Gratitude, depression and PTSD: Assessment of structural relationships

John P. Van Dusen [a], Mojisola F. Tiamiyu [a], Todd B. Kashdan [b], Jon D. Elhai [a,*]

[a] Psychology Department, University of Toledo, Toledo, OH, USA
[b] Psychology Department, George Mason University, Washington, DC, USA

ABSTRACT

Gratitude, the tendency to appreciate positive occurrences in one's life that can be partially attributed to another person, has been shown to be a robust predictor of greater well-being. Researchers have also found gratitude to be inversely related to several emotional disorders, including major depressive disorder (MDD) and posttraumatic stress disorder (PTSD). Both of these emotional disorders are highly comorbid and share dysphoric symptoms (e.g., restricted affect, detachment, anhedonia) that could account for deficits in the experience and expression of gratitude. We used confirmatory factor analysis to test the relationships between gratitude and the symptom factors of PTSD (using the *DSM-5* model) and MDD in a sample of trauma-exposed college students ($N=202$). Results indicated that gratitude is more strongly related to PTSD's negative alterations in mood and cognition (NAMC) factor than to other PTSD factors. Implications of these findings for the study of gratitude and trauma are discussed, including whether gratitude and gratitude-based interventions might prove particularly suited to targeting depressive symptoms.

© 2015 Published by Elsevier Ireland Ltd.

1. Introduction

Gratitude can be broadly defined as the mindful appreciation of benefits received that can be attributed to the kindness of other people (e.g., McCullough et al., 2001). Several studies have found that grateful individuals experience greater psychological well-being in their life (e.g., Emmons and McCullough, 2003; Lambert et al., 2010); this includes a reduction in suicidal ideations over time and an increased sense of meaning in life (e.g., Kleiman et al., 2013), and less aggressiveness and more prosocial behavior (De-Wall et al., 2012). There is also a small body of work suggestive that being grateful promotes physical health, in terms of fewer reports of physical health problems, better sleep quality, and more time spent exercising (Emmons and McCullough, 2003; Wood et al., 2009; Hill et al., 2013).

In response to basic research on the psychological, social, and physical health benefits of gratitude, we explored the links between gratitude and specific mental disorders at the latent level. In hopes of understanding mental health symptoms that are particularly relevant to gratitude, we examined relationships with latent factors representing major depressive disorder (MDD) and posttraumatic stress disorder (PTSD) symptoms.

1.1. Gratitude and DSM disorders

Gratitude has demonstrated inverse relationships with several mental disorders. In particular, individuals higher in dispositional gratitude display significantly fewer depressive symptoms over time (Wood et al., 2008; Lambert et al., 2012) and dispositional gratitude is also negatively associated with PTSD (Kashdan et al., 2006; Israel-Cohen et al., 2014). Possible mediating influences in the relationship between gratitude and depression include life satisfaction, positive affect and positive beliefs (Lambert et al., 2012), as well as the enhanced retrieval of positive memories (Watkins et al., 2014). The relationship between gratitude and PTSD may be mediated by negative affect and life satisfaction (Israel-Cohen et al., 2014). In addition, gratitude-based interventions, pioneered by Emmons and McCullough (2003), have shown preliminary effectiveness in reducing depressive symptoms (Seligman et al., 2005; Lambert et al., 2012), worry (Geraghty et al., 2010b) and body dissatisfaction (Geraghty et al., 2010a). These data suggest that gratitude may serve as a protective factor against certain types of psychopathology, through cognitive mediators such as life satisfaction and positive beliefs, as well as through affective mediators such as positive emotional experiences.

However, it is unclear whether the preponderance of evidence linking gratitude to lower depressive symptoms is due to a specific relationship between gratitude and depression, or merely a consequence of depressive symptoms often serving as the lone outcome to evaluate interventions designed to enhance well-being (Sin and Lyubomirsky, 2009).

* Correspondence to: University of Toledo, 2801 West Bancroft Street, Mail Stop 948, Toledo, OH 43606, USA.
   E-mail address: jon.elhai@gmail.com (J.D. Elhai).

1.2. PTSD and depression

PTSD is a prevalent disorder among populations exposed to trauma. PTSD is complex and has high rates of comorbidity with depression, anxiety disorders and substance use (Lockwood and Forbes, 2014). In particular, PTSD has high comorbidity with MDD. PTSD symptoms are conceptualized in the Diagnostic and Statistical Manual of Mental Disorders (5th ed; DSM-5; American Psychiatric Association, 2013) as four distinct factors, including re-experiencing the trauma, effortfully avoiding trauma reminders, negative alterations in mood and cognition (NAMC), and alterations in arousal and reactivity (AAR). The NAMC cluster, which is of particular interest to this study, is composed of symptoms such as blaming oneself or others for the trauma, negative emotions related to the trauma, emotional detachment and loss of interest in pleasurable activities. Models of DSM-5 PTSD symptom structure with more than four factors exist (e.g., Armour et al., 2015), but given that the DSM-5 model is still relatively new, we chose to limit the focus of the present study to just four-factor models.

Previous research has identified a subset of PTSD symptoms which resemble symptoms of depression as potentially responsible for the comorbidity between PTSD and MDD. The DSM-5 defines this symptom cluster as NAMC, and a model known as the dysphoria model of PTSD (Simms et al., 2002) groups these with several symptoms from the AAR cluster of PTSD symptoms to form a dysphoria factor. The dysphoria model of PTSD has received some support over other models, such as the numbing model, using DSM-IV criteria (Yufik and Simms, 2010), and a few studies have extended this finding to the DSM-5 version of PTSD (Contractor et al., 2014; Elhai et al., 2015), although the DSM-5 model has been better supported in at least one study (Biehn et al., 2013). These studies have found that both the NAMC factor and dysphoria factor of PTSD, depending on the model used, are more highly related to latent dimensions of depression (somatic and non-somatic, using the Patient Health Questionnaire-9, PHQ-9) than other factors (e.g., avoidance, re-experiencing and AAR). For the moment, however, the commonality between MDD and PTSD through the depression-like symptoms of the NAMC factor provides a possible theoretical basis for commonality in the relationship between gratitude and these two disorders.

1.3. The present study

The present study investigated the relationship of gratitude to the symptom dimensions of PTSD. First, we hypothesized that the dysphoria model (Simms et al., 2002) would fit the data better than the DSM-5 model (American Psychiatric Association, 2013). Second, we hypothesized that gratitude would be more highly (inversely) related to PTSD's dysphoria or NAMC symptom cluster (depending on which model displays better fit) than to the re-experiencing, avoidance and AAR symptom clusters, in the same manner that depressive symptoms are more highly related to the NAMC/dysphoria factor.

2. Method

2.1. Procedure and participants

We enrolled students who endorsed the presence of a traumatic event, as defined by the Structured Clinical Interview for DSM-IV Disorders' PTSD trauma screen (Elhai et al., 2008). Using this pre-screening question, 389 undergraduate students in psychology courses who screened positive for trauma exposure enrolled in the IRB-approved study and completed an online questionnaire. Participants received class credit for their participation.

187 participants who did not qualify as trauma-exposed based on further screening were excluded from the analyses. This resulted in a final sample of 202 participants (75.2% women). Participants had a mean age of 20.4 (SD_{age}=5.6) and completed an average of 12.93 years of schooling (SD_{school}=1.52). Racial background was mostly Caucasian (82.7%), and remaining participants self-identified as African–American (14.4%), Asian–American (2.5%), American Indian/Alaskan Native (3%), Native Hawaiian (2%), or of another race (5.4%). Ethnically, participants were primarily not Latino (87.6%).

2.2. Measures

Stressful Life Events Screening Questionnaire (SLESQ): The SLESQ (Goodman et al., 1998) is a self-report measure which screens for exposure to a traumatic event. We inquired about the most distressing nominated trauma and symptom severity from this trauma in the past month. The SLESQ was originally developed for use with the DSM-IV with good psychometric properties (Goodman et al., 1998), and has been adapted for use with the DSM-5 by Elhai et al. (2012b). The most prevalent trauma endorsed as most distressing in the past month was the death of a family member/close friend (n=88, 43.6%), followed by life-threatening accidents (n=18, 8.9%) and childhood sexual abuse (n=18, 8.9%).

PTSD Checklist for DSM-5 (PCL-5): The PCL is a self-report measure assessing severity of PTSD symptoms in the past month. The PCL-5 (Weathers et al., 2013) is an adaptation of the original version (Weathers et al., 1993) with 20 items that map onto each of the DSM-5 symptoms of PTSD. The PCL is widely used and the original version has strong diagnostic validity (McDonald and Calhoun, 2010). Items on the PCL-5 are scored on a Likert scale with options ranging from 0 ("Not at all") to 4 ("Extremely"). Internal consistency of the measure in the present study was α=0.96, with a mean of 22.23 and a standard deviation of 18.19.

Patient Health Questionnaire-9 (PHQ-9): The PHQ-9 (Kroenke et al., 2001) assesses severity of depressive symptoms using nine items that map onto the nine DSM-5 criteria for a major depressive episode. Items are scored based on frequency in the past month using a 4-point Likert scale ranging from 0 ("Not at all") to 3 ("Nearly every day"). The psychometric properties of the PHQ-9 are well-validated (Kroenke et al., 2010). The PHQ-9 has a two-factor structure with somatic (Items 3, 4, 5, 7, 8) and nonsomatic (Items 1, 2, 6, 9) symptom clusters (Elhai et al., 2012a; Tsai et al., 2014). Internal consistency of the measure in the present study was α=0.88, with a mean of 7.93 and a standard deviation of 5.92.

Gratitude Questionnaire-6 (GQ-6): The GQ-6 is a six-item self-report measure assessing the frequency and intensity of grateful experiences (McCullough et al., 2002). Items consist of statements such as "I have so much in life to be thankful for" (Item 1) or "I am grateful to a wide variety of people" (Item 4), and are scored on a 7-point Likert scale (1=strongly disagree, 7=strongly agree). GQ-6 items load onto a single factor which is distinct from constructs such as happiness, well-being, optimism and vitality (McCullough et al., 2002). Internal consistency for this measure was α=0.82 in the present study, with a mean of 5.69 and a standard deviation of 1.05. Both metrics are reported as participants' averages of the 6 items on the 1–7 Likert scale, and approximate the characteristics of previous samples, e.g. mean=5.92, standard deviation=0.88 (Study 1; McCullough et al., 2002).

2.3. Data analysis

Prior to primary analysis, we compared the fit of the DSM-5 model and the dysphoria model of PTSD. We treated PCL-5 and PHQ-9 data as ordinal data due to 5 or fewer Likert response options for these measures, using weighted least squares estimation