research that has been conducted on treating PTSD, little research has considered the treatment of PTSD in cancer patients specifically. There has been some debate as to whether PTSD is even a suitable diagnosis to explain the emotional distress encountered in cancer patients. Elklit and Blum (2011) suggest the diagnosis of PTSD in cancer patients is appropriate, since traumatic

aspects of the cancer can be perceived as life threatening by the individual; they however suggest that the varying prevalence rates displayed in the research may be due to the unique aspects of PTSD presentation in cancer patients. In order to advise which approaches to PTSD treatment in cancer patients would be most relevant, it was deemed essential to consider any unique aspects of PTSD in cancer that may significantly affect the course of therapy; as well as individual characteristics in cancer patients that may increase vulnerability to PTSD, in order to advise areas that psychological treatments could target.

One of the initial problems in treating PTSD in cancer patients is the fact that the experience of cancer is often not defined by a single traumatic event; instead multiple aspects of cancer diagnosis and treatment can be perceived as traumatic (Mehnert & Koch, 2007). This poses an obstacle to prolonged exposure approaches to treatment, since they aim to expose the patient to specific aspects of a traumatic event in order to facilitate cognitive reappraisal. Considering this, in order to advise on first line treatment for PTSD in cancer patients specifically, research would have to be conducted to gain statistical data on the scale of cases of PTSD in cancer patients that do not have identifiable traumatic experiences that could be targeted through exposure. Elements of exposure may still be relevant in those patients who can identify specific traumatic stressors, however if the majority of cases are more complex than this, alternative approaches to therapy may be better placed, such as mindfulness based therapies or CBT.

Another aspect of cancer that can confound a diagnosis of PTSD is the high co-morbidity with other psychological disorders. PTSD cases are often accompanied by a range of other psychological disorders (Friedman, 2006), and this is particularly pertinent in cancer patients; as the adaptation to a diagnosis of cancer involves dealing with a range of difficult, often highly emotional issues (NICE, 2004). Despite the focus of exposure and other cognitive based therapies being treatment of the symptoms of PTSD in these cases, research suggests they also aid improvement in other axis I disorders commonly experienced in cancer patients, including depression and anxiety disorders other than PTSD (Rauch, Eftekhari & Ruzek, 2012). Specific PTSD therapies should therefore already be able to deal with other psychological problems encountered in cancer patients. The key point of this area of enquiry should be that PTSD must be considered amongst the overall, complex presentation of emotional and psychological

problems encountered in cancer cases, and that any therapy aimed at treating PTSD in cancer patients must also pay consideration to co-morbid problems.

Further research may wish to focus on ACT as an alternative approach to PTSD in cancer patients. Initial research of ACT in PTSD is limited to case study data, however shows promising efficacy in treatment (Thompson, Luoma & LeJeune, 2013). Furthermore, Feros and colleagues (2013) found that in cancer patients, ACT significantly improved quality of life, self-reported distress and mood disturbances. ACT may therefore be able to address the traumatic aspects of cancer alongside promoting positive adaptation to a diagnosis of cancer in an effective manner. In addition ACT has also been adapted to treat depression and anxiety, providing further support that it could effectively address the range of psychological problems experienced in cancer.

A potentially large barrier to PTSD treatment in cancer patients is FCR. Most trauma focused therapies would be able to operate under the assumption that the traumatic event has passed, although the patient is still experiencing the related emotional distress. However with a complex disease like cancer FCR poses a very real threat, even in those individuals whose physical cancer treatment has been successful. Alongside issues with specifying the key traumatic event in cancer, exposure therapy may not be effective in reducing the distress that is posed by FCR as it focuses on intrusive thoughts related to past traumatic memories. Therapy approaches that develop general coping abilities and promote positive growth following the trauma, such as cognitive based therapies or ACT, may reduce the intrusiveness of FCR related thoughts, as well as possibly reduce the risk of a relapse of PTSD symptoms should a recurrence of cancer occur.

There is a growing body of evidence into the concept of PTG, and it is particularly relevant to cancer as it promotes positive health behavioural changes as well as adaptation to and reappraisal of the trauma of cancer (Steel, et al., 2008). Joseph and colleagues' (2012) affective-cognitive processing model gives detailed insight into how PTG is experienced and can be promoted in trauma patients. Their paper highlights the strong relationship between PTSD symptoms and PTG; typical symptoms of PTSD are part of the natural recovery from a traumatic event. A positive outlook however can be facilitated through several factors, including improving the individuals coping abilities and aiding adaptive appraisal of the traumatic event. Other key factors for PTG development identified include trauma related emotional states and the individuals

social support network.

As opposed to primarily addressing the negative symptoms of PTSD, facilitating PTG in cancer patients may be a more relevant way to approach psychological treatment, given it can promote an ongoing positive adaptation to cancer. One of the key areas of Joseph and colleagues' (2012) affective-cognitive processing model of PTG is appraisal of the traumatic event; the focus of exposure based therapies. Hagenaars and van Minnen (2010) found that PTG increased during the course of exposure therapy and resulted in a reduction of PTSD symptoms. However better treatment outcome was predicted by better pre-treatment PTG, suggesting factors occurring before exposure therapy may play a more important role. One drawback of exposure therapy in PTSD treatment in cancer patients is the conceptual model of exposure therapy states that individual's will generally not be considered for exposure therapy until at least 3 months have passed following the traumatic event, in order to allow time for natural psychological healing.

Research has found that PTG normally develops early in the diagnosis and treatment of cancer, with studies reporting positive changes occurring following cancer diagnosis in 50 – 90 per cent of patients (Steel, et al., 2008). Zimmerman and colleagues (2007) also found that intervention efficacy is greater overall for cancer patients in the earlier stages of cancer, and the NICE (2004) guidelines on cancer highlight the importance of early psychological intervention so that patient's psychological needs is not missed. PTSD is also commonly co-morbid with other psychological disorders in cancer patients, including anxiety and depression (Kangas, et al., 2005), which would likely benefit from psychological intervention earlier than 3 months post trauma.

An important contextual factor that has been found to predict recovery from PTSD in cancer patients is having an effective social support network. Schmidt and Andrykowski (2004) found support for a social-cognitive processing model of trauma adaptation, which suggests a social support network is essential in order to facilitate cognitive reappraisal through discussion of aspects of the traumatic events. Social support is also a key component of Joseph and colleagues' (2012) affective-cognitive processing model of PTG, and they suggest therapy should encourage patients to obtain sources of support, as well as identify social processes that might be impeding processing of the trauma.

The initial research into CBSM interventions for cancer patients suggests it is effective for reducing symptoms

of PTSD as well as improving stress handling abilities. Penedo and colleagues (2006) also found that CBSM significantly improved PTG and quality of life in a sample of 191 prostate cancer patients, changes that were mediated through development of stress management skills. One key aspect of CBSM is the fact that it is a group based intervention. Many PTSD interventions are individual therapies, however social support and personal relationships have been found in numerous studies to be an important factor in recovery from PTSD in cancer (Schmidt & Andrykowski, 2004; Turner & Cox, 2004). Decreasing social isolation is one of the key components of CBSM. and a common subjectively reported benefit of CBSM in Beatty and Koczwara's (2010) study was acquiring social support, suggesting the group therapy design is very appropriate for cancer patients. Research on CBSM has been limited to breast and prostate cancer samples (Beatty & Koczwara, 2010), and further research should aim to investigate its efficacy in other types of cancer.

Although exposure based therapies are appropriate for reducing trauma related distress in cancer patients, they are likely to not address the range of complex psychological needs that cancer patients will face during their treatment and recovery. Depression and anxiety disorders are very common in cancer patients with or without PTSD, and cancer has strong personal and emotional implications that may not be addressed in PTSD specific therapies. Psychological therapies designed for cancer patients must consider the degree and range of psychological and emotional problems experienced.

The research has highlighted the importance of early psychological intervention for cancer patients with significant emotional distress, in order to facilitate positive coping, buffer against further traumatic aspects of cancer such as surgery, and ensure cancer patients who need support are identified during treatment and receive necessary interventions. Another reason exposure therapy may not be the primary approach to therapy for cancer patients with PTSD is that is not administered until 3 months post trauma. Although exposure therapy may still be beneficial after this time period, other supportive therapies should be administered to those who show early signs of emotional or traumatic distress. Mindfulness and stress management groups have been evidenced as effective for addressing a range of psychological problems in cancer patients, and would be appropriate as initial easily administered therapy interventions. As PTSD will not be diagnosed until 1 month post trauma, this approach will be beneficial to

any cancer patients who show early signs of distress and the potential to develop acute psychological problems.

An important suggestion for approaching PTSD therapy in cancer patients would be to aim to facilitate PTG, rather than to diminish symptoms of PTSD. Combining the research in this area has identified an evidenced link between symptoms of PTSD and PTG, suggesting therapy should address the coping style and ability of patients in order to promote a positive, healthier appraisal of PTSD symptoms related to cancer. This positive adaptation should also be able to buffer against future orientated fears related to cancer. Aspects key to PTG development are early adaptation and social support, which would further support the use of early administered, supportive groups utilising mindfulness or stress management techniques.

Psychological practitioners should be aware of the unique aspects of PTSD presentation in cancer identified in this review that present obstacles in treatment. These include FCR, and other future-oriented fears that are common in cancer patients, and physiological effects of cancer treatment confounding the patient's psychological presentation. Strategies to overcome these problems have been suggested in the review, however further research should aim to establish the extent to which these problems impact on PTSD treatment in cancer patients and test the effectiveness of the discussed strategies, as well as propose other ways to overcome these obstacles.

The research into CBSM for cancer patients shows promising evidence for its efficacy in treating symptoms of PTSD as well as general psychological distress. It also bridges the gap between individual trauma focussed therapies and stress management support groups. Further research should be conducted to conclude its efficacy in a range of cancer types, and in other psychological outcomes relevant to cancer, such as measures of depression and anxiety. Research into other group based PTSD therapies for cancer patients would also be suggested, due to their ability to facilitate the development of a social support network.

Social support has been identified from this review as a key factor in cancer recovery. Research has highlighted its importance facilitating PTG and enabling cognitive reappraisal of traumatic events, and is therefore a key area that should be addressed in psychological therapy for cancer patients. Social support has been identified as a strong benefit of group based therapies, and this would further support the suggestion to implement group based therapies in

cancer therapy programmes.

As a group format may not be suitable for targeting individual traumatic memories, a recommendation would be for individual trauma focussed therapies to be administered alongside a supportive group therapy specifically for cancer patients, or mindfulness based interventions that can improve overall coping and stress management abilities. The positive aspects of different therapy approaches could then be utilised together to improve functioning in a range of relevant areas. PTG is facilitated through a mixture of trauma reappraisal, developing coping abilities and improving social support networks; and any single therapy may not be able to achieve all of these. Supportive groups could be administered early in presentation of psychological problems, and the outcome of these programmes for cancer patients can inform whether further exposure therapy is required, as it becomes clearer whether a diagnosis of PTSD will be applicable to the patient.

Further research should aim to identify the efficacy of PTSD therapies, such as prolonged exposure, in treating cancer patients specifically, including outcomes for other commonly co-morbid psychological disorders and the patients perceived adaptation following cancer treatment. This will inform whether the development of cancer specific therapies is necessary, although the findings from this review suggest alternative approaches are likely to be required in order to consider the range of challenges identified. Furthermore research on alternative approaches to therapy for cancer patients, such as ACT and CBSM, suggest they may be more appropriate than, and as effective, as typically administered exposure therapies.

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## Reviews

### Review 1

#### Review Title: **Treating PTSD in cancer patients. A Critical Review**

Posted by Mr. Brian Thompson on 24 Nov 2013 07:17:51 PM GMT

1	Is the subject of the article within the scope of the subject category?	
2	Are the interpretations / conclusions sound and justified by the data?	
3	Is this a new and original contribution?	
4	Does this paper exemplify an awareness of other research on the topic?	
5	Are structure and length satisfactory?	
6	Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?	
7	Can you suggest any reductions in the paper, or deletions of parts?	
8	Is the quality of the diction satisfactory?	
9	Are the illustrations and tables necessary and acceptable?	
10	Are the references adequate and are they all necessary?	
11	Are the keywords and abstract or summary informative?	

**Rating:** 9

**Comment:**

I enjoyed reading the paper and it is a valued contribution to the area of cancer treatment. PTSD is still not fully understood in many diseases, and cancer survivors are often not heard in the same context as other diseases because of the special and often individual nature of their battles with the disease. Yet their experience of PTSD is often similar to people who have undergone other traumas.

**Competing interests:** None

**Invited by the author to make a review on this article? :** Yes

**Experience and credentials in the specific area of science:**

Rehabilitation assisted environments and instrument control to support such environments.

**Publications in the same or a related area of science:** No

**References:**

None

**How to cite:** Thompson B. Treating PTSD in cancer patients. A Critical Review [Review of the article 'Treating PTSD in cancer patients' by Thompson S]. WebmedCentral Oncology 1970;4(11):WMCRW002898

## Review 2

### Review Title: [Treating PTSD...A Review](#)

Posted by Ms. Natalie Jones on 23 Nov 2013 07:51:53 PM GMT

1	Is the subject of the article within the scope of the subject category?	
2	Are the interpretations / conclusions sound and justified by the data?	
3	Is this a new and original contribution?	
4	Does this paper exemplify an awareness of other research on the topic?	
5	Are structure and length satisfactory?	
6	Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?	
7	Can you suggest any reductions in the paper, or deletions of parts?	
8	Is the quality of the diction satisfactory?	
9	Are the illustrations and tables necessary and acceptable?	
10	Are the references adequate and are they all necessary?	
11	Are the keywords and abstract or summary informative?	

**Rating:** 9

**Comment:**

Excellent paper, well written. I have read papers on similar work by these authors and believe they know how to write an informative paper.

**Invited by the author to make a review on this article? :** Yes

**Experience and credentials in the specific area of science:** Rehabilitation experience.

**Publications in the same or a related area of science:** No

**How to cite:** Jones N.Treating PTSD...A Review[Review of the article 'Treating PTSD in cancer patients ' by Thompson S].WebmedCentral Oncology 1970;4(11):WMCRW002897

## Review 3

### Review Title: [Treating PTSD in cancer patients](#)

Posted by Dr. Nigel North on 22 Nov 2013 04:00:53 PM GMT

1	Is the subject of the article within the scope of the subject category?	
2	Are the interpretations / conclusions sound and justified by the data?	
3	Is this a new and original contribution?	
4	Does this paper exemplify an awareness of other research on the topic?	
5	Are structure and length satisfactory?	
6	Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?	
7	Can you suggest any reductions in the paper, or deletions of parts?	
8	Is the quality of the diction satisfactory?	
9	Are the illustrations and tables necessary and acceptable?	
10	Are the references adequate and are they all necessary?	
11	Are the keywords and abstract or summary informative?	

**Rating:** 8

**Comment:**

None

**Competing interests:** None

**Invited by the author to make a review on this article?** : Yes

**Experience and credentials in the specific area of science:**

I have a PhD in this area of cancer care

**Publications in the same or a related area of science:** No

**How to cite:** North N.Treating PTSD in cancer patients[Review of the article 'Treating PTSD in cancer patients ' by Thompson S].WebmedCentral Oncology 1970;4(11):WMCRW002894

## Review 4

### Review Title: : PTSD treatment in cancer patients

Posted by Prof. Heidrun Karlic on 20 Nov 2013 11:19:17 AM GMT

1	Is the subject of the article within the scope of the subject category?	Yes
2	Are the interpretations / conclusions sound and justified by the data?	Yes
3	Is this a new and original contribution?	Yes
4	Does this paper exemplify an awareness of other research on the topic?	Yes
5	Are structure and length satisfactory?	Yes
6	Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?	No
7	Can you suggest any reductions in the paper, or deletions of parts?	No
8	Is the quality of the diction satisfactory?	Yes
9	Are the illustrations and tables necessary and acceptable?	No
10	Are the references adequate and are they all necessary?	Yes
11	Are the keywords and abstract or summary informative?	Yes

**Rating:** 8

**Comment:**

Excellent work

**Competing interests:** No

**Invited by the author to make a review on this article? :** Yes

**Experience and credentials in the specific area of science:**

Co-Authorship in

Spiegel W, Zidek T, Maier M, Vutuc C, Isak K, Karlic H, Micksche M. Breaking bad news to cancer patients: survey and analysis. *Psychooncology* 2009;18:179-186

**Publications in the same or a related area of science:** Yes

**References:** Spiegel W, Zidek T, Maier M, Vutuc C, Isak K, Karlic H, Micksche M. Breaking bad news to cancer patients: survey and analysis. *Psychooncology* 2009;18:179-186

**How to cite:** Karlic H.: PTSD treatment in cancer patients[Review of the article 'Treating PTSD in cancer patients' by Thompson S].*WebmedCentral Oncology* 1970;4(11):WMCRW002891