Psychiatry Research 209 (2013) 55–59

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

A model of suicidal behavior in posttraumatic stress disorder (PTSD): The mediating role of defeat and entrapment

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ARTICLE INFO

Article history:
Received 10 March 2012
Received in revised form
19 November 2012
Accepted 14 February 2013

Keywords:
Suicidal behavior
PTSD
Perceptions of defeat and entrapment
Schematic Appraisal Model of Suicide
Depression
Hopelessness

ABSTRACT

The aim of this study was to examine whether depression, hopelessness and perceptions of defeat and entrapment mediated the effects of posttraumatic stress disorder (PTSD) symptoms on suicidal behavior. Participants were 73 individuals (mean age=29.2, S.D.=10.9, 79.5% female) diagnosed with current or lifetime PTSD who reported at least one PTSD symptom in the past month. Participants completed a series of self-report measures assessing depression, hopelessness and perceptions of defeat and entrapment. The Clinician Administrated Posttraumatic Scale for DSM-IV was administered to assess the presence and severity of PTSD symptoms. The results of Structural Equation Modeling supported a model whereby perceptions of defeat and entrapment fully mediated the effects of PTSD symptom severity upon suicidal behavior. The finding that perceptions of defeat and entrapment mediate the relationship between PTSD symptom severity and suicidal behavior was replicated in a subgroup of participants (n=50) who met the full criteria for a current PTSD diagnosis. The results support a recent theoretical model of suicide (The Schematic Appraisal Model of Suicide) which argues that perceptions of defeat and entrapment have a key role in the development of suicidal behaviors. We discuss the clinical implications of the findings.

1. Introduction

Suicidal behavior, including suicidal thoughts, plans and attempts, are a common phenomenon in individuals diagnosed with posttraumatic stress disorder (PTSD) (e.g., Davidson et al., 1991; Tarrier and Gregg, 2004; Panagioti et al., 2009, 2012a). The results of a recent study suggest that a PTSD diagnosis, rather than simple exposure to traumatic events without the experience of PTSD symptoms, is the overriding factor which drives suicidal behavior in trauma victims (Wilcox et al., 2009). There is evidence in the literature that both current and lifetime diagnoses of PTSD are associated with increased levels of suicide attempts and suicidal ideation (Davidson et al., 1991; Oquendo et al., 2005). Similarly, the rates of suicidal behavior are significantly heightened in those experiencing PTSD symptoms but who do not fulfill the criteria for a current PTSD diagnosis (Marshall et al., 2001). The aim of the current study was to investigate the psychological mechanisms of suicidal behavior in those fulfilling the criteria for a PTSD diagnosis (current or lifetime) and currently experiencing a range of PTSD symptoms. We specifically focused on the role perceptions of defeat and entrapment, comorbid depression and hopelessness (Williams, 1997) in putative pathways to suicidal thoughts and behaviors.

A generic theoretical model of suicidal behavior, namely the Schematic Appraisal Model of Suicide (SAMS) (Johnson et al., 2008), has been recently developed to explain the psychological mechanisms underlying suicidal behavior. The SAMS model is a modification of a previous theoretical account of suicide, the Cry of Pain Model of Suicide (Williams, 1997; Williams et al., 2005), which aims to build on and expand the previous model. As with the Cry of Pain Model of Suicide, the SAMS model argues that perceptions of defeat and entrapment (i.e., perceptions of loss and failure, low social rank and an inability to escape or move forward) (Gilbert and Allan, 1998) are a core component of the psychological mechanisms underlying suicidal behavior. In accord with both the SAMS model and the Cry of Pain model, a number of studies have found a strong positive association between suicidal behavior and perceptions of defeat and entrapment in a range of different populations, such as students (Taylor et al., 2010b), parasuicidal individuals (O'Connor, 2003; Rasmussen et al., 2010), and individuals with psychoses (Taylor et al., 2010a).

A central prediction of the SAMS model is a mediational path in which negative cognitive appraisals result in overwhelming feelings of defeat and entrapment, which in turn give rise to suicidal behaviors (Johnson et al., 2008; Taylor et al., 2010b). Such negative cognitive appraisals may relate to a range of factors, for example, negative appraisals of current and predicted effects of

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0165-1781/$ - see front matter © 2012 Elsevier Ireland Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.psychres.2013.02.018

mental illnesses and symptoms, feelings of poor social support, and problems controlling fluctuations in emotions. Currently, two recent studies, conducted among individuals experiencing psychosis and University students, have empirically tested the above prediction and both studies provided support for the SAMS model (Taylor et al., 2010a,b). In both of these studies mediational models with a focus on perceptions of defeat and entrapment were represented as a single latent variable. In the PTSD literature, a recent study conducted by our research team investigated the association between suicidal behavior and perceptions of defeat and entrapment in PTSD. The results revealed a strong positive association between suicidal behavior and perceptions of defeat and entrapment in those with PTSD. The association between suicidal behavior and entrapment remained significant after controlling for the effect of comorbid depression (Panagioti et al., 2012b). It follows that perceptions of defeat and entrapment putatively mediate the impact of PTSD on suicidal behavior.

The aim of this study was to construct a model of suicidal behavior in a sample of individuals diagnosed with PTSD (current or lifetime) who were experiencing PTSD symptoms in the past month. This was achieved by examining the role of perceptions of defeat and entrapment as potential mediators in the association between PTSD symptoms and suicidal behavior. Defeat and entrapment were represented as a single variable in the analyses based on strong theoretical (SAMS model) and empirical evidence which suggest that they emerge as a consequence of the same cognitive process (i.e., a negatively biased appraisal system) and share many common features, such as an inability to move forward and engage with viable solutions (Johnson et al., 2008; Taylor et al., 2009, 2010a,b; Panagioti et al., 2012b). Comorbid depression and hopelessness were also included as mediators in the analyses as there is ample evidence in the literature which suggests that depression and hopelessness are robust predictors of suicidality in diverse populations including those with PTSD (Williams, 1997; O'Connor et al., 2000; Kuo et al., 2004; Spokas et al., 2009; Johnson et al., 2010; Panagioti et al., 2012b). It was predicted that the relationship between PTSD symptoms and suicidal behavior would be fully mediated by perceptions of defeat and entrapment whilst controlling for comorbid depression and hopelessness.

2. Methods

2.1. Participants and procedure

Participants were recruited using adverts (i.e., newspaper advertising, online advertising in the University of Manchester, UK), posters in mental health services based in Manchester, asking for people who have experienced a traumatic event (i.e., crime, physical threat, serious accident, military combat, natural disaster, terrorist attack) in the past and have been affected by it to volunteer. Participants had to fulfill the following criteria to participate in the study: (1) fulfill the criteria for a lifetime diagnosis of PTSD confirmed by the Clinical Administrated PTSD scale (CAPS) for DSM IV (Blake et al., 1995); (2) be aged between 18 and 65 years; (3) have experience at least one PTSD symptom in past month with ≥ 1 frequency and ≥ 2 intensity score determined by the CAPS; and (4) have a thorough grasp of the English language. Participants were excluded if they suffered from dementia, organic brain disorder or active psychotic disorder. The CAPS interview and all the self-report measures were administrated by the first author (MP) in one session. Ethical approval was obtained from the relevant NHS research ethics committee before this study commenced.

2.2. Measures

2.2.1. PTSD

The Clinician Administered PTSD Scale (CAPS) (Blake et al., 1995) was used to diagnose PTSD (current and lifetime) and to assess the number and severity of PTSD symptoms in the past month. The CAPS is a 30-item structured interview according to DSM-IV criteria for PTSD. The PTSD symptom severity score which was used in the statistical analyses was computed by adding the intensity and frequency score for each of the 17 PTSD symptoms. Previous research has found that the Cronbach alpha coefficient ranges from 0.85 to 0.87 for the three symptom clusters and 0.94 for the total CAPS score (Blake et al., 1995). The alpha coefficient for the total severity of the 17 PTSD symptoms in the current study was 0.92.

2.2.2. Depression

The Beck Depression Inventory (BDI) (Beck et al., 1988) comprises 21 items which measure the severity of depressive symptoms (range 0–63) in the past 2 weeks. The BDI has high internal consistency (mean coefficient alpha of 0.86 for psychiatric patients and 0.81 for non psychiatric individuals) and concurrent validity with respect to clinical ratings and the Hamilton Rating Scale for Depression (HRSD) for psychiatric (0.72 and 0.73, respectively) and non-psychiatric individuals (0.60 and 0.74 respectively) (Beck et al., 1988). The alpha coefficient was 0.94 in the current sample.

2.2.3. Hopelessness

The Beck Hopelessness Scale (BHS) (Beck et al., 1974) consists of 20 true or false items assessing the prevalence of thoughts and beliefs about feelings of hopelessness in the past week (e.g., "My future seems dark to me"). Previous studies have provided evidence for the convergent validity of the scale since it was found to be negatively associated with measures of hope (Raleigh and Boehm, 1994; Steed, 2001) and positive future thinking (O'Connor et al., 2004). The scale has been found to have an alpha coefficient of 0.93 and a test–retest reliability of $r=0.85$ over 3 weeks (Holden and Fekken, 1988). The alpha coefficient was 0.93 in the current study.

2.2.4. Defeat

The Defeat Scale (Gilbert and Allan, 1998) consists of 16 items assessing perceptions of defeat including those of failed struggle and low social rank (e.g., "I feel that I am one of life's losers") in the past week. The items are rated on a five-point scale ranging from 'Never' to 'Always/all the time'. Higher scores indicate greater feelings of defeat. There are no previous reports giving the internal consistency of this scale in a trauma or PTSD groups. The alpha coefficient for this scale has been found to be 0.94 in a student group and 0.93 in a depressed group (Gilbert and Allan, 1998). The alpha coefficient in the current study was 0.96.

2.2.5. Entrapment

The Entrapment Scale (Gilbert and Allan, 1998) consists of 16 items assessing perception of being trapped by external (e.g., I feel trapped by other people) or internal stressors (e.g., "I feel trapped inside myself"). The items are rated on a five-point scale ranging from 'Not at all like me' to 'Extremely like me'. There are no previous reports concerning the internal consistency of this scale in trauma or PTSD groups. The alpha coefficient for this scale has been found to range from 0.86 to 0.89 in a depressed group (Gilbert and Allan, 1998) and it was 0.96 in the present sample.

2.2.6. Suicidal behavior

The Suicidal Behaviors Questionnaire-Revised (SBQ-R) is a four-item measure which assesses the level of suicidality experienced by the participants (Osman et al., 2001). The first item measures levels of lifetime suicidality including thoughts, plans and attempts (i.e., "Have you ever thought about or attempted to kill yourself?"); the second item assesses the frequency of suicidal thoughts in the past year (i.e., "How often have you thought about killing yourself in the past year?"); the third item measures the communication of the intent to commit suicide ("Have you ever told someone that you were going to commit suicide, or that you might do it?"), and the fourth item assesses the likelihood of committing suicide in the future ("How likely is it that you will attempt suicide someday?"). The total score ranges from 3 to 18 with higher scores indicating greater levels of suicidality. Osman et al. (2001) have shown that the questionnaire is a reliable research tool in both clinical and non-clinical samples with an alpha coefficient ranging from 0.76 to 0.88 (Osman et al., 2001). The alpha coefficient was 0.86 in the present sample.

2.3. Statistical analyses

The data were initially screened for normality. Transformations (logarithmic and square root) were applied to the measures of defeat, entrapment, hopelessness, depression, PTSD symptom severity and suicidal behavior to correct for positive skew. Transformed values were used in subsequent analyses. Following the transformations, all the transformed variables had non-significant values of skewness ($Z < 1.96$). Multicollinearity was not a serious problem in the data since all the values of the variance inflation factor (VIF) were below 10 (Myers, 1990) with its highest value being 6.2 and all tolerance statics were above 0.1 (Field, 2009) with the lowest value being 0.16.

The hypothesized model was tested via Structural Equation Modeling (SEM). SEM was used in this study on the basis of its following key advances compared to