Risk and Resilience Factors for Symptoms of Posttraumatic Stress Disorder and
Depression

by

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Abstract

Traumatic stressors, including those that occur early in life, can lead to symptoms of Posttraumatic Stress Disorder (PTSD) and depression. There are, however, numerous factors that have been associated with the effects of stressors being less pronounced. The present investigation examined whether social support and resilience factors were associated with lower levels of stress-related pathology. Questionnaires that assessed childhood maltreatment, coping, social support, resilience, and symptoms of PTSD and depression were completed. It appeared that resilience mediated the relationship between childhood maltreatment and symptoms of PTSD in adulthood (and depression in a second model), and that the strength of this relationship depended on the level of social support. A multiple mediation revealed that resilience factors related to “tenacity”, “acceptance of change and secure relationships”, and “control” mediated between childhood maltreatment and symptoms of PTSD, while “acceptance of change and secure relationships”, and “control” were predictive of decreased symptoms of depression.

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Appendix I. Debriefing

Introduction

Traumatic experiences are known to engender Posttraumatic Stress Disorder (PTSD) symptoms, and these symptoms may even develop when individuals are not directly confronted with the trauma, as observed among US residents following the 9/11 attacks in New York (e.g., Schlenger et al., 2002; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). Although it had long been assumed that posttraumatic stress was uncommon, it seems that these symptoms are, in fact, relatively frequent (Brunet, Akerib, & Birmes, 2007). Lifetime prevalence of PTSD in Canada is approximately 9.2% (Van Ameringen, Mancini, Patterson, & Boyle, 2008). A majority of Canadians (76.1%) are exposed to at least one traumatic event in their lifetime and the majority of Canadians report exposure to multiple traumas (Van Ameringen et al., 2008). The prevalence of PTSD in the United States is slightly higher at 10% (Breslau, 2002; Wittmann, 2007); while as many as 90% of citizens in the US will be exposed to at least one traumatic event in their lifetime (Yehuda, 1999).

To be sure, not all individuals that encounter traumatic events experience PTSD symptoms, and for those who do, these symptoms can be relatively transient or they may persist beyond six months (Olf, Langeland, & Gersons, 2005; Zoellner, Foa, Brigidi, & Przeworski, 2000). There has been increasing interest in identifying those factors that account for individual differences in the development of PTSD following traumatic experiences (Brewin, Andrews, & Valentine, 2000; Yehuda, 1999). In this regard, there has been a focus in determining the impact of previous stressor experiences upon the stress response to later traumatic events. It has been suggested that a major life challenge may have the effect of limiting the impact of subsequent traumatic experiences, as the

strength gained from successfully dealing with past events may facilitate the individuals' ability to confront current challenges (Rutter, 1985; Yehuda, 1999). While not denying this possibility, at least in some cases, it has also been reported that multiple trauma experiences (Suliman et al., 2009), including maltreatment experienced in childhood (Campbell-Sills, Forde, & Stein, 2009), are highly predictive of PTSD, suggesting that the initial trauma experience may sensitize individuals so that the impact of later trauma are exaggerated (Avital & Richter-Levin, 2005; Grassi-Oliveira & Stein, 2008; McNally, 2010). To be sure, there are numerous factors, in addition to previous stressful experiences, that might contribute to the development of PTSD. These include the way in which individuals appraise a traumatic experience, the coping strategies they use to deal with it, the social supports available, emotional responses engendered by the trauma, genetic factors, neurophysiological substrates, as well as neurochemical changes elicited by the stressful experience.

These numerous contributing factors, among others, might also contribute to the resilience that individuals exhibit when confronted with severe challenges. Resilience, defined as the capacity to thrive under conditions of adversity (Connor & Davidson, 2003), is not the opposite of vulnerability, but instead may comprise a constellation of factors that contribute to a person's ability to contend with stressful events. However, vulnerability may be imparted for reasons unrelated to those that render an individual resilient, or could, theoretically result when even a single factor that leads to resilience is absent. By example, vulnerability factors, such as a family history of psychiatric illness, which could involve genetic factors or particular developmental experiences, can place an individual at risk for negative outcomes (McFarlane & Yehuda, 1996). However,

resilience factors such as social support may protect an individual or improve a person's chances of recovering following an event (McFarlane & Yehuda, 1996).

The present study examined to what extent resilience factors countered the effects of traumatic exposure, and what was predictive of a positive outcome (i.e., a decreased number of PTSD and depressive symptoms) following exposure to traumatic stress. It was of particular interest to assess the influence of childhood psychological maltreatment on PTSD and depression symptoms, as well as how coping strategies, social support, and resilience operated to predict these symptoms.

Posttraumatic Stress Disorder

The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) describes PTSD as a response to an extreme stressor involving actual or threatened death, injury, or learning about an unexpected or violent death. The person's response must comprise intense fear, helplessness, or horror. Some of the more common events known to provoke PTSD are a serious car accident, military combat, violent personal assault, a natural disaster, or being diagnosed with a life-threatening illness (DSM-IV-TR; American Psychiatric Association, 2000). Symptoms resulting from trauma exposure include avoidance behaviours (i.e., avoiding activities, people, and places associated with the trauma; Van-Minnen & Hagenaars, 2010), the re-experiencing or flashbacks of the trauma (Bourne, Frasquilho, Roth, & Holmes, 2010), as well as general numbing, hyperarousal, and disturbed sleep (Ohayon & Shapiro, 2000).

Symptoms of traumatic stress may occur immediately following a trauma and recede shortly thereafter (termed acute stress disorder; DSM-IV-TR; American

Psychiatric Association, 2000). For others, however, the symptoms fester and are associated with long-term psychiatric disturbance (Ehlers & Clark, 2000). For individuals experiencing these long-term effects (diagnosed with PTSD), major depressive disorder and alcohol and/or substance dependence are relatively frequent comorbid conditions (Brown, Stout, & Mueller, 1999). If PTSD is relatively protracted, then further symptoms, such as those of depression, may emerge (O'Donnell, Creamer, & Pattison, 2004).

Men and women encounter many stressors that are similar, as well as those that are more prominent in one gender than the other; however, as in the case of major depression, females are more likely than males to develop PTSD (Breslau, Chilcoat, Kessler, Peterson, & Lucia, 1999; Tolin & Foa, 2006; Weissman & Klerman, 1977). This gender difference could, in fact, be related to the types of trauma experienced (women are more likely to experience sexual assault and abuse) or to endogenous biological differences that might exist (Kilpatrick et al., 1989; Tolin & Foa, 2006; Voges & Romney, 2003). As well, it seems that individual differences unrelated to the trauma (e.g., hippocampal volume, premorbid psychiatric features) also contribute to the development of the disorder (Gilbertson et al., 2002; Mueser, Rosenberg, Goodman, & Trumbetta, 2002).

Although the type of trauma experienced might be related to the interindividual differences observed in relation to the development of PTSD, it was suggested that an individuals' appraisal of the event might be more cogent in predicting PTSD occurrence (Cameron, Palm, & Follette, 2010). In fact, a meta-analysis found that factors related to the trauma (i.e., perceived level of threat) and post-trauma elements (i.e., the response to

the trauma) are much stronger predictors of PTSD than pre-trauma characteristics (i.e., gender, previous traumatic experiences, etc., Brewin et al., 2000), although pretrauma, peritrauma, and posttrauma variables have been shown to be related to the emergence of PTSD (Hoge, Austin, & Pollack, 2007). Pretrauma risk factors include having prior psychiatric illness, being abused or experiencing trauma as a child, as well as being separated, divorced or widowed (Van Ameringen et al., 2008). Peritraumatic factors include the magnitude or the severity of the event (Breslau et al., 1999, Gershuny, Cloitre, & Otto, 2003, Shalev, Tuval-Mashiach, & Hilit, 2004), while posttraumatic variables found to affect reactions include coping strategies (Voges & Romney, 2003), and perceived social support (King, King, Fairbank, Keane, & Adams, 1998).

Anxiety results from appraisals related to impending threat, PTSD is unique amongst anxiety disorders in that it is related to a memory of an event that had been experienced. PTSD occurs primarily in individuals who process a traumatic event as a current threat (rather than an isolated occurrence), and thus it could be conceptualized as a disorder related to appraisals. Individuals who experience a traumatic event might come to believe they attract danger or are prone to disaster and may develop unrealistic beliefs about the likelihood of a future incident (Ehlers & Clark, 2000). According to this perspective, individuals who experience a traumatic event and make the appraisal that “I was at the wrong place at the wrong time”, would typify an individual who could recover without difficulty from a traumatic event. Alternatively, an individual who concludes that “Bad things always happen to me”, would be more likely to suffer chronic PTSD.

PTSD and Depression

PTSD is highly comorbid with other disorders, and this is particularly true for depression (Franklin & Zimmerman, 2001). Co-occurrence of PTSD and depression are high with concurrent rates at 56% and lifetime prevalence rates at 95% (Bleich, Koslowsky, Dolev, & Lerer, 1997). Although both of these disorders alone are sufficiently burdensome, the combination of the two is especially problematic. Individuals with the combination of PTSD and depression have more severe symptoms of depression, a delayed response to treatment, are at increased risk of remission, and increased suicidal ideation (Campbell et al., 2007, Oquendo et al., 2005). Several possible reasons for this overlap have been given, for example PTSD and depression have shared risk factors and symptoms (Bleich et al., 1997, Ginzburg, Ein-Dor, & Soloman, 2010). It has been also suggested that depression may be a reaction to the severity and chronicity of PTSD (Keane, Silberbogen, & Weierich, 2008). At any rate, PTSD and depression have both been found to occur as a result of a traumatic stressor (Franklin & Zimmerman, 2001, Vranceanu, Hobfoll, & Johnson, 2007).

Childhood Maltreatment

Early life trauma can include childhood psychological maltreatment, which is characterized by a repeated pattern of harmful reactions with no physical contact with the child (Glaser, 2002). Specifically, it refers to such behaviours as physical neglect, isolation, rejection, unreliable or inconsistent care, witness to violence, and verbal intimidation (Demare, 1996). Prevalence rates for childhood psychological maltreatment are approximately 12% (9.6% in men and 14.3% in women, Scher, Forde, McQuaid, & Stein, 2004). It has only been recently recognized as a distinct form of maltreatment.

(Holden, Geffner, & Jouriles, 1998), which occurs independently of other types of abuse (i.e., sexual and physical; Claussen & Crittenden, 1991).

Being raised under these conditions amounts to profound immersion in a severely stressful environment, and this can lead to impaired development across several dimensions of psychological and biological functioning (Cicchetti & Valentino, 2006). Childhood maltreatment is a form of trauma that has been associated with psychological disorders such as PTSD and depression (Fritch, Mishkind, Reger, & Gahm, 2010; Nemeroff et al., 2006). Indeed, the leading cause of PTSD in the United States has been that of childhood maltreatment (physical, sexual, and emotional; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Childhood *psychological* maltreatment has been found to predict major depression over and above other forms of child abuse (including sexual and physical abuse; Bifulco, Moran, Baines, Bunn, & Stanford, 2002; Rose & Abramson, 1992).

Social Support

Social support is defined as the existence and availability of people on whom a person can rely (Sarason, Levine, Basham, & Sarason, 1983). Available social support bolsters an individuals' capacity to withstand and overcome frustrations and challenges (Bowlby, 1988), and has been found it to be predictive of improved mental and physical health outcomes (Resick, 2001). Social support in early-life may be particularly important as this may set the stage for personality development. It has been suggested that social support promotes resilience to stress by promoting effective coping strategies (Ozbay et al., 2007). While high levels of social support have been found to act as a buffer that prevents the development of trauma related psychopathology (Cohen & Wills,

1985, Dalgard, Bjork, & Tambs, 1995), low levels of support are associated with increased morbidity and mortality, as well as the onset and relapse of depression (Ozbay et al , 2007, Sarason et al , 1983, Travis, Lyness, Shields, King, & Cox, 2004)

Resilience

Resilient individuals are not protected from experiencing negative life events, but appear to cope more effectively, and are more flexible, when faced with stress (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003) An individual high in resilience may experience a spike in distress or may struggle to maintain psychological stability following a trauma (i e , difficulty sleeping or concentrating), they will however, be able to continue to function effectively (Bonanno, 2005) Resilience is not something an individual “has”, but reflects a process that can be fostered and developed at any point in life (Cicchetti, 2010, Wagnild & Young, 1993) Resilience likely involves multiple factors, including supportive relationships and the ability to adapt and be flexible to challenges (Block & Block, 1980), as well as optimism, the ability to problem solve, spirituality, and a positive outlook on life (Madsen & Abell, 2010, Tugade & Fredrickson, 2004) Rather than immunity from harm, resilience could be defined as the ability to bounce back from harm (Layne, Warren, Watson, & Shalev, 2007)

Although resilience is an area of increasing interest, facilitated by the development and validation of self-report scales, there are many questions regarding this construct A host of variables are thought to contribute to one’s level of resilience including genetic (Feder, Nestler, & Charney, 2009), psychological (Lazarus, 1993), environmental (Yehuda, 1999), and biological factors (Hoge et al , 2007) However, several fundamental questions persist For example, why are women, those with lower

educational and income attainment, and those with a history of childhood maltreatment less resilient to stress-related psychiatric illness (Campbell-Sills et al., 2009).

Research examining resilience is generally concentrated on individuals who have been exposed to extreme stress; however, there is a paucity of research examining resilience in the general community. An alternative approach in the study of traumatic stress is the perspective that much can be learned from individuals who remain healthy following exposure to trauma. It has been suggested that resilience to violent, life threatening events is far more common than the literature suggests and the study of health and resilience should not follow under the same lens as chronic forms of dysfunction (Bonanno, 2004). Furthermore, there is a lack of distinction between the definition of *recovery* and *resilience*; as individuals who have sought help after a traumatic experience and eventually recover, and individuals who do not experience an interruption in psychological functioning following an event are often placed in the same category (McFarlane & Yehuda, 1996; Yehuda, Flory, Southwick, & Charney, 2006). Failing to make this distinction causes the potential erroneous assumption that individuals who are resilient engage in the same coping strategies as individuals who have spent time working to recover from the experience of trauma.

Coping

Coping is defined as the process used to modify adverse aspects of one's environment and to minimize internal threat caused by stress (Fleming, Baum, & Singer, 1984). Coping strategies consist of behavioural and cognitive attempts to manage difficult situations that exceed a person's resources (Fritsch et al., 2010). Strategies can be situation-specific, and the effectiveness of the approaches can vary with time (Billings &

Moos, 1981, Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986, Tennen, Affleck, Armeli, & Carney, 2000) Two types of coping have emerged as being particularly important in dealing with stressors Problem-focused coping refers to efforts to recognize, modify, or eliminate the impact of a stressor (Auerbach, 1989) Emotion-focused strategies typically include blame, withdrawal, denial, and emotional containment (Matheson & Anisman, 2003; Zeidner, 1995) Emotion-focused coping can also include attempts to avoid or circumvent the problem by engaging in such behaviours as watching television or engaging in other non-relevant tasks (Zeidner, 1995) The use of an inappropriate coping strategy to deal with stressors has been associated with psychological illness such as major depressive disorder (Anisman, Merali, & Hayley, 2008), and overall decreased resilience, while problem-focused coping has been found to be positively related to resilience (Campbell-Sills, Cohan, & Stein, 2006)

Trauma, Vulnerability and Resilience

It is necessary to differentiate *hardiness*, *posttraumatic growth*, and *vulnerability* – related constructs that are often associated with resilience. While resilience is considered to be an ability to continue despite hardship or adversity, hardiness is defined as the tendency to view a stressful experience as a surmountable challenge (Almedom, 2005) Individuals who score high on measures of hardiness expect life to present challenges and believe they can influence life events (Tedeschi & Calhoun, 2004) In contrast to hardiness, posttraumatic growth refers to positive psychological change that results after a struggle with highly challenging life circumstances (Tedeschi & Calhoun, 2004) It refers to more than a return to baseline (resilience), but rather to an improvement in functioning (Tedeschi & Calhoun, 2004)

Resilience and vulnerability are related concepts. Vulnerability factors are not necessary or sufficient to explain the onset of a disorder, or predict its course, but rather place an individual at increased risk of a negative outcome (McFarlane & Yehuda, 1996). Alternatively, resilience factors serve to minimize the intensity of acute distress and protect the individual (McFarlane & Yehuda, 1996). Even if the individual does not develop PTSD at this point, the experience of a traumatic event may alter their vulnerability to subsequent stressors (McFarlane & Yehuda, 1996).

Genetic and neurological factors have been linked to PTSD. Twin studies have shown that genetic factors influence exposure to potentially traumatic events such as combat exposure or assaultive violence. This is likely because personality characteristics are partially heritable and influence the likelihood that an individual would put themselves in a potentially harmful environment and engage in risky behaviour (Lyons et al., 1993). Susceptibility to PTSD may also result from neuroanatomical differences, such as alterations in the hippocampus (Jacobson & Sapolsky, 1991). Indeed, a meta-analysis has established that trauma exposure is associated with smaller hippocampal volumes and these effect sizes increase with PTSD severity (Karl et al., 2006). What remains unknown is whether hippocampal diminution results as a consequence of extreme stress or whether a small hippocampus predicts vulnerability to PTSD. Indeed, it has been reported that the co-twin of an individual suffering PTSD following a war experience had a hippocampus of reduced size even though they hadn't been traumatized or suffered PTSD (Pitman et al., 2006). Thus, it seems that small hippocampal volume might well be a vulnerability factor regarding PTSD rather than being a consequence of the disorder (Gilbertson et al., 2002).

The Present Investigation

Considerable research has focused on the effects of traumatic life events on symptoms of PTSD and depression. Despite the importance and implications of understanding what contributes to resilience against these disorders, the construct remains greatly understudied when compared to psychopathology and vulnerability (Campbell-Sills et al., 2006). Understanding resilience and what can foster its growth has significant implications for clinical practice.

The purpose of this research was to examine resilience and factors that may contribute to resilience from symptoms of PTSD and depression in a sample of community members and Carleton University students.

It was hypothesized that

1. Individuals who experienced high levels of childhood psychological maltreatment would develop greater symptoms of PTSD and depression than those with low levels of childhood psychological maltreatment.
2. The relationship between childhood psychological maltreatment and symptoms of PTSD and depression would be mediated by resilience.
3. Consumption of social support would moderate the relationship between childhood psychological maltreatment and resilience.

Methods

Participants

Participants comprised community members ($n = 329$) and Carleton university students ($n = 60$; total $n = 389$). Community members included 268 females and 61 males aged 18 to 68 ($M = 31.7$, $SD = 10.40$); the student sample included 54 females and 6 males, aged 17 to 29 ($M = 20.93$, $SD = 3.01$). The mean age of the entire sample was 30 ($SD = 10.39$, $range = 17-68$). Racial background of the majority of the sample was Caucasian (65%), Asian (12%), South Asian (8%), South East Asian (2%), Arabic, (2%), Black (2%), and Other (8%).

Procedure

Students were recruited via on-campus poster advertisement and the Carleton University student participant pool (SONA). Community members were recruited through PTSD support websites, Facebook groups and by word of mouth. Participation required the completion of a questionnaire battery that was made available online. This study was approved by the Carleton University Ethics Board (Approval #: 10-073). Persons wishing to participate were directed to a secure web page where they read an informed consent form (Appendix A) and clicked the appropriate button to provide consent. All participants who completed the study and provided valid data received a \$5.00 gift card to their choice of Starbucks or Tim Hortons (students also had the option of a 0.5% bonus incentive towards a participating course) as partial compensation for their time.

Measures

- 1 *Demographic Information* demographic classification comprising sex, age, education, employment, and experience of a traumatic event. If participants indicated that they had experienced a traumatic event, they were further asked about the number of events, and how they dealt with any potential effects of the trauma (Appendix B)
- 2 *Survey of Coping Profiles Endorsed* (54-item SCOPE, Matheson & Anisman, 2003) is a 54-item questionnaire designed to measure strategies used to deal with problems or stressors in their lives. If the respondent has not experienced a traumatic event, they were asked to think of a hypothetical event they could experience. Each item is rated on a five-point scale ranging from zero “never” to five “almost always”. Three factors are measured on this scale, including problem and emotion-focused style, and avoidant coping. The reliability for the SCOPE was high with a Cronbach’s alpha of .92 (Appendix C)

Prior to conducting analyses, the 13 items of the SCOPE were subjected to principal component analysis (*PCA*). Inspection of the correlation matrix revealed the presence of many coefficients .3 and above. The Kaiser-Meyer-Olkin value was .84, exceeding the recommended value of .6 (Kaiser, 1974) and Bartlett’s Test of Sphericity (Bartlett, 1954) reached statistical significance, supporting the factorability of the correlation matrix. PCA revealed the presence of three components with eigen values exceeding 1, explaining 31.4%, 17.4%, and 6.8% of the variance respectively. An inspection of the scree plot revealed a clear break after the third component. Interpretation of the three components was consistent with previous research on the

SCOPE, with variables loading onto problem-focused, emotion-focused, and avoidant coping

An analysis was conducted to assess whether there was a difference between individuals who indicated that they had experienced a traumatic event ($n = 252$), compared to those thinking of a hypothetical event ($n = 136$). There was no significant difference for the emotion-focused group (no trauma $M = 2.05$, $SD = .81$, trauma, $M = 2.11$, $SD = .83$) or for the avoidant group (no trauma $M = 2.18$, $SD = .65$, trauma, $M = 2.25$, $SD = .66$). There was a difference for the problem-focused group (no trauma $M = 2.26$, $SD = .65$, trauma $M = 2.10$, $SD = .66$), however, the difference was small and accounted for only a small portion of the variance ($\eta^2 = 0.01$).

- 3 *Consumption of Social Support Scale* (CSS, Bertera, 1997) is a 12-item questionnaire designed to measure the frequency of social support received over the past few months (i.e., “You had someone who listened to you talking about your private feelings”). Each item is rated on a five-point scale ranging from one “not at all” to five “about every day”. The CSS demonstrated high internal consistency with a Cronbach’s alpha of .89 (Appendix D).
- 4 *Connor-Davidson Resilience Scale* (CD-RISC, Connor & Davidson, 2003) is a 23-item self-report scale that measures resilience based on the respondents’ experiences over the past month (i.e., how they handle challenges). Each item is ranked using a four-point Likert scale ranging from zero for “not true at all” to four “true nearly all the time”. This scale comprises five factors identifying the different aspects of resilience: 1) personal competence, high standards, and tenacity, 2) trust in one’s instincts, tolerance of negative affect, and strengthening effects of stress, 3) positive acceptance of change, and

secure relationships, 4) control, 5) spiritual influences. The CD-RISC demonstrated high internal consistency with a Cronbach's alpha of .94 (Appendix E)

- 5 *PTSD Check List, Civilian Version* (PCL-C, Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item questionnaire that measures the degree to which symptoms associated with PTSD in civilians are experienced (i.e., hyperarousal, avoidance, and re-experiencing symptoms), based on the DSM-IV-TR criteria. The questionnaire asks respondents how often they have experienced symptoms in the past month on a scale that ranges from one "not at all" to five "extremely." A summed score of 44 or higher on the PCL-C is typically associated with a diagnosis of PTSD (Smith, Egert, Winkel, & Jacobson, 2002). In this study the scale was found to be highly reliable with a Cronbach's alpha of .95 (Appendix F)
- 6 *Beck Depression Inventory* (BDI, Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item questionnaire that assesses current depressive symptoms on a four-point scale (i.e., affective, behavioural, cognitive, and somatic symptoms). A score of 19 or above is indicative of moderate depression, 10 to 18 mild depression, and 9 and below is low depression (Beck & Steer, 1987). This study found the BDI to have strong internal consistency with a Cronbach's alpha of .93 (Appendix G)
- 7 *The Childhood Maltreatment Questionnaire* (CMQ, Demare, 1996) is a 72-item scale that assesses the extent to which adults had experienced forms of psychological maltreatment from their primary caregivers before the age of 18. Items range from one "never" to five "very often." This study found the CMQ to have high internal consistency with a Cronbach's alpha of .99 (Appendix H)

Following the completion of the questionnaires, participants read a debriefing, which provided them with additional information concerning the study, in addition to contact numbers (Appendix I)

Results

Descriptives

Preliminary analyses revealed no significant difference between community members and students on PTSD (community $M = 44.43$, $SD = 18.53$, students $M = 45.40$, $SD = 17.26$), depression (community $M = 13.73$, $SD = 10.57$, students $M = 13.53$, $SD = 10.59$), and childhood maltreatment (community $M = 55.85$, $SD = 57.33$, students $M = 62.19$, $SD = 61.62$) scores. An independent samples t-test was conducted to compare whether males and females differed on PTSD, depression, and childhood maltreatment scores. There was no significant difference in between males ($M = 42.99$, $SD = 18.0$) and females ($M = 44.91$, $SD = 18.40$), $t(385) = .78$, $p = .44$ (two-tailed) on PTSD scores, depression scores did not significantly differ for females ($M = 14.06$, $SD = 10.86$) and males ($M = 11.97$, $SD = 8.84$), $t(387) = 1.68$, $p = .10$ (two-tailed), and childhood maltreatment scores were not significantly different for females ($M = 57.04$, $SD = 59.63$) and males ($M = 55.73$, $SD = 49.63$), $t(385) = 1.68$, $p = .097$ (two-tailed). The magnitude of the difference in the means was very small for PTSD (mean difference = 1.92, 95% CI -2.92 to 2.46, $\eta^2 = .002$), depression (mean difference = 2.09, 95% CI -3.7 to 4.54, $\eta^2 = .004$), and childhood maltreatment (mean difference = 1.31, 95% CI -14.02 to 16.64, $\eta^2 = .0004$). See Table 1 for scale descriptives.

Bivariate zero-order Pearson correlations were performed between PTSD and a number of variables, including depression, childhood maltreatment, social support,

resilience, problem-focused coping, emotion-focused coping, avoidant coping. As expected, PTSD was associated with depression, childhood maltreatment, lower resilience, emotion-focused coping, and avoidant coping, but not with consumption of social support, or problem-focused coping (Table 2).

Table 1

Descriptive Statistics (Means and Standard Deviations).

Measure	<i>M</i>	<i>SD</i>
PTSD Check List, Civilian Version	44.58	18.32
Beck Depression Inventory	13.7	10.56
The Childhood Maltreatment Questionnaire	56.82	57.96
Consumption of Social Support Scale	22.84	9.46
Connor-Davidson Resilience Scale	67.36	15.57
Survey of Coping Profiles Endorsed Problem-focused	2.16	0.69
Survey of Coping Profiles Endorsed Emotion-focused	2.09	0.83
Survey of Coping Profiles Endorsed Avoidant coping	2.23	0.65
Resilience Factor 1 Tenacity	2.84	0.71
Resilience Factor 2 Trust in one's instincts	2.54	0.67
Resilience Factor 3 Acceptance of change	2.82	0.7
Resilience Factor 4 Control	2.63	0.85
Resilience Factor 5 Spiritual influences	2.51	1.05

Table 2

Zero-order Pearson Correlations between PTSD, Depression, Childhood Maltreatment, Social Support, Resilience, Problem-Focused Coping, Emotion-Focused Coping, and Avoidant Coping (N = 387).

	1	2	3	4	5	6	7
1 PTSD							
2 Depression	.68**						
3 Childhood Maltreatment	.47**	.53**					
4 Social Support	.08	-.03	.04				
5 Resilience	-.38	-.56**	-.25**	.3**			
6 Problem-Focused Coping	-.09	-.21**	.0	.54**	.37**		
7 Emotion-Focused Coping	.58**	.56**	.32**	.30**	-.37**	.22**	
8 Avoidant Coping	.35**	.30**	.20**	.19**	-.07	.23**	.55**

** $p < .001$

Due to the high correlation between PTSD and depression, it was important to determine whether PTSD accounted for any variance over and above symptoms of depression in individuals who experienced childhood maltreatment. In a hierarchical multiple regression model, depression accounted for 53% of the variance in childhood maltreatment. After the entry of PTSD into the model, the total variance explained as a whole was 55%, $F(2, 382) = 83.10, p < .001$. Thus, both measures together explained an additional 2% of the variance in childhood maltreatment, $R^2_{\text{cha}} = 0.02, F_{\text{cha}}(1, 382) = 11.96, p < .001$. With both depression and PTSD in the model, both were statistically significant, with depression having a higher beta value ($B = .39, p < .001$) than PTSD ($B = .20, p = .001$).

When coping strategies were grouped into problem-focused, emotion-focused, and avoidant coping, it was found that problem-focused was positively predictive of resilience (problem-focused $r = .37, n = 387, p < .001$), emotion-focused coping negatively correlated with resilience (emotion-focused $r = -.37, n = 387, p < .001$), and avoidant coping was not correlated with resilience ($r = -.07, n = 387, n.s.$, Table 2).

Hierarchical multiple regression was used to test whether resilience accounted for variance related to PTSD over and above those related to coping styles. The three dimensions of coping explained 63% of the variance on symptoms of PTSD. After the entry of resilience, the total variance explained increased by a further 0.7%, $F_{\text{cha}}(1, 380) = 4.36, p < .05$ (Table 3).

Table 3

Hierarchical Regression Assessing the Contribution of Coping and Resilience factors in Predicting Symptoms of PTSD.

	<i>b</i>	<i>SE b</i>	β
<i>Step 1</i>			
Constant	26.49	3.14	
Problem-Focused	-6.51	1.1	-.25**
Emotion-Focused	13.08	1.06	.59**
Avoidant Coping	2.07	1.34	.07
<i>Step 2</i>			
Constant	33.68	4.65	
Problem-Focused	-5.28	1.24	-.2**
Emotion-Focused	11.88	1.2	.54**
Avoidant Coping	2.43	1.34	.09
Resilience	-0.12	0.06	-.1*

Note $R^2 = .39$ for Step 1 $\Delta R^2 .01$ for step 2 ($p < .05$)

* $p < .05$, ** $p < .001$

Using symptoms of depression as an outcome variable in a hierarchical multiple regression, it was found that resilience accounted for variance over and above those related to coping styles. The dimensions of coping accounted for 66% of the variance on symptoms of depression. After the entry of resilience, an additional 7% was explained, $F_{\text{cha}}(1, 382) = 50.14, p < .001$ (Table 4).

Table 4

Hierarchical Regression Assessing the Contribution of Coping and Resilience factors in Predicting Symptoms of Depression.

	<i>b</i>	<i>SE b</i>	β
<i>Step 1</i>			
Constant	7.23	1.76	
Problem-Focused	-5.4	0.61	-.35**
Emotion-Focused	7.83	0.59	.61**
Avoidant Coping	0.78	0.75	.05
<i>Step 2</i>			
Constant	20.14	2.46	
Problem-Focused	-3.17	0.66	-.21**
Emotion-Focused	5.66	0.64	.44**
Avoidant Coping	1.42	0.71	.09*
Resilience	-0.22	0.03	-.32**

Note $R^2 = .66$ for Step 1 $\Delta R^2 = .07$ for step 2 ($p < .001$)

* $p < .05$, ** $p < .001$

By definition, those individuals with PTSD or depression would be deemed to be less resilient than individuals without these features. Before assessing the factors that might mediate these relations, a scatterplot was used to graph the relationship between resilience and symptoms of PTSD and depression respectively. The scatterplot shows a moderate negative relationship between resilience and symptoms of PTSD, $r = -.38$, $p < .001$ (see Figure 1). Therefore, as resilience increases, symptoms of PTSD decrease.

Figure 1. Symptoms of PTSD by Resilience.

Paralleling the PTSD results, the scatterplot shows a moderate to strong negative relationship between resilience and depression symptoms, $r = -.56$, $p < .001$ (see Figure 2). Therefore, as resilience increases, symptoms of depression decrease.

Figure 2. Symptoms of Depression by Resilience.

As indicated earlier, childhood maltreatment, PTSD, depression, and resilience were highly correlated (Table 2); thus mediation analyses were performed to assess whether resilience mediated the relationship between childhood maltreatment and symptoms of PTSD. To assess the role of the mediating variable, bootstrapping techniques were used using the recommended 5000 random samples from the dataset and, given the small sample size and consequently low power, 95% bias corrected confidence intervals (Preacher & Hayes, 2008). The indirect effects of childhood maltreatment on PTSD scores remained significant following the entry of resilience as a mediator. The confidence intervals for the total mediation effect did *not* include zero, indicating a partial mediated model (Table 5). These findings are consistent with the interpretation that childhood maltreatment is mediated by resilience, which in turn, is associated with decreased levels of PTSD. Analyses of alternative models revealed that the relationship between childhood maltreatment and resilience was mediated by PTSD, (CI: -.06, -.03) thus it is premature to draw conclusions of a directional nature.

Table 5

Direct and Indirect (through Resilience) Effects of Childhood Maltreatment on Symptoms of PTSD: Results of Bootstrap Analysis.

	<i>Coefficient</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Relations between childhood maltreatment (IV) and resilience (mediator)	- .07	0.01	-5.10	.00
Unique relation between resilience (mediator) and PTSD Scores (DV)	-.33	0.05	-6.3	.00
Total Effect of childhood maltreatment (IV) on PTSD (DV) (c path)	.15	0.01	10.55	.00
Direct Effect of childhood maltreatment (IV) on PTSD (DV) (c-prime path)	.13	0.01	9.12	.00
Mediator	Bootstrapping 95% CI			
Resilience	Lower	Upper		
	0.01	0.04		

Given that the relationships between childhood maltreatment, resilience, and PTSD were significant, a multiple mediation analysis was conducted to assess which individual resilience subscales were predictive of symptoms of PTSD. The model containing all five resilience subscales was significant $F(6, 378) = 31.99, p < .001$ and accounted for 34% of the variance. Upon examining individual factors, “personal competence, high standards, and tenacity”, “positive acceptance of change and secure relationships”, and “control” were individually predictive of symptoms of PTSD, while “trust in one’s instincts, tolerance of negative affect, and strengthening effects of stress” and “spiritual influences” were not (Table 6).

Table 6

Multiple Mediated Direct and Indirect Effects of Childhood Maltreatment (CM) on PTSD Symptom Scores through Factors of Resilience. Factor 1 (Tenacity), 2 (Trust in one's instincts), 3 (Acceptance of Change), 4 (Control), and 5 (Spiritual Influences).

					BCa 95% Confidence	
					Interval	
	<i>Coefficient</i>	<i>SE</i>	<i>t</i>	<i>p</i>	Lower	Upper
Unique relations between Resilience Factors (mediators) and PTSD (DV)						
Tenacity	5.66	2.12	2.67	.01		
Trust in one's instincts	-1.22	2.13	-.57	.57		
Acceptance of change	-10.13	2.19	-4.61	.00		
Control	-2.93	1.49	-1.97	.05		
Spiritual influences	.93	.78	1.20	.23		
Total Effect of CM on PTSD (c path)	15	.01	10.39	.00		
Direct Effect of CM on PTSD (c' path)	11	.01	7.80	.00		
Total mediated effect					.02	.05
Tenacity mediated effect					-.03	-.01
Trust in one's instincts mediated effect					-.00	.01
Acceptance of change mediated effect					.02	.06
Control mediated effect					.0003	.03
Spiritual influences mediated effect					-.01	.00

To determine whether resilience would also be associated with decreased depression scores in individuals who experienced childhood maltreatment, mediation analyses were performed. As seen in Table 7, the effects of childhood maltreatment on depression scores remained significant following the entry of resilience as a mediator. Once again, the confidence intervals for the total mediation effect did not include zero, indicating a partial mediation model. Therefore, childhood maltreatment is mediated by resilience, which in turn, is associated with decreased depression scores $B = .10$, $t(385) = 12.09$, $p < .001$. An analysis of alternative models revealed a significant mediated effect wherein depression mediated the relationship between childhood maltreatment and resilience (CI = .11, .06). Thus, once more, it is premature to conclude the direction of this relationship.

Table 7

Direct and Indirect (through Resilience) Effects of Childhood Maltreatment on Symptoms of Depression: Results of Bootstrap Analysis.

	<i>Coefficient</i>	<i>SE</i>	<i>t</i>	<i>P</i>
Relations between childhood maltreatment (IV) and resilience (mediator)	-0.07	0.01	-4.98	.00
Unique relation between resilience (mediator) and depression scores (DV)	-.31	0.03	-12.03	.00
Total Effect of childhood maltreatment (IV) on depression (DV) (c path)	.10	0.01	12.09	.00
Direct Effect of childhood maltreatment (IV) on depression (DV) (c-prime path)	.08	0.01	10.77	.00
Mediator	Bootstrapping 95% CI			
Resilience	Lower	Upper		
	0.01	0.03		

As the relationship with childhood maltreatment, resilience, and depression was significant, a multiple mediation analysis was conducted to assess which individual resilience subscales were predictive of symptoms of depression. The model was significant $F(6, 380) = 62.98, p < .001$ and accounted for 50% of the variance in symptoms of depression. Upon examining individual factors, “positive acceptance of change and secure relationships” and “control” were individually predictive of symptoms of depression, while “personal competence, high standards, and tenacity”, “trust in one’s instincts, tolerance of negative affect, and strengthening effects of stress” and “spiritual influences” were not (Table 8).

Table 8

Multiple Mediated Direct and Indirect Effects of Childhood Maltreatment (CM) on Symptoms of Depression Through Factors of Resilience: Factor 1 (Tenacity), 2 (Trust in one's instincts), 3 (Acceptance of Change), 4 (Control), and 5 (Spiritual Influences).

	BCa 95% Confidence				
					Interval
	<i>Coefficient</i>	<i>SE</i>	<i>t</i>	<i>p</i>	Lower Upper
Unique relations between Resilience Factors (mediators) and Depression (DV)					
Tenacity	- .14	.106	- 1.3	.90	
Trust in one's instincts	- .90	.107	- 8.5	.40	
Acceptance of change	-2.89	.110	-26.2	.01	
Control	-3.43	.074	-46.1	.00	
Spiritual influences	- .15	.039	- 4.0	.69	
Total Effect of CM on Depression (c path)	.10	.01	12.14	.00	
Direct Effect of CM on Depression (c' path)	.07	.01	9.47	.00	
Total mediated effect					.02 .04
Tenacity mediated effect					-.01 .01
Trust in one's instincts mediated effect					-.00 .01
Acceptance of change mediated effect					.002 .02
Control mediated effect					.01 .02
Spiritual influences mediated effect					-.00 .00

The relationship between childhood maltreatment, social support, and resilience and was examined. To this end, a hierarchical regression analysis was conducted to assess whether social support moderated the relationship between childhood maltreatment and symptoms of PTSD. The model containing childhood maltreatment and social support accounted for 3.7% of the variance, $R^2 = .14$, $F(2, 382) = 29.76$, $p < .001$. In this model, childhood maltreatment had a significant negative relationship with resilience $B = -.26$, $t(382) = -5.38$, $p < .001$. As well, social support was positively related to resilience, $B = .27$, $t(382) = 5.72$, $p < .001$. The interaction between these variables accounted for 4% of the variance on resilience, $R^2 = .40$, $F(1, 381) = 24.05$, $p < .001$. Adding the moderator effect accounted for a significant amount of variance over and above what was already explained, $t(381) = 3.33$, $R^2_{cha} = .02$, $F^2_{cha}(1, 381) = 11.05$, $p < .01$. The moderating effect of social support was investigated further by performing a simple slope analysis to assess the relationship between childhood maltreatment and resilience. In order to understand the nature of the interaction, high and low values of social support were graphed with high values defined as one standard-deviation above the mean, and low values one standard-deviation below the mean. As depicted in Figure 3, with greater childhood maltreatment, resilience was particularly low among those with low levels of support and was hardly reduced among those individuals that reported high levels of social support. In effect, although early life maltreatment was associated with low levels of resilience, this relationship could be offset by social support factors.

* $p < .001$

Figure 3. Hierarchical Regression Lines showing the Moderating effect of Social Support (High vs. Low) on the Relation between Childhood Maltreatment and Resilience.

It was of interest to determine whether social support would moderate the mediating role of resilience in the relationship between childhood maltreatment and PTSD. There are three potential ways that social support could moderate the meditational relationship: 1) social support could moderate the strength of the relationship between childhood maltreatment and resilience, 2) social support could moderate the relationship between resilience and PTSD, 3) social support could moderate the relationship between childhood maltreatment and resilience, and between resilience and PTSD (Preacher, Rucker, & Hayes, 2007). It was found that social support served as a moderator only through its effects on the relationship between childhood maltreatment and resilience (Table 9). The statistically significant interaction between social support and resilience in the model implies that the indirect effect of childhood maltreatment on PTSD through resilience is moderated by social support. The Johnson-Neyman significance region cut-off was 32.01, indicating that the mediated model was significant only when social support was less than 32.01. This suggests that when social support was low, childhood maltreatment influenced the degree of resilience, which was associated with PTSD. However, under conditions of relatively high social support the contribution of childhood maltreatment was no longer present.

A similar pattern emerged with depression. After testing three potential models, it was found that social support served as a moderator through its effects on the relationship between childhood maltreatment and resilience (Table 10). The Johnson-Neyman significance region cut-off was 31.92, indicating that the mediated model was significant only when social support was less than 31.92. Thus, when social support was low, the experience of childhood maltreatment influenced the degree of resilience, which was associated with depression. Under conditions of high social support, the contribution of childhood maltreatment was no longer present.

Discussion

It is well established that traumatic stressors lead to the development of PTSD and depression (Brewin et al , 2000, Foa, Steketee, & Olasov-Rothbaum, 1989, Shalev et al , 1998, Yehuda, 2002), and several variables have been identified that are thought to reflect resilience factors. Few such studies, however, have evaluated resilience and the consumption of social support as protective factors against symptoms of PTSD and depression in individuals who experienced childhood maltreatment. Among individuals who experienced childhood maltreatment by a primary care-giver, social bonds may be particularly damaged or weakened, hence depriving individuals of a potentially important way of dealing with further stressors (Charuvastra & Cloitre, 2008). In fact, the present investigation suggested that the relationship between childhood maltreatment, resilience, and symptoms of PTSD (and depression respectively) might be moderated by social support. As well, as expected, resilience (specifically tenacity, positive acceptance of change, secure relationships, and control) mediated the relationship between early experiences and subsequent symptoms of posttraumatic stress and that of depressive symptoms.

Childhood Maltreatment and Symptoms of PTSD and Depression

As hypothesized, PTSD and depressive symptoms were related, just as these disorders frequently co-occur clinically (Campbell et al , 2007, Oquendo et al , 2005). In addition, there was a strong, positive correlation between childhood maltreatment and symptoms of PTSD and depression, those individuals with higher PTSD and depression scores recalled more severe childhood maltreatment than those with lower PTSD and depression scores. This finding is consistent with previous reports that established a link

between early life adversity and PTSD and depression (Bernet & Stein, 1999; Briere & Runtz, 1988; Cabrera, Hoge, Bliese, Castro, & Messer, 2007; Holmes & Robins, 1987; McCroy, Brito, & Viding, 2010; Nemeroff et al., 2006; Parker, 1993; Wright, 2007). These findings are also supported by developmental studies that have linked early life trauma with altered brain structures, such as reduced hippocampal volume (Heim, Shugart, Craighead, & Nemeroff, 2010), thus preventing these areas from developing normally and from responding appropriately to trauma during adulthood (Teicher et al., 2003).

It is uncertain how early life events are translated into behavioural disturbances manifested in adulthood, although it has been suggested that children who are emotionally abused receive negative messages from primary caregivers on a regular basis, and these negative messages dispose individuals to view themselves and events surrounding them in a negative fashion (Ingram, 1984). Ultimately, this negativity, as described by Beck (1976) leads to depressive illness. In this regard, it is even possible that subsyndromal levels of depression might be present among individuals who experienced early life adverse events, rendering them particularly vulnerable to subsequent traumatic experiences. Of course, like numerous other studies, the present findings were based on self-reported recall of events, and it is certainly possible that the individuals' current mental state (PTSD and depressive symptoms) would have coloured their views of past events.

Childhood Maltreatment, Resilience, and Symptoms of PTSD and Depression

The factors that comprise resilience have been associated with decreased PTSD and depressive symptoms in individuals who experienced trauma (Agaibi & Wilson,

2005, Haddadi & Besharat, 2010, Southwick, Vythilingam, & Charney, 2005) However, there have been different views of what factors make up resilience For example, in their review of the PTSD literature, Krystal and Neumeister (2009) suggest that resilience entails a lower lifetime trauma load (Breslau, Peterson, & Schultz, 2008), cognitive flexibility, optimism, mastery, religion, and purpose in life, as well as the use of “adaptive coping strategies” (defined as emotional expression or the ability to elicit social support (Alim et al , 2008, Yehuda et al , 2006) In the present investigation, the factors that comprised resilience were those defined by Connor and Davidson (2003), and essentially consisted of five dimensions, namely “personal competence, high standards, and tenacity”, “trust in one’s instincts”, “positive acceptance of change and secure relationships”, “control”, and “spiritual influences” Whether the dimensions described by Connor and Davidson and those listed by other investigators (e g , Krystal & Neumeister, 2009) are actually congruent is uncertain, and thus the present findings need to be considered solely from the perspective of the Connor Davidson analysis

In line with expectations, resilience partially mediated the relationship between early life maltreatment and symptoms of PTSD and depression, respectively Essentially, individuals who had experienced maltreatment, but who were highly resilient had less severe symptoms of PTSD and depression than individuals who were low-resilient Although it is intuitively appealing to conclude that diminished resilience is responsible for the link between childhood maltreatment and symptoms of PTSD and depression, the data are correlational and thus causal conclusions cannot be drawn, nor is the directionality of the relationship clear Indeed, as indicated earlier, directional analyses of the present findings revealed that the relationship between childhood maltreatment and

resilience was mediated by symptoms of PTSD (and depression in a second model). The assumption being made is that resilience leads to decreased PTSD and depressive symptoms in individuals who experienced childhood maltreatment; however, the nature of the data do not preclude the possibility that those with high PTSD and depressive symptoms view themselves more negatively and thus responded to questions on the resilience measure in a more negative manner.

Resilience was found to account for variance in symptoms of PTSD (albeit a small amount) and depression over and above dimensions related to coping. This is in line with the view that coping methods are an integral part of resilience (Krystal & Neumeister, 2009). In this regard, a distinguishing difference between high- and low-resilient individuals is the capacity to learn from negative life events and use this knowledge to cope more effectively (Salovey, Bedell, Detweiler, & Mayer, 1999). Consistent with earlier reports (Campbell-Sills et al., 2006), in the present study resilience was negatively related to emotion-focused coping and positively related to problem-focused coping, supporting the view that certain forms of coping are linked to resilience and may be an essential feature of resilience (Campbell-Sills et al., 2006; Higgins & Endler, 1995).

The present findings indicated that “personal competence, high standards, and tenacity” negatively contributed to PTSD symptom scores, whereas “acceptance of change and secure relationships”, and “control” were positively related to PTSD symptoms. “Trust in one’s instincts” and “spiritual influences”, in contrast, were not significantly predictive of PTSD symptoms. The same resilience factors that were predictive of PTSD symptom scores were also predictive of depression, with the

exception of “personal competence, high standards, and tenacity” The present findings were consistent with those reported concerning combat related trauma in a sample of older reserve National Guard veterans, in which “control” and “acceptance of changes” were associated with traumatic stress (Pietzrak, Johnson, Goldstein, Malley, & Southwick, 2009)

Childhood Maltreatment, Social Support, and Symptoms of PTSD and Depression

The current study revealed that social support was not tied to PTSD or depressive symptoms, which contrasts with previous studies that had established a link between social support and these pathologies (Brewin et al , 2000, Charuvastra & Cloitre, 2008) However, social support was found to moderate the relationship between childhood maltreatment and resilience Essentially, as previously reported (Bonanno, 2004, Bonanno, Papa, Lalande, Westphal, & Coifman, 2004, King et al , 1998) these data indicated that social support was associated with increased resilience It has been suggested that social support acts as a buffer that intervenes between a stressful event and the individuals’ reaction by impacting the cognitive evaluation of the event, thus reducing or eliminating the individuals’ negative response (Cohen & Wills, 1985, Tremblay, Hebert, & Piche, 1999) Social support might also improve functioning by promoting effective coping strategies (Holahan, Moose, Holahan, & Brennan, 1995), favour a person’s positive acceptance of change (one of the Connor-Davidson dimensions of resilience) and promote active coping responses (Sharkansky et al , 2000) Indeed, in the present investigation resilience related to “positive acceptance of change and secure relationships” was positively related to consumption of social support and the use of problem-focused coping

Resilience factors and social support together were related to lower levels of PTSD and depressive symptoms among individuals who experienced childhood maltreatment. Previous research revealed that resilient individuals are more proficient at building social networks; those with strong social support have a more optimistic view of life, higher self esteem, and more positive events in their life (Sarason et al., 1983). Thus, resilience and social support appear to work together to promote increased positive affect and adaptive coping. In this regard, social support seeking is likely a characteristic of individuals who engage in problem-focused coping strategies (Matheson & Anisman, 2003).

The family is the first social network experienced and, as such, sets the stage for future relationships (Charuvastra & Cloitre, 2008). Children with a history of maltreatment are likely to isolate themselves or withdraw during difficult times. Thus, one of the ways childhood maltreatment could potentially dispose an individual to an increased risk of PTSD in adulthood is through the impaired ability to benefit from a social network (Charuvastra & Cloitre, 2008). These findings underscore the importance of the promotion of social support in fostering resilience in order to decrease symptoms of psychopathology.

Conclusions and Limitations

There are several limitations of the present investigation that need to be considered. The primary limitation of this study is that it relied on self-reported data obtained through questionnaires. As already indicated, it is possible that individuals with symptoms of PTSD or depression have a biased recall of negative events in their childhood. There is, however, evidence suggesting that early life recollections, including

those of abuse, are generally valid (Brewin, Andrews, & Gotlib, 1993). This said, the validity of individual's claims regarding early abuse in the present study was not substantiated, and hence the possibility cannot be dismissed that the relationships observed stemmed from recall biases.

Second, although females have a higher incidence of PTSD and depression than males (Breslau et al., 1999; Tolin & Foa, 2006; Weissman & Klerman, 1977), this gender difference was not significant in the present study. Females generally reported higher PTSD and depression scores than males, although not significantly so. The mean scores of males and females approach the cut-off for PTSD, and the absence of a gender difference likely stems from the fact that participant recruitment involved targeting those who experienced trauma, rather than individuals at large.

As previously mentioned, the nature of the relationship between childhood maltreatment, resilience and pathology is unclear. It was found in the present investigation that resilience served as a mediator between childhood maltreatment and PTSD (and depression in a second model). However, in assessing alternative models, it was found that PTSD and depression also mediated the relationship between childhood maltreatment and resilience. It is possible that those with high PTSD and depressive symptoms view themselves more negatively and thus responded to questions on the resilience measure in a more negative manner.

Finally, although data presented are statistically significant, in some instances the effect sizes of mediation and moderation models were very small and this should be taken into account when considering the clinical significance of this data.

Implications

Despite the limitations mentioned, the current study adds to the limited research on childhood maltreatment, social support, and resilience in relation to psychopathology. Most notably, this research highlights the importance of the combined effect of social support and resilience, and thus has implications for clinical practice, specifically for individuals at risk of developing symptoms of PTSD and depression. In this regard, the interaction between perceived control (an essential resilience variable) and social support might interactively protect against the symptoms of PTSD and depression. Whether or not these findings are essential for the development of PTSD (and depression) or can be used to ameliorate these symptoms is uncertain. Nevertheless, establishing greater resilience and emphasizing the need for social support might be fundamental in the preclusion of PTSD and depressive symptoms, especially among those that had experienced childhood maltreatment.

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Appendix A

Informed Consent (Community Version)

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title: Risk and Resiliency Factors for Symptoms of Posttraumatic Stress Disorder

Study Personnel: The following people are involved in this research and may be contacted at any time if you have any questions about the project, what it means, or concerns about how it was conducted:

Dr. Hymie Anisman, Faculty Member, Department of Psychology
Phone: 520-2600 ext. 2699)
Email: hanisman@ccs.carleton.ca

Dr. Kimberly Matheson, Faculty Member, Department of Psychology
Phone: 520-2684
Email: Kim_Matheson@carleton.ca

Ashlee Mulligan Graduate Researcher,
Phone: 520-2600 ext. 7513)
Email: amullig1@connect.carleton.ca

Sheena Aislinn Taha, Doctoral Researcher
Email: staha@connect.carleton.ca

If you have any ethical concerns about how this study please contact Dr. Monique Sénéchal, Chair of Carleton University Ethics Committee for Psychological Research, 613-520-1155, Monique_senechal@carleton.ca.

If you have any other concerns about the study please contact Dr. Janet Mantler, Chair of Carleton University Psychology Department, 613-520-2600, ext. 4173 janet_mantler@carleton.ca
Purpose and Task Requirements: The purpose of this study is to develop a greater understanding of resilience after exposure to trauma. This study has received clearance by the Carleton University Psychology Research Ethics Board (10-073). In order to participate in this study you will complete a series of measures on-line. We will be asking you to fill out questionnaires regarding several personal issues, including your psychological health. In addition, you will be given a series of questions that ask you about some potentially traumatic events you may have experienced (e.g. assault, war, or loss of a loved one) that may have affected how you deal with other events in your life, followed by questionnaires regarding your reactions, emotions and coping strategies with these situations. No sooner than 2 weeks after *valid* completion of the study will you will receive a \$5 gift card to your choice of Starbucks or Tim Hortons for your participation. The questionnaire should take approximately 45 minutes to complete.

Potential Risk and Discomfort: There are no physical risks in this study. Some individuals may experience discomfort when asked to respond to personal, sensitive questions.

Anonymity/Confidentiality: The data collected in this study will be kept confidential. Because we will want to reimburse those who provide validated data with \$5 gift card, we will have to be able to identify who you are on your questionnaire. However, we take special precautions to make sure that no-one else will be able to identify you and what your responses were. Your userID and password will be separated from your questionnaire data and kept in a separate and secured file by one of the research investigators who will keep this information confidential.

Right to Withdraw: The data collected in this study will be kept anonymous and confidential. Only your chosen "id name" will identify your questionnaire. Your answers will be separated from your name and personal information. If you request a paper version of the questionnaire be mailed to you, a self-addressed stamped envelope will be included in your package. Prior to mailing, a non-identifiable 6 digit code will be assigned to your package. This code will allow us to identify you for the purpose of the gift card mailing only. Your informed consent form will be separated from your questionnaire and kept in a separate and secured file by one of the research investigators. All individual answers will be combined for data analyses, and hence your individual name or responses would not be identifiable in any reports based on the data collected.

I have read the above description of the study. The data collected will be used in research publications and/or for teaching purposes. My selection of "Accept" indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

By clicking the "ACCEPT" button we are assuming that you have read the above information and have granted consent to participate in this study.

ACCEPT

DECLINE

Informed Consent (Student Version)

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Study Title Risk and Resiliency Factors for Symptoms of Posttraumatic Stress Disorder
 Study Personnel Ashlee Mulligan (Graduate Researcher, 520-2600 ext 2692)
 Sheena Taha (Doctoral Researcher, 520-2600 ext 4199)
 Dr Hymie Anisman (Faculty Investigator, 520-2699)
 Sarah Heinzle (Undergraduate Researcher, 520-2600 ext 2692)

If you have any ethical concerns about this study please contact Dr Monique Sénéchal, Chair of the Department of Psychology Research Ethics Committee at Carleton University at 613 520-2600, ext 1155

Purpose and Task Requirements The purpose of this study is to develop a greater understanding of resilience after exposure to trauma. This study has received clearance by the Carleton University Psychology Research Ethics Board (10-073). In order to participate in this study you will complete a series of measures on-line. We will be asking you to fill out questionnaires regarding several personal issues, including your psychological health. In addition, you will be given a series of questions that ask you about some potentially traumatic events you may have experienced (e.g. assault, loss of a loved one, motor vehicle accident) that may have affected how you deal with other events in your life, followed by questionnaires regarding your reactions, emotions and coping strategies with these situations. The questionnaire should take approximately 45 minutes to complete. You will be awarded a 25% experimental credit or a gift certificate for \$5 to Tim Hortons or Starbucks.

Potential Risk and Discomfort: There are no physical risks in this study. There may be some discomfort or anxiety experienced when thinking about various stressors or difficulties in your life. Please be advised that it is normal to briefly feel sad or anxious when reflecting on traumatic events you may have experienced. Some people who have experienced traumas may feel more emotional than usual, and/or react in unusual ways to relatively minor events in their everyday life.

Anonymity/Confidentiality: The data collected in this study will be kept anonymous and confidential. Only your chosen "id name" will identify your questionnaire. Your answers will be separated from your name and personal information. Your informed consent form will be separated from your questionnaire and kept in a separate and secured file by one of the research investigators. All individual answers will be combined for data analyses, and hence your individual name or responses would not be identifiable in any reports based on the data collected. Your information will be kept on for 5 years.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw **with no penalty whatsoever**. Furthermore, you have the right to not answer any questions you are uncomfortable answering. You can omit an answer from any question by simply leaving it blank. There is no penalty for leaving an answer blank. If you chose to withdraw from the study, you will still receive course credit. Gift cards will only be awarded for completed questionnaires. Simply not completing the study does not indicate you are choosing to officially withdraw. **To officially withdraw from the study click on the "Withdraw" button located on the bottom of the page.**

Data Validity: Before sending you the gift card, we will evaluate the validity of your answers to make sure you did not respond at random. Only those participants who have taken the time to read all the questions and provide us with valid responses will be sent a gift card. In the event that an individual has not responded in good faith, we will **NOT** honor the gift card for that participant. Please note that you are only allowed to participate in this study once.

I have read the above description of the study. The data collected will be used in research publications and/or for teaching purposes. My sign-in indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

I have read the above description of the study. The data collected will be used in research publications and/or for teaching purposes. My sign-in indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

Contact Information

The following people are involved in this research project and may be contacted at any time if you have any further questions about the project, what it means, or concerns about how it was conducted.

Ashlee Mulligan (Graduate Researcher, 520-2600 ext 2692)
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If you have any ethical concerns about how this study was conducted, please contact either of the following:

Dr. Monique Sénéchal, Department of Psychology Ethics Committee at Carleton University.
 613 520-2600 ext 1155

Dr. Janet Mantler, Chair, Department of Psychology, 520-2600 ext 4173

If you have any worries or concerns about your personal well-being you can contact the following services:

Carleton University Health and Counselling Services 520-6674

Student Services 520-3663

Student Academic Success Centre 520-7850

International Student Services Office 520-6600

First in Family Peer Mentor Program 520-7595

Study Homepage

You've now entered the study about risk and resiliency factors for symptoms of Posttraumatic Stress Disorder. In this study we are interested in developing a greater understanding of resilience after exposure to trauma. During this study you will be asked to complete a series of measures online. We will be asking you to fill out questionnaires regarding several personal issues, including your psychological health. In addition, you will be given a series of questions that ask you about some potentially traumatic events you may have experienced (e.g., assault, motor vehicle accident, or loss of a loved one) that may have affected how you deal with other events in your life, followed by questionnaires regarding your reactions, emotions and coping strategies with these situations.

Please note that, although this study is expected to take approximately 45 minutes, you will be able to log in and out of the study, should you wish to complete it over several sessions during a single week. However for privacy purposes, if the internet browser is idle for 5mins or more, you will automatically be directed to the Carleton University homepage, and your information will not be saved. Thank you!

Ready to begin the study?

Appendix B

Demographics and Medical History

The following is used for demographic purposes only, and will not be used to identify you.

1. How old are you? _____

Please place a ✓ in the box that best answers each of the questions below.

2. What is your sex?

- ☐ Male
☐ Female

3. What is your ethnic/racial identity?

- ☐ Asian (i.e. Chinese, Japanese, Korean)
☐ South Asian (i.e. East Indian, Pakistani, Punjabi, Sri Lankan)
☐ South East Asian (i.e. Cambodian, Indonesian, Laotian)
☐ Arabic
☐ Black
☐ South/Latin American
☐ Aboriginal
☐ Euro-Caucasian
☐ Other: *please specify:* _____

4. What is your religious affiliation?

- ☐ Protestant
☐ Catholic
☐ Jewish
☐ Muslim
☐ Buddhist
☐ Hindu
☐ Sikh
☐ Baha'i
☐ Atheist
☐ Agnostic
☐ Other: *please specify:* _____

5. What is your current relationship status? Please check the one that best applies to you.

- ☐ Single
☐ In a serious dating relationship
☐ Co-habiting
☐ Engaged

- ☐ Married
- ☐ Separated/Divorced
- ☐ Widowed

6. What is your current living arrangement? *Please check the one that best applies to you.*

- ☐ Living alone
- ☐ Living with friends
- ☐ Living with spouse/significant other
- ☐ Living with young children (13 years and younger)
- ☐ Living with older children (13 years and older)
- ☐ Other *please specify* _____

7. What is your citizenship status?

- ☐ Canadian citizen
- ☐ Landed immigrant Since when? _____ Country of origin? _____
- ☐ Student visa Since when? _____ Country of origin? _____
- ☐ Other *please specify*: _____

8. What is the highest level of education that you have completed?

- ☐ Grade school
- ☐ Some high school
- ☐ High school diploma
- ☐ Trade certificate/diploma
- ☐ Some college
- ☐ College diploma/degree
- ☐ Some university
- ☐ University degree

9. Are you currently employed?

- ☐ Yes, full time *please specify your occupation:* _____
- ☐ Yes, part time *please specify your occupation:* _____
- ☐ Retired *please specify your occupation:* _____
- ☐ On Leave (i.e., sick leave) *please specify your occupation:* _____
- ☐ Not employed at all

10. What is your estimate of your family's gross income per year?

- ☐ under \$15,000
- ☐ \$15,001 - \$29,999
- ☐ \$30,000 - \$44,999
- ☐ \$45,000 - \$59,999
- ☐ \$60,000 - \$74,999
- ☐ \$75,000 - \$89,999

☐ \$90,000 - \$104,999

☐ \$105,000 or more

11. Are you currently suffering from: (Please check all that apply)

☐ A minor illness (i.e., a cold)? If so, what? _____

☐ A major illness (i.e., chicken pox)? If so, what? _____

☐ A chronic illness (3 months + without remittance)? _____

☐ Mild pain?

☐ Severe pain?

☐ Chronic pain (3 months+, more days than not without remittance)?

☐ A diagnosed mental disorder?

If yes, what disorder? _____

Please indicate any current regimens of medications being taken to deal with psychological difficulties (i.e., anti-anxiety or anti-depression medications): _____

1. Have you ever experienced, witnessed, or been confronted with an event that involved actual or threatened death or serious injury, where your response involved intense fear, helplessness or horror:

☐ Yes

☐ No

If yes, please complete the following section.

If no, please exit to the next section of the questionnaire.

1. a) What was the event? _____

b) When did this event occur (approximate date): YY.MM.DD _____

c) Have you experienced other traumatic events of this nature (please indicate)?

☐ Yes

☐ No

d) If yes, please list the events and the dates:

Event 2: _____ Date: YY.MM.DD _____

Event 3: _____ Date: YY.MM.DD _____

e) Please indicate the number of traumatic events you have experienced if it exceeds 3: _____

2. a) Did you seek help to deal with any effects of trauma you experienced?

☐ Yes

☐ No

b) If yes, was it (Please indicate all that apply)

☐ Informal (i.e., help or support from a family member(s) or friend(s))

☐ Formal (i.e., Cognitive Behavioural Therapy, or another form of therapy from a registered Clinician)

☐ Prescription drugs as part of a treatment plan

☐ Non-prescription drugs or alcohol

3 a) Are you engaged in regular spiritual or religious practice?

☐ Yes

☐ No

b) If yes, do you feel it helped/helps you deal with the effects of the trauma you experienced?

☐ Yes

☐ No

Please elaborate:

4 Do you experience any guilt as a result of trauma you experienced?

☐ Yes

☐ No

Please elaborate:

5 Do you consider yourself a resilient person?

☐ Yes

☐ No

Please elaborate:

Appendix C

Survey of Coping Profiles Endorsed (SCOPE)

The purpose of this questionnaire is to find out how people deal with traumatic experiences. The following are activities that you may have done. After each activity, please indicate the extent to which you use this as a way of dealing with a traumatic event in recent weeks.

Have you ever experienced a traumatic event?

☐ Yes

☐ No

If YES, please briefly describe the event

Please give the date of the event YY MM DD ____

If you have **NOT** experienced a traumatic event, think of an event that you would potentially experience and answer how you would deal with it.

What hypothetical event are you thinking of _____

Ordinarily, in recent weeks, have you	Never	Seldom	Sometimes	Often	Almost always
1 accepted that there was nothing you could do to change your situation?	0	1	2	3	4
2 tried to just take whatever came your way?	0	1	2	3	4
3 talked with friends or relatives about your problems?	0	1	2	3	4
4 tried to do things which you typically enjoy?	0	1	2	3	4
5 sought out information that would help you resolve your problems?	0	1	2	3	4
6 blamed others for creating your problems or making them worse?	0	1	2	3	4
7 sought the advice of others to resolve your problems?	0	1	2	3	4
8 blamed yourself for your problems?	0	1	2	3	4
9 exercised?	0	1	2	3	4

10 fantasized or thought about unreal things (e g , the perfect revenge, or winning a million dollars) to feel better?	0	1	2	3	4
11 been very emotional compared to your usual self?	0	1	2	3	4
12 gone over your problem in your mind over and over again?	0	1	2	3	4
13 asked others for help?	0	1	2	3	4
14 thought about your problem a lot?	0	1	2	3	4
15 became involved in recreation or pleasure activities?	0	1	2	3	4
16 worried about your problem a lot?	0	1	2	3	4
17 tried to keep your mind off things that are upsetting to you?	0	1	2	3	4
18 tried to distract yourself from your troubles?	0	1	2	3	4
19 avoided thinking about your problems?	0	1	2	3	4
20 made plans to overcome your problems?	0	1	2	3	4
21 told jokes about your situation?	0	1	2	3	4
22 thought a lot about who is responsible for your problem (beside yourself)?	0	1	2	3	4
23 shared humorous stories etc To cheer yourself and others up?	0	1	2	3	4
24 told yourself that other people have dealt with problems such as yours?	0	1	2	3	4
25 thought a lot about how you have brought your problem on yourself?	0	1	2	3	4
26 decided to wait and see how things turn out?	0	1	2	3	4
27 wished the situation would go away or be over with?	0	1	2	3	4
28 decided that your current problems are a result of your own past actions?	0	1	2	3	4
29 gone shopping?	0	1	2	3	4
30 asserted yourself and taken positive action on problems that are getting you down?	0	1	2	3	4

31 sought reassurance and moral support from others?	0	1	2	3	4
32 resigned yourself to your problem?	0	1	2	3	4
33 thought about how your problems have been caused by other people?	0	1	2	3	4
34 daydreamed about how things may turn out?	0	1	2	3	4
35 been very emotional in how you react, even to little things?	0	1	2	3	4
36 decided that you can grow and learn through your problems?	0	1	2	3	4
37 told yourself that other people have problems like your own?	0	1	2	3	4
38 wished I was a stronger person or better at dealing with problems?	0	1	2	3	4
39 looked for how you can learn something out of a bad situation?	0	1	2	3	4
40 asked for God's guidance?	0	1	2	3	4
41 kept your feelings bottled up inside?	0	1	2	3	4
42 found yourself crying more than usual?	0	1	2	3	4
43 tried to act as if you were not upset?	0	1	2	3	4
44 prayed for help?	0	1	2	3	4
45 gone out?	0	1	2	3	4
46 held in your feelings?	0	1	2	3	4
47 tried to act as if you weren't feeling bad?	0	1	2	3	4
48 taken steps to overcome your problems?	0	1	2	3	4
49 made humorous comments or wise cracks?	0	1	2	3	4
50 told others that you were depressed or emotionally upset?	0	1	2	3	4

Appendix D

Consumption of Social Support Scale (CSS)

In the past few months, how often have you been the recipient of these activities from other people? Please read each statement carefully and select the answer that best describes your experience

1 You received some information from others which helped you understand a situation

Not at all Once or twice About once a week Several times a week About every day

2 People who had helped you followed up with you to see if you had followed their advice

Not at all Once or twice About once a week Several times a week About every day

3 You received information from others on how to do something

Not at all Once or twice About once a week Several times a week About every day

4 You received feedback from others on how you were doing without saying it was good or bad

Not at all Once or twice About once a week Several times a week About every day

5 You were told from others that you are O.K. just the way you are

Not at all Once or twice About once a week Several times a week About every day

6 You received interest and concern from others in your well-being

Not at all Once or twice About once a week Several times a week About every day

7 You had someone who listened to you talking about your private feelings

Not at all Once or twice About once a week Several times a week About every day

8 You had someone who joked and kidded to try cheering you up

Not at all Once or twice About once a week Several times a week About every day

9 You were provided with transportation from others

Not at all Once or twice About once a week Several times a week About every day

10 You were helped by others to do something that needed to be done

Not at all Once or twice About once a week Several times a week About every day

11 You were provided by others with a place where you could get away for a while

Not at all Once or twice About once a week Several times a week About every day

12 You were loaned or given something by others (a physical object other than money) that you needed

Not at all Once or twice About once a week Several times a week About every day

Appendix E

Connor-Davidson Resilience Scale (CD-RISC)

Please rate as follows

0 for not true at all, 1 for rarely true, 2 sometimes true, 3 often true, 4 true nearly all the time

1 I am able to adapt to change

0 1 2 3 4

2 I have close and secure relationships

0 1 2 3 4

3 I take pride in my achievements

0 1 2 3 4

4 I work to attain my goals

0 1 2 3 4

5 I feel in control of my life

0 1 2 3 4

6 I have a strong sense of purpose

0 1 2 3 4

7 I see the humorous side of things

0 1 2 3 4

8 Things happen for a reason

0 1 2 3 4

9 I have to act on a hunch

0 1 2 3 4

10. I can handle unpleasant feelings

0 1 2 3 4

11. Sometimes fate or God can help

0 1 2 3 4

12. I can deal with whatever comes my way

0 1 2 3 4

13. Past success gives me confidence for new challenges

0 1 2 3 4

14. Coping with stress strengthens me

0 1 2 3 4

15. I like challenges

0 1 2 3 4

16. I can make unpopular or difficult decisions

0 1 2 3 4

17. I think of myself as a strong person

0 1 2 3 4

18. When things look hopeless, I don't give up

0 1 2 3 4

19. I give my best effort, no matter what

0 1 2 3 4

20. I can achieve my goals

0 1 2 3 4

21. I am not easily discouraged by failure

0 1 2 3 4

22. I tend to bounce back after a hardship or illness

0 1 2 3 4

23. I know where to turn to for help

0 1 2 3 4

24. Under pressure, I focus and think clearly

0 1 2 3 4

25. I prefer to take the lead in problem solving

0 1 2 3 4

Appendix F

PTSD Check List, Civilian Version (PCL-C)

Instructions: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences or traumatic events. Please indicate how much you have been bothered by that problem in the past month. Please rate as 1 for not at all; 2 a little bit; 3 moderately; 4 quite a bit; and 5 would be extremely.

Please briefly describe the event you are referring to _____

Please give the date of the event YY MM DD ____ _

1	Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?	1	2	3	4	5
2	Repeated, disturbing dreams of a stressful experience from the past?	1	2	3	4	5
3	Suddenly acting or feeling as if a stressful experience from the past were happening again (as if you were reliving it)?	1	2	3	4	5
4	Feeling very upset when something reminded you of a stressful experience from the past?	1	2	3	4	5
5	Having physical reactions (e g , heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience from the past?	1	2	3	4	5
6	Avoiding thinking about or talking about a stressful experience from the past or avoiding having feelings related to it?	1	2	3	4	5

- 7 Avoiding activities or situations because they reminded you of a stressful experience from the past?
- 1 2 3 4 5
- 8 Trouble remembering important parts of a stressful experience from the past?
- 1 2 3 4 5
- 9 Loss of interest in activities that you used to enjoy?
- 1 2 3 4 5
- 10 Feeling distant or cut off from other people?
- 1 2 3 4 5
- 11 Feeling emotionally numb or being unable to have loving feelings for those close to you?
- 1 2 3 4 5
- 12 Feeling as if your future somehow will be cut short?
- 1 2 3 4 5
- 13 Trouble falling or staying asleep?
- 1 2 3 4 5
- 14 Feeling irritable or having angry outbursts?
- 1 2 3 4 5
- 15 Having difficulty concentrating?
- 1 2 3 4 5
- 16 Being "superalert" or watchful or on guard?
- 1 2 3 4 5
- 17 Feeling jumpy or easily startled?
- 1 2 3 4 5

Appendix G

Beck Depression Inventory (BDI)

On this questionnaire are groups of statements. Please read the entire group of statements in each category. Then pick out ONE statement in that group which best describes the way you feel. Select the number beside the statement you have chosen.

-
- 1 ___ 0 = I do not feel sad
 ___ 1 = I feel sad or blue
 ___ 2a = I am blue or sad all of the time and I can't snap out of it
 ___ 2b = I am so sad or unhappy that it is very painful
 ___ 3 = I am so sad or unhappy that I can't stand it
- 2 ___ 0 = I am not particularly pessimistic or discouraged about the future
 ___ 1 = I feel discouraged about the future
 ___ 2a = I feel I have nothing to look forward to
 ___ 2b = I feel I won't ever get over my troubles
 ___ 3 = I feel that the future is hopeless and things cannot improve
- 3 ___ 0 = I do not feel like a failure
 ___ 1 = I feel I have failed more than the average person
 ___ 2a = I feel I have accomplished very little that is worthwhile or that means anything
 ___ 2b = As I look back on my life, all I can see is a lot of failures
 ___ 3 = I feel I am a complete failure as a person
- 4 ___ 0 = I am not particularly dissatisfied
 ___ 1a = I feel bored most of the time

- ___ 1b = I don't enjoy things the way I used to
- ___ 2 = I don't get satisfaction out of anything anymore
- ___ 3 = I am dissatisfied with everything
5. ___ 0 = I don't feel particularly guilty
- ___ 1 = I feel bad or unworthy a good part of the time
- ___ 2a = I feel quite guilty
- ___ 2b = I feel bad or unworthy practically of the time now
- ___ 3 = I feel as though I am very bad or worthless
6. ___ 0 = I don't feel I am being punished
- ___ 1 = I have a feeling that something bad may happen to me
- ___ 2 = I feel I am being punished or will be punished
- ___ 3a = I feel I deserve to be punished
- ___ 3b = I want to be punished
7. ___ 0 = I don't feel disappointed in myself
- ___ 1a = I am disappointed in myself
- ___ 1b = I don't like myself
- ___ 2 = I am disgusted with myself
- ___ 3 = I hate myself
8. ___ 0 = I do not feel I am any worse than anybody else
- ___ 1 = I am very critical of myself for my weaknesses or mistakes
- ___ 2a = I blame myself for everything that goes wrong
- ___ 2b = I feel I have many bad faults

- 9 ___ 0 = I don't have thoughts of harming myself
 ___ 1 = I have thoughts of harming myself but I would not carry them out
 ___ 2a = I feel I would be better off dead
 ___ 2b = I have definite plans about committing suicide
 ___ 2c = I feel my family would be better off if I were dead
 ___ 3 = I would kill myself if I could
- 10 ___ 0 = I don't cry anymore than usual
 ___ 1 = I cry more now than I used to
 ___ 2 = I cry all the time now I can't stop it
 ___ 3 = I used to be able to cry but now I can't cry at all even though I want to
- 11 ___ 0 = I am no more irritated now than I ever am
 ___ 1 = I get annoyed or irritated more easily than I used to
 ___ 2 = I get irritated all the time
 ___ 3 = I don't get irritated at all the things that used to irritate me
- 12 ___ 0 = I have not lost interest in other people
 ___ 1 = I am less interested in other people than I used to be
 ___ 2 = I have lost most of my interest in other people and I have little feeling for them
 ___ 3 = I have lost all my interest in other people and don't care about them at all
- 13 ___ 0 = I make decisions about as well as ever
 ___ 1 = I am less sure of myself now and try to put off making decisions
 ___ 2 = I can't make decisions anymore without help
 ___ 3 = I can't make decisions at all anymore

14. ___ 0 = I don't feel I look any worse than I used to
___ 1 = I am worried that I am looking old or unattractive
___ 2 = I feel that there permanent changes in my appearance and they make me
look unattractive
___ 3 = I feel that I am ugly or repulsive looking
15. ___ 0 = I can work about as well as before
___ 1a = It takes extra effort to get started at doing something
___ 1b = I don't work as well as I used to
___ 2 = I have to push myself very hard to do anything
___ 3 = I can't do any work at all
16. ___ 0 = I can sleep as well as usual
___ 1 = I wake up more tired in the morning than I used to
___ 2 = I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
___ 3 = I wake up early every day and can't get more than 5 hours sleep
17. ___ 0 = I don't get anymore tired than usual
___ 1 = I get tired more easily than I used to
___ 2 = I get tired from doing anything
___ 3 = I get too tired to do anything
18. ___ 0 = My appetite is no worse than usual
___ 1 = My appetite is not as good as it used to be
___ 2 = My appetite is much worse now

- ___ 3 = I have no appetite at all any more
19. ___ 0 = I haven't lost much weight, if any, lately
___ 1 = I have lost more than 5 pounds
___ 2 = I have lost more than 10 pounds
___ 3 = I have lost more than 15 pounds
20. ___ 0 = I am no more concerned about my health than usual
___ 1 = I am concerned about aches and pains or upset stomach or constipation or other unpleasant feelings in my body
___ 2 = I am so concerned with how I feel or what I feel that it's hard to think of much else
___ 3 = I am completely absorbed in what I feel
21. ___ 0 = I have not noticed any recent change in my interest in sex
___ 1 = I am less interested in sex than I used to be
___ 2 = I am much less interested in sex now
___ 3 = I have lost interest in sex completely

Appendix H

The Childhood Maltreatment Questionnaire (CMQ)

Children and adolescents growing up can experience a wide range of behaviours on the part of their parents, or other people who serve as parental figures for them. Please think back to your childhood and adolescence and indicate how often you experienced each of these behaviours by at least one of your “parental figures” before you were 18 years old.

Note that parental figures can include parents, step-parents, foster-parents, or other adults who routinely were in charge of you as a child or adolescent. An older sibling or other relative also may be considered a parental figure when this person routinely supervised or cared for you.

For each behaviour, please select the appropriate number that corresponds to the following scale:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

How often before you were 18 years old did one or more of your parental figures

1	Try to control or run your life	1	2	3	4	5
2	Allow or encourage you to steal or take things that did not belong to you	1	2	3	4	5
3	Call you insulting names	1	2	3	4	5
4	Act emotionally “cold” toward you	1	2	3	4	5
5	Take things that belonged to you without asking you or without replacing them	1	2	3	4	5
6	Discourage you from seeing your friends or relatives	1	2	3	4	5
7	Fail to provide adequate clothing for you even though they had the means to do so	1	2	3	4	5
8	Touch or handle you in a rough way that frightened you	1	2	3	4	5
9	Tell you, or otherwise imply to you, that they would be happier without you	1	2	3	4	5
10	Have unpredictable and changing expectations of you	1	2	3	4	5
11	Scream or yell at you	1	2	3	4	5
12	Push a member of your family around when you were present	1	2	3	4	5
13	Become impatient, angry, or hostile whenever you expressed an					

	opinion or questioned something they said	1	2	3	4	5
14	Permit or encourage you to lie, cheat, or deceive people	1	2	3	4	5
15	Make negative comments to you, such as tell you that you were stupid, ugly, clumsy, lazy, or weak	1	2	3	4	5
16	Appear to be disinterested in you and your life	1	2	3	4	5
17	Make you cater to their desires or whims with little concern for your own comfort or welfare	1	2	3	4	5
18	Refuse to allow you to participate in activities organized by a school or community organization (e g field trips, athletic events, plays, clubs, fairs)	1	2	3	4	5
19	Fail to feed you, or to provide adequate food or proper nourishment for you, even though they had the means to do so	1	2	3	4	5
20	Throw some object at you that did not hit you but could have hurt you physically	1	2	3	4	5
21	Do or say something that gave you the impression you were unwanted	1	2	3	4	5
22	Have many unpredictable moods, or frequently changing moods, that affected their ability to provide reliable care for you	1	2	3	4	5
23	Threaten to give you a beating	1	2	3	4	5
24	Physically harm a member of your family (other than yourself) with a weapon or other dangerous object when you were present	1	2	3	4	5
25	Totally disregard your input into decisions that affected you	1	2	3	4	5
26	Permit or encourage you to vandalize or destroy someone's belongings or property	1	2	3	4	5
27	Criticize, belittle, or shame you in front of other people	1	2	3	4	5
28	Ignore you	1	2	3	4	5
29	Take advantage of you in some way (other than in a sexual way)	1	2	3	4	5
30	Refuse to allow you to participate in social activities (e g , dances, parties)	1	2	3	4	5
31	Leave you alone or unattended for periods of time when, looking back now, you believe it was unsafe or inappropriate for them to have done so	1	2	3	4	5
32	Break one of your possessions, or take it away from you in order to "hurt" you	1	2	3	4	5

33	Act in a way that implied they did not like you or value you	1	2	3	4	5
34	Act in a way that led you to feel confused about what they expected from you or about how they wanted you to behave	1	2	3	4	5
35	Speak to you in a way that frightened you	1	2	3	4	5
36	Physically hurt or start a fight with someone who was not a member of your family (when you were present)	1	2	3	4	5
37	Lead you to feel that bad things would happen if you tried to make decisions on your own or act independently	1	2	3	4	5
38	Allow you to do, or seem unconcerned if you did something that was illegal or morally wrong	1	2	3	4	5
39	Put you down or treat you in a degrading manner	1	2	3	4	5
40	Fail to praise you when you deserved it	1	2	3	4	5
41	Require you to act as a companion for them or other adults when you did not want to do so	1	2	3	4	5
42	Stop you from seeing your friends without good reason	1	2	3	4	5
43	Fail to care for your injuries when you were physically hurt	1	2	3	4	5
44	Break, hit, kick, or punch some object in your presence with the intention of scaring you	1	2	3	4	5
45	Do or say something that suggested you did not measure up to their expectations of you	1	2	3	4	5
46	Behave in ways that led you to feel that you could not rely upon them	1	2	3	4	5
47	Threaten that something very bad would happen to you	1	2	3	4	5
48	Treat cruelly, or kill a pet or other animal when you were present (do not include wild animals killed in hunting)	1	2	3	4	5
49	Interfere in your life	1	2	3	4	5
50	Allow or encourage you to fight with, hurt, or bully other people	1	2	3	4	5
51	Tell you that you would never amount to anything in life	1	2	3	4	5
52	Fail to listen to you or to comfort you when they knew you were sad and upset	1	2	3	4	5
53	Make you entertain them or other people when you did not want to do so	1	2	3	4	5
54	Make you stay at home when you wanted to participate in some activity that your friends and peers were doing	1	2	3	4	5

55	Fail to take you to the doctor or give you medicine when you were ill and medical attention seemed to have been needed	1	2	3	4	5
56	Chase you with the intent of hurting you or seriously frightening you	1	2	3	4	5
57	Tell you, or otherwise imply that you were a burden to them	1	2	3	4	5
58	Make promises to you that they did not keep	1	2	3	4	5
59	Swear at you or curse you	1	2	3	4	5
60	Hit, slap, kick, or punch a member of your family (other than yourself) when you were present	1	2	3	4	5
61	Try to make you feel that you could not make any decisions or do anything in your life without checking with them first	1	2	3	4	5
62	Teach you how or encourage you to do something that was illegal or morally wrong	1	2	3	4	5
63	Ridicule you	1	2	3	4	5
64	Seem to be emotionally detached or unexpressive with you	1	2	3	4	5
65	Get you to do something for them when they knew it caused you considerable inconvenience or discomfort	1	2	3	4	5
66	Refuse to allow you contact with other people	1	2	3	4	5
67	Leave you with certain people (e g , strangers, other children, casual acquaintances) for periods of time when, looking back now, you believe it was unsafe or inappropriate for them to have done so	1	2	3	4	5
68	Tease you or scare you with something they knew was frightening to you	1	2	3	4	5
69	Act in a way that led you to feel rejected by them	1	2	3	4	5
70	Fail to do something important for you that they said they would do	1	2	3	4	5
71	Threaten to harm you physically	1	2	3	4	5
72	Hit or beat a member of your family (other than yourself) with an object, such as a belt, cord, kitchen utensil, board, or stick when you were present	1	2	3	4	5

Appendix I

Debriefing (Community Version)

What are we trying to learn in this research?

In this study, we are examining risk and resiliency factors for symptoms associated with Posttraumatic Stress Disorder (PTSD) in a sample of people who have experienced a single, multiple, or no trauma(s). We are interested in knowing the influence of previous exposure to trauma on PTSD symptoms, specifically if individuals who are victims of childhood maltreatment are more resilient to the effects of subsequent trauma later in life, or if it will make them more susceptible to developing symptoms of PTSD. We would like to know if employment, therapy, and social support are predictors of resilience against the effects of traumatic stress. Additionally, we are interested in knowing how individuals appraise ambiguous situations and resilience in general. It is hoped that this study will add to our understanding of resiliency and positive adaptation to stress and that it may lead to advancement in the treatment and understanding of PTSD.

What if I have questions later?

The following people are involved in this research project and may be contacted at any time if you have any further questions about the project, what it means, or concerns about how it was conducted.

Please contact:

Ashlee Mulligan, Graduate Researcher, (613) 520-2600 # 7513,
amullig1@connect.carleton.ca

Dr. Hymie Anisman, Faculty Investigator, 613-520-2699, hymie_anisman@carleton.ca

Ethical concerns: Dr. Monique Sénéchal, Chair of Carleton University Ethics Committee for Psychological Research, 613-520-1155, Monique_senechal@carleton.ca

Any other concerns: Dr. Janet Mantler, Chair of Carleton University Psychology Department, 613-520-2600, ext. 4173 janet_mantler@carleton.ca

Is there anything that I can do if I found this experiment to be emotionally draining?

Thank you very much for your participation in this study. If you have experienced any distress while completing these measures, information regarding anxiety disorders at the *Anxiety Disorders Association of Canada* website at

<http://www.anxietycanada.ca/english/index.php>. Or, you can consult the directory provided by the *Anxiety Disorders of America*

<http://community.adaa.org/eweb/DynamicPage.aspx?Site=adaa&WebKey=ce66a0ec-3e19-437d-836b-f180fcdf6814>

While many of you who have participated in this study may not suffer from an anxiety disorder, some of you may. If you believe you may suffer from this an anxiety disorder,

or have other concerns related to your well-being or to this study, we have attached some numbers you can contact to get more information and/or help

Nunavut 1-800-661-0844 / 1-800-265-3333

Yukon 1-867-668-5733 / 1-800-563-0808

Northwest Territories 1-800-661-0844

British Columbia 1-800-784-2433

Alberta 1-877-303-2642

Saskatchewan North Battleford 1-866-567-0055, Saskatoon 306-933-6200, Regina 306-757-0127

Manitoba 204-946-9109

Ontario Eastern 1-877-377-7775, Hamilton 905-525-8611, Ottawa 613-238-3311, Toronto 416-408-4357

Quebec 1-800-567-6407

Newfoundland/Labrador 1-888-737-4668

New Brunswick 1-800-667-5005

Nova Scotia Metro Halifax 902-421-1188, Pictou County 902-752-5952, Sydney 902-562-4357

Prince Edward Island 902-368-5400

Some participants may feel sadness or distress as a result of this study. If any distress you experience is more than temporary, or if you would like to speak to someone about this distress, then you may want to contact your family physician. Your family physician will usually be able to help you, or to refer you to someone who can. If you do not have a family physician, then contact any of the following:

Mental Health Crisis Line (toll free) Ottawa and Region (866) 996-0991

Distress Centre of Toronto (416) 408-HELP

Distress Centre of Hamilton (905) 525-8611

Hospital Directories:

Alberta: <http://www.health.alberta.ca/>

<http://www.fsnhospitals.com/Canada-Hospitals/Alberta-Hospitals/>

British Columbia: <http://www.health.gov.bc.ca/socsec/pdf/hospitallist.pdf>

<http://www.fsnhospitals.com/Canada-Hospitals/British-Columbia-Hospitals/>

Saskatchewan: <http://www.fsnhospitals.com/Canada-Hospitals/Saskatchewan-Hospitals/Saskatoon-Hospitals/>

Manitoba: <http://www.hospital-directory.info/hospitals-manitoba>

<http://www.fsnhospitals.com/Canada-Hospitals/Manitoba-Hospitals/>

Ontario: http://www.health.gov.on.ca/english/public/contact/hosp/hosploc_mn.html

<http://www.fsnhospitals.com/Canada-Hospitals/Ontario-Hospitals/>

Quebec: <http://www.fsnhospitals.com/Canada-Hospitals/Quebec-Hospitals/Quebec-Hospitals/>

New Brunswick: <http://nb.finditincanada.ca/app/search/cat-12014>

<http://www.fsnhospitals.com/Canada-Hospitals/New-Brunswick-Hospitals/>

Nova Scotia: [http //www fsnhospitals com/Canada-Hospitals/Nova-Scotia-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Nova-Scotia-Hospitals/)

Prince Edward Island: [http //www fsnhospitals com/Canada-Hospitals/Prince-Edward-Island-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Prince-Edward-Island-Hospitals/)

Newfoundland: [http //www fsnhospitals com/Canada-Hospitals/Newfoundland-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Newfoundland-Hospitals/)

Yukon: [http //www fsnhospitals com/Canada-Hospitals/Yukon-Territory-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Yukon-Territory-Hospitals/)

Nunavut: [www yellowpages ca](http://www.yellowpages.ca)

Northwest Territories: [http //www fsnhospitals com/Canada-Hospitals/Northwest-Territory-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Northwest-Territory-Hospitals/)

Thank you for your participation in this study

If you know of anyone who might be interested in participating in our study, we would greatly appreciate it if you could let them know about our website address, [www copewell carleton ca](http://www.copewell.carleton.ca) Or if you think they would be more comfortable completing a paper version of the questionnaire, we will gladly mail it to them if they email us at [amullig1@connect carleton ca](mailto:amullig1@connect.carleton.ca) or phone us at (613) 520-2600 # 7513

Thank you very much for completing this study!

Additional Debriefing (Community Version)

(This page only appeared to those who selected 2 or higher on question 9 of the BDI).

Depression is a condition that can occur for many reasons, including workplace, school, or relationship stressors, traumatic life events, discrimination, as well as physical/biological imbalances. Approximately 10-15% of people will suffer some degree of depression during their lifetime. With advances in modern medicine, most people can readily be treated for this illness, which if unattended can be long lasting and affect many aspects of one's life. The symptoms of depression comprise

- Poor or depressed mood, or a reduction in the pleasure gained from otherwise positive experiences
- Sleep disturbances
- Eating disturbances (loss of appetite, or overeating despite not being hungry), which may be linked to weight changes
- Lack of sexual interest
- Fatigue and lethargy (you don't feel like doing anything)
- An inability to focus (e.g., you have a hard time reading)
- Reduced interactions with family and friends
- Thoughts of suicide

Someone who is depressed may experience several (3-4), but not necessarily all of the above symptoms.

It is likewise the case that 60% of individuals will encounter a severe traumatic event in their lives and of these people, a fair number will develop symptoms that cause severe anxiety. Illnesses of this nature, including posttraumatic stress disorder (PTSD) can be treated. Once again, if unattended, the repercussions can be severe. Symptoms include

- Hyperarousal (e.g., feelings of anxiety and reactivity even to minor situations)
- Intrusive thoughts (memories of the event come into your head frequently)
- Avoiding thoughts or stimuli related to the event

These symptoms can persist for more than a month following the event, and influence your day-to-day functioning.

Your responses to this survey suggest that you may be experiencing one of the above. If you are not already receiving attention for this problem, it is suggested that you contact your family physician. It is not a good idea to allow problems to fester, as ruminating over these problems will typically not make them go away. Your family physician or counsellor will usually be able to help you or to refer you to someone who can. If you do not have a family physician, then you can contact any of the following:

Mental Health Crisis Line: within Ottawa (613) 722-6914, outside Ottawa 1-866-996-0991, Web Site <http://www.crisisline.ca/>

Ottawa Distress Centre: (613) 238 1089, Web Site www.dcottawa.on.ca

Carleton University Health and Counselling Services 520-6674 (only for studies completed solely with Carleton students)

Distress Centre of Toronto (416) 408 HELP

Distress Centre of Hamilton (905) 525-8611

Hospital Directories:

Alberta:

[http //www health alberta ca/](http://www.health.alberta.ca/)

[http //www fsnhospitals com/Canada-Hospitals/Alberta-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Alberta-Hospitals/)

British Colombia:

[http //www health gov bc ca/socsec/pdf/hospitallist pdf](http://www.health.gov.bc.ca/socsec/pdf/hospitallist.pdf)

[http //www fsnhospitals com/Canada-Hospitals/British-Columbia-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/British-Columbia-Hospitals/)

Saskatchewan:

[http //www fsnhospitals com/Canada-Hospitals/Saskatchewan-Hospitals/Saskatoon-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Saskatchewan-Hospitals/Saskatoon-Hospitals/)

Manitoba:

[http //www hospital-directory info/hospitals-manitoba](http://www.hospital-directory.info/hospitals-manitoba)

[http //www fsnhospitals com/Canada-Hospitals/Manitoba-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Manitoba-Hospitals/)

Ontario:

[http //www health gov on ca/english/public/contact/hosp/hosploc_mn.html](http://www.health.gov.on.ca/english/public/contact/hosp/hosploc_mn.html)

[http //www fsnhospitals com/Canada-Hospitals/Ontario-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Ontario-Hospitals/)

Quebec:

[http //www fsnhospitals com/Canada-Hospitals/Quebec-Hospitals/Quebec-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Quebec-Hospitals/Quebec-Hospitals/)

New Brunswick:

[http //nb finditincanada ca/app/search/cat-12014](http://nb.finditincanada.ca/app/search/cat-12014)

[http //www fsnhospitals com/Canada-Hospitals/New-Brunswick-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/New-Brunswick-Hospitals/)

Nova Scotia:

[http //www fsnhospitals com/Canada-Hospitals/Nova-Scotia-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Nova-Scotia-Hospitals/)

Prince Edward Island:

[http //www fsnhospitals com/Canada-Hospitals/Prince-Edward-Island-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Prince-Edward-Island-Hospitals/)

Newfoundland:

[http //www fsnhospitals com/Canada-Hospitals/Newfoundland-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Newfoundland-Hospitals/)

Yukon:

[http //www fsnhospitals com/Canada-Hospitals/Yukon-Territory-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Yukon-Territory-Hospitals/)

Nunavut:

[www yellowpages ca](http://www.yellowpages.ca)

Northwest Territories:

[http //www fsnhospitals com/Canada-Hospitals/Northwest-Territory-Hospitals/](http://www.fsnhospitals.com/Canada-Hospitals/Northwest-Territory-Hospitals/)

Debriefing (Student Version)

What are we trying to learn in this research?

In this study, we are examining risk and resiliency factors for symptoms associated with Posttraumatic Stress Disorder (PTSD) in a sample of people who have experienced a single, multiple, or no trauma(s). We are interested in knowing the influence of previous exposure to trauma on PTSD symptoms, specifically if individuals who are victims of childhood maltreatment are more resilient to the effects of subsequent trauma later in life, or if it will make them more susceptible to developing symptoms of PTSD. "Childhood maltreatment" refers to maltreatment an individual received by their primary caregiver before the age of 18. It may include physical, sexual, or psychological abuse. While some argue that a major challenge in life can have a strengthening effect and give a person the ability to use past successes to confront current challenges (Rutter, 1985), childhood maltreatment (Campbell-Sills et al., 2009) and multiple traumas have been shown to be highly predictive of PTSD (Suliman et al., 2009). Indeed, it has been suggested that there is no ultimate resilience to traumatic stress, if cumulative exposure to trauma is high enough, any individual could develop PTSD (Neuner et al., 2004). Lifetime prevalence of PTSD in Canada is approximately 9.2% (Van Ameringen, Mancini, Patterson, & Boyle, 2008). A majority of Canadians (76.1%) are exposed to at least one traumatic event in their lifetime and the majority of Canadians report exposure to multiple traumas (Van Ameringen et al., 2008). A consensus amongst researchers over the past several years is that PTSD does not occur to everyone who is exposed to a traumatic event (Voges & Romney, 2003). With such a high prevalence rate of exposure to trauma, the question remains why some will come to suffer chronic effects while others will not? Despite growing interest in resilience, and its impact on mental health, little is known about the construct. It has been hypothesized that number and severity of traumatic experience(s), coping strategies following a trauma, and general appraisal style are predictive of symptoms of PTSD, and this will be reflected on measures of resilience. However, childhood maltreatment may negate all variables hypothesized to counter the effects of traumatic stress. This study is designed to evaluate these coping and resilience associated hypotheses. We would like to know if employment, therapy, and social support are predictors of resilience against the effects of traumatic stress. Additionally we are interested in knowing how individuals appraise ambiguous situations and resilience in general. Individuals who have experienced a traumatic event as well as those who have not are of interest, in addition to those who have and have not experienced childhood maltreatment as we would like to investigate contributing factors to resilience and symptoms of PTSD. Because of the high prevalence rate of PTSD, and its role in health and general functioning, this remains an important area of research. This study will add to our understanding of the implications of early life trauma, and factors contributing to PTSD, and might thus inform treatment for affected individuals. We appreciate the time you have taken to participate.

If you know of anyone who might be interested in participating in our study, we would greatly appreciate it if you could let them know about our website address, www.copewell.carleton.ca. Or if you think they would be more comfortable completing a

hard copy version of the questionnaire, we will gladly mail it to them if they email us at amullig1@connect.carleton.ca or phone us at (613) 520-2600 # 7513

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What if I have questions later?

The following people are involved in this research project and may be contacted at any time if you have any further questions about the project, what it means, or concerns about how it was conducted

Ashlee Mulligan, Graduate Researcher, (613) 520-2600 # 7513,
amullig1@connect.carleton.ca

Dr Hymie Anisman, Faculty Investigator, 613-520-2699, hymie_anisman@carleton.ca

Ethical concerns Dr Monique Sénéchal, Chair of Carleton University Ethics Committee for Psychological Research, 613-520-1155, Monique_senechal@carleton.ca

Any other concerns: Dr Janet Mantler, Chair of Carleton University Psychology Department, 613-520-2600, ext 4173 janet_mantler@carleton.ca

Is there anything that I can do if I found this experiment to be emotionally draining?

Thank you very much for your participation in this study It is normal to briefly feel sad or anxious when reflecting on traumatic events you may have experienced For some people, these feelings may last longer, or be more severe Also, some people who have

experienced traumas may feel more emotional than usual, and/or react in unusual ways to relatively minor events in their everyday life. If this happens to you, we have provided a list of resources you can contact on-campus and in the community. If you have experienced any distress while completing these measures, information regarding anxiety disorders at the *Anxiety Disorders Association of Canada* website at <http://www.anxietycanada.ca/english/index.php>. Or, you can consult the directory provided by the *Anxiety Disorders of America* <http://community.adaa.org/eweb/DynamicPage.aspx?Site=adaa&WebKey=ce66a0ec-3e19-437d-836b-f180fcd6814>

Some participants may feel sadness or distress as a result of this study. If any distress you experience is more than temporary, or if you would like to speak to someone about this distress, then you may want to contact your family physician. Your family physician will usually be able to help you, or to refer you to someone who can. If you do not have a family physician, then contact any of the following:

On Campus Services

Carleton University Health and Counselling Services 520-6674

Student Services 520-3663

Student Academic Success Centre 520-7850

International Student Services Office 520-6600

First in Family Peer Mentor Program 520-7595

Email Contact for Health and Counselling Services hcs@carleton.ca

After Hours Crisis

If you are experiencing a personal crisis and it is after office hours, there is **24-hour crisis counseling support** available through community agencies. If you are living on campus and need immediate support, talk to your Residence Fellow or Residence Manager, and they will help you obtain immediate services. You may also contact Carleton University's Campus Safety Office at (613) 520-4444 for support in connecting to crisis services.

Off-Campus Services

Distress Centre of Ottawa – **English** (613) 238-3311

Tel-Aide Outaouais – **French** (613) 741-6433

Local Hospital Emergency Rooms

Ottawa Hospital – General Campus

501 Smyth Road, Ottawa

(613) 722-7000

Children's Hospital of Eastern Ontario

(must be 18 years of age or younger)

401 Smyth Road, Ottawa

(613) 737-2328

Ottawa Hospital – Civic Campus

1053 Carling Ave, Ottawa

(613) 722-7000

Additional Debriefing (Student Version)

(This page only appeared to those who selected 2 or higher on question 9 of the BDI).

Depression is a stress-related response that can occur for many reasons, including workplace stressors, traumatic life events, as well as discrimination. Approximately, 10-15% of people will suffer some degree of depression during their lifetime. With advances in modern medicine, most people can readily be treated for this illness, which if unattended can be long lasting and affect many aspects of one's life. The symptoms of depression comprise:

- *poor or depressed mood, or a reduction in the pleasure gained from otherwise positive experiences*
- *sleep disturbances*
- *eating disturbances (loss of appetite, or overeating despite not being hungry), which may be linked to weight changes*
- *lack of sexual interest*
- *fatigue or lethargy (you don't feel like doing anything)*
- *an inability to focus (i.e., have a hard time reading)*
- *reduced interactions with family and friends*
- *thoughts of suicide*

Someone who is depressed may experience several (3-4), but not necessarily all of the above symptoms.

It is likewise the case that 60% of individuals will encounter a severe traumatic event and of these people, a fair number will develop symptoms that cause severe anxiety. Illnesses of this nature, including posttraumatic stress disorder can be treated. Once again, if unattended, the repercussions can be severe. Symptoms include:

- *hyperarousal (i.e., feelings of anxiety and reactive even to minor situations)*
- *intrusive thoughts (the event comes into your head frequently)*
- *avoiding thoughts or stimuli related to the event*

These symptoms persist for more than a month following the event, and influence your day-to-day functioning.

Your responses to this survey suggest that you may be experiencing one of the above. If you are not already receiving attention for this problem, it is suggested that you contact your family physician. It is not a good idea to allow problems to fester, as ruminating over these problems will typically not make them go away. Your family physician or counsellor will usually be able to help you or to refer you to someone who can. If you do not have a family physician, then you can contact any of the following distress lines:

On Campus Services

Carleton University Health and Counselling Services 520-6674

Student Services 520-3663
Student Academic Success Centre 520-7850
International Student Services Office 520-6600
First in Family Peer Mentor Program 520-7595
 Email Contact: hcs@carleton.ca

After Hours Crisis

If you are experiencing a personal crisis and it is after office hours, there is **24-hour crisis counseling support** available through community agencies. If you are living on campus and need immediate support, talk to your Residence Fellow or Residence Manager, and they will help you obtain immediate services. You may also contact Carleton University's Campus Safety Office at (613) 520-4444 for support in connecting to crisis services.

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Children's Hospital of Eastern Ontario
 (must be 18 years of age or younger) (613) 737-2328
 401 Smyth Road, Ottawa

Ottawa Hospital – Civic Campus
 1053 Carling Ave, Ottawa (613) 722-7000