Cognitive appraisals and physical health in people with posttraumatic stress disorder (PTSD)

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SUMMARY

Previous literature suggests that posttraumatic stress disorder (PTSD) is associated with poor physical health. To date a number of existing hypotheses have been developed to explain this association focusing predominantly on the interplay between cognitive and emotional appraisals. We have attempted to synthesise existing literature on the role of cognitive and emotional appraisals in explaining ill health (i.e. medically explained symptoms), following PTSD. On the basis of this review, we are introducing a conceptualisation aiming to explain poor physical health following PTSD. This new conceptualisation proposes that PTSD symptoms will lead to the production of two types of cognitive appraisals: Appraisals about the body that occurred during traumatisation, and cognitive appraisals about PTSD symptoms themselves. Both these cognitive appraisals coupled with negative emotional responses will lead to physiological arousal and negative health behaviours and subsequently to poor health. Although this conceptualisation has certain clinical implications for the management of physical health following PTSD, further research is required to test such by investigating the association between its elements.

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Introduction

Previous research on the prevalence of traumatic events indicates that 67–84% of people report at least one traumatic life event and 12% will eventually develop posttraumatic stress disorder (PTSD) [1]. PTSD is a possible clinical manifestation following exposure to a traumatic event. A traumatic event involves the threat of death or serious injury or a threat to the physical integrity of self or others that is accompanied by intense feelings of fear, helplessness or horror [2]. Epidemiological studies on PTSD have shown lifetime prevalence rates of up to 7.8% [3]. It has also been estimated that by 2020 psychological trauma will be among the leading causes of disability alongside depression and heart disease [4]. PTSD symptoms include re-experiencing of the traumatic event, avoidant behaviour in relation to the reminders of the event and hyperarousal. These symptoms tend to co-occur with a number of mental health conditions, including depression, anxiety and substance use (e.g. [5]), which could seriously compromise quality of life. Presence of PTSD symptoms and associated co-morbidity could have a high economic impact because of demands on healthcare and social services, including increased psychiatric hospitalization and increased outpatient physical health visits [6], as well as lost working time and low productivity (e.g. [7,8]). Apart from its effects on mental health, growing evidence suggests that trauma experience adversely affects physical health, as measured by self– rated and assessor-rated measures of physical status [9,10]. These associations seem to be independent of poor health behaviour alone (e.g. [11]) or other co-morbid conditions (e.g. [12]).

In the present paper we set out to review previous literature on the role of cognitive and emotional appraisals on physical health following PTSD. Based on this review we introduce a conceptualisation of poor physical health following PTSD. By “ill health” we refer to medically explained symptoms although the distinction between medically explained and medically unexplained symptoms may not be always clear (e.g. pain). It is envisaged that this conceptualisation will provide a framework for further research and practice by informing the development of cognitive-behavioural interventions for poor physical health in people with PTSD.

Poor physical health following PTSD

To date, a few explanations have been offered for the role of cognitive and emotional appraisals in physical health following PTSD. These are presented briefly as follows. Pennebaker [13] has proposed that the likelihood to report physical symptomatology after exposure to a traumatic event could result from four resources. These include biological changes caused by the trauma, symptom reporting as a measure of avoidance, mislabelling of autonomic and emotional consequences of avoidance or as a strategy to elicit help from others. Another possible explanation as to
why trauma populations tend to report poor physical health may be the presence of health anxiety in this population group. Health anxiety or illness worry, observed in somatisation disorder and hypochondriasis, is associated with frequent treatment seeking, increased disability and health care costs, and depression and anxiety symptoms [14–16]. In this case, poor physical health following PTSD is a psychological distress artefact. Such difficulties, which tend to be chronic, could benefit from psychological therapies [17].

Ehlers and Clark's [18] cognitive-behavioural explanation for the persistence of PTSD psychological symptomatology has also focused on the role of cognitive and emotional processes. They particularly emphasised the role of perceived threat and cognitive appraisals about the event or trauma sequelae. Modifying relevant cognitive appraisals is of paramount importance in cognitive therapy for PTSD following this model [19]. This Ehlers-Clark model might also be useful in helping to conceptualise as to why people develop medical symptoms after exposure to trauma. We have hypothesised that cognitive appraisals and emotional responses that such evoke, could account for the development of physical symptomatology in people with PTSD. The nature of these appraisals and relevant evidence to support this hypothesis is presented briefly as follows.

Appraisal theory

Cognitive appraisals are not the by-product of cognitive reasoning. As put by Peters et al. [20] cognitive appraisals "are presumed to be relatively effortless, intuitive, and automatic evaluations that are sensitive to events related to survival (e.g. loss, threat, injustice) and opportunities (e.g. forming attachments)" (p. 1352). Appraisal theory distinguishes between primary and secondary appraisals in a situation. Primary appraisal is best described as a perceived demand resulting from the interaction of three perceptual elements: required effort, uncertainty and danger. Secondary appraisal refers to the perceived coping resources available to deal with the situation. Three dimensions of primary appraisal have been identified; threat, challenge and loss [21,22]. Experiences are perceived as threatening, if they are related to anticipatory harm and as challenging, if they prohibit potential personal growth and development. Appraisals of loss occur when harm has already occurred. With regard to secondary appraisals four dimensions have been identified [23]. Accountability refers to "whom" and "what credit" will be received from the encounter. Problem-focused coping potential refers to appraisals of ability to act directly to the situation, while emotion-focused coping potential refers to appraisals of psychological adjustment. Future expectancy refers to the appraisal of the possibility of changing the experience [24]. Although the above model is dominant in appraisal theory, similar models have been proposed in the literature. By reviewing the relevant literature, Karasawa [25] suggested five dimensions, which were common across most appraisal theorists (e.g. [22]). Such include pleasantness (positive vs. negative affect), predictability (predictable vs. unpredictable), causation (by self, other, or chance), coping potential and importance.

The role of cognitive appraisals in physical health status

Previous research has indicated that appraisals are associated with physical health perceptions but that only certain appraisals are associated with health concerns. In previous research, appraisals of threat – but not challenge or loss – were significantly associated with hypochondriacal concerns. This association was mediated by somatosensory amplification [28]. It is interesting that both threat appraisals [29] and hypochondriacal concerns [28] are associated with neuroticism. In terms of secondary appraisals, perceived control was found associated with increased levels of hypochondriacal concerns [30]. Thompson et al. [31] have also shown through their “compensatory control theory” that perceived control is far more important than actual control for psychological adjustment. In situations of low actual control, people’s perceived control over a situation will determine the level of psychological adjustment achieved. Negative cognitive appraisals could also lead to negative emotional responses. Relevant literature in support of this hypothesis is presented as follows.

Emotional responses following negative cognitive appraisals

Blascovich and Tomaka [24] have explained that appraisals of threat and control are able to generate specific emotional experiences. Cognitive appraisals of a situation are conducted along a number of dimensions that will discriminate between different emotions (e.g. fear vs. anger) and will also determine the quality and the intensity of the emotion produced. However, the production and the perception of an emotion such as fear also involves information regarding the body [32–34]. Within this conceptualisation, negative emotions could be the mediator which allows transference of information from mind to body and vice versa. Schachter and Singer’s [35] biofactorial theory supports this claim as they showed that emotional experience is a consequence of the interaction between cognition and physiological arousal. If the experience of arousal remains the same, cognitions will be responsible for the production of distinguished and opposite emotions, such as anger versus excitement. However, if arousal is too intense it tends to generate a negative emotional state irrespective to associated cognitions [36]. If increased bodily arousal shuts down cognitive networks all sorts of biases could be introduced and misinterpretations of internal bodily experiences become rather likely, while the person is trying to process this information about his arousal. One could argue that misinterpretation of bodily arousal, during the experience of certain negative emotions could account for the generation of perceptions of ill health. It has been evident that bodily arousal is present in people with a history of trauma and hyperarousal symptoms in PTSD patients may also trigger cognitions of poor physical health [37]. Prolonged hyperarousal could also be responsible for poor physical health such as cardiovascular disease by triggering certain biological mechanisms (e.g. [22]).

The type of the situation that one is called to appraise seems to have an impact in producing certain appraisals. Negative appraisals of challenge and threat tend to occur when the situation has perceived consequences for the well-being of the performer [24]. Traumatic events that threaten such aspects might be particularly responsible for the production of perceptions of ill-health. Quality performance to such situations will also provide some positive input to the performer’s self-worth, although if the situation in which one is called to perform is not meaningful for ones self-worth (i.e. non-evaluative nor goal relevant situation), it will not produce threat or challenge appraisals [38]. Thus, “personalising” a situation is also important in the production of negative appraisals. These propositions could account for an idiosyncratic evaluation of a certain event or experience and the fact that not all people who experience threatening traumatic events would necessarily develop perceptions of ill-health. Individual tendencies to perceive one’s self in a vulnerable fashion when interacting with the environment could predispose interpretation of normal bodily sensations involved in emotional experiences as “being ill” or becoming “vulnerable to illness”, while attempting to construct personal meanings. In support of this claim, Greenberg and Pascual-Leone [39] argued that “in a dialectical-constructive view
... emotions are seen as the primary generator of personal meaning" (p. 160). Furthermore, Pennebaker [40] has shown that by talking and writing about emotional traumatic experiences causes a reduction in skin conductance and blood pressure. This account suggests that as we reflect in an event and as we attempt to construct personal meanings of the current experience and our previous learning, we might overgeneralise the current physiological arousal into a self-meaning of "being ill" or "being vulnerable to illness", especially if hyperarousal is prolonged. This new personal meaning will be incorporated into one’s self-structure and any future experiences that might resemble the original traumatic experience, would be interpreted via this new meaning of vulnerability to illness resulting in further appraisals of having ill health. PTSD may also result in negative health behaviours such as smoking, alcohol use, etc. [41] which could further compromise one’s health status.

Fig. 1 describes a conceptualisation explaining the association between PTSD and health status. This conceptualisation represents an attempt to synthesise elements from existing literature aiming to explain how PTSD may lead to poor physical health. This conceptualisation proposes that PTSD symptoms will lead to the production of cognitive appraisals about the body that occurred during traumatisation as well as cognitive appraisals about PTSD symptoms themselves. These coupled with negative emotional responses will lead to physiological arousal and negative health behaviours and subsequently poor health.

**Conclusions and implications for clinical practice and research**

In this paper we have attempted to synthesise existing literature on the role of cognitive and emotional appraisals in explaining ill health following PTSD. Further research is required to test this conceptualisation by investigating the association between its elements. It is envisaged that results from such research will increase our understanding as to why people with PTSD tend to have increased physical health problems. Such understanding may lead to more effective management of physical health concerns in this population group.

Although further research is required, the proposed conceptualisation has potentially important clinical implication for the management of poor physical health after PTSD. In line with previous conceptualisations of cognitive-behavioural orientation, our model suggests that by identifying and challenging maladaptive cognitive appraisals about one’s body or about PTSD symptoms one can achieve a decrease in physiological arousal and in negative health behaviours and subsequent positive health outcomes. The proposed conceptualisation may also have important implications for the management of health problems in people with PTSD in

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Fig. 1. Model explaining the association between PTSD and poor physical health.
primary care. There has been evidence to suggest that when the experience of physical symptoms is acknowledged and validated, most patients will accept that emotional factors or stress could have an effect on their physical health. Explanations offered to patients are very important as they can facilitate coping and resilience. Peritraumatic predictors of posttraumatic stress disorder in a nonclinical sample of college students. J Traum Stress 1998;11:645–64.


