Supporting Resilience: Investigating social support as a mediator of resilience in RCMP members

Ailesh R. Abrams
Department of Psychology, University of Regina
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Dr. R. Nicholas Carleton
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Abstract

**Background:** In a Canada-wide survey of public safety personnel, Royal Canadian Mounted Police members (RCMP) scored especially high on screening measures of generalized anxiety disorder (GAD), posttraumatic stress disorder (PTSD), panic disorder (PD), and major depressive disorder (MDD) (Carleton et al, 2018; Di Nota et al; 2020). Social support and resilience have been linked across multiple studies to symptom reduction in the aforementioned disorders (Batinić et al, 2009; Beadel et al, 2016; Bitsika et al, 2010; Lee et al, 2014; McCanlies et al, 2018; Pietrzak et al, 2010; Sangalang & Gee, 2012). Researchers suggest that resilience is a trait factor, whereas social support can vary across the lifespan; therefore, the current study was designed to identify a hypothesised mediation effect of social support in the relationship between resilience and symptom measures.

**Method:** There were 1207 RCMP members who completed the web-based Canadian Institute for Public Safety Research and Treatment (CIPSRT) prevalence survey. Self-report measures of GAD, PTSD, PD, MDD, resilience (BRS), and social support (SPS) were used as independent variables in regression analyses assessing mediation effects of social support in the relationship between resilience and symptom measures. All analyses were bootstrapped with 5,000 samples to provide robust probability estimates and confidence intervals.

**Results:** For the GAD model, GAD symptoms were significantly associated with SPS ($b = -.11$, all $ps < .001$) and BRS scores ($b = .34$) and there were significant total ($\beta = -.60$) and indirect effects of the model ($b = -.03$; 95% CI [-.05, -.02]). For the PTSD model, PTSD symptoms were significantly associated with SPS ($b = -.60$, all $ps < .001$) and BRS scores ($b = .35$) and there were significant total ($\beta = -2.29$) and indirect effects of the model ($b = -.05$; 95% CI [-.07, -.03]). For the PD model, PD symptoms were significantly associated with SPS ($b = -.10$, all $ps < .001$)
and BRS scores ($b = .36$) and there were significant total ($\beta = -.46$) and indirect effects of the model ($b = -.04$; 95% CI [-.06, -.02]). For the MDD model, MDD symptoms were significantly associated with SPS ($b = -.22$, all $ps < .001$) and BRS scores ($b = .34$) and there were significant total ($\beta = -.70$) and indirect effects of the model ($b = -.06$; 95% CI [-.08, -.04]).

**Discussion:** Social support significantly mediated the relationship between resilience and symptoms measured in each of the models; however, greater variance was explained by the relationship between resilience and each symptom measure. The current results suggest that resilience is a key correlate of symptom variation, and social support may be a critical facet of resilience; accordingly, resilience may be impacted by environmental factors.

*Keywords:* resilience, mental health, social support, PSP, RCMP
Supporting Resilience: Investigating social support as a mediator of resilience in RCMP members

Public Safety Personnel (PSP; e.g., border services officers, communications officials, correctional workers, firefighters, paramedics, police) are faced with potentially psychologically traumatic events (PPTE; CIPSRT, 2019) as part of their occupational duties (Carleton et al., 2012). PPTE include, but are not limited to, exposure to threatened or actual physical assaults, death, fires, explosions, the distress of others. Recent research results have indicated PSP may represent a specialized population with specific mental health needs (Carleton et al., 2012; Carleton et al., 2018; Carleton et al., 2019). In a Canada-wide prevalence survey of PSP members, 45% of PSP participants screened positively for symptoms consistent with one or more mental disorder, a stark contrast to the general population whose diagnostic rates are around 10% (Carleton et al., 2018; Statistics Canada, 2012).

Di Nota and colleagues (2020) found that RCMP members scored higher on measures of PTSD, depression, anxiety, stress and panic disorder in comparison to other police. In addition, the higher scores were significantly associated with higher rates of RCMP suicidal ideation (Di Nota et al., 2020). Some of these differences may be due to different supports available to other police compared to RCMP members. For example, RCMP members may have less access to social supports and resources as they are located in rural areas and relocate frequently (Carleton et al., 2018). In addition, other police are more likely to deploy in pairs whereas RCMP members often deploy alone (Carleton et al., 2018).

Resilience and Social Support

Psychological resiliency is typically used to describe the ability to recover and adapt to stressful or adverse experiences (Hu et al., 2014). Resilience has been found to play a role in
buffering against the development of mental health challenges (Shrivastava & Desousa, 2016). Previous research findings have shown that increased resilience appears to support symptom reductions, including in symptoms of generalized anxiety disorder (GAD), post-traumatic stress disorder (PTSD), major depressive disorder (MDD), and panic disorder (PD) (Badel et al, 2016; Bitsika et al, 2010; Lee et al, 2014; McCanlies et al, 2018). Resilience as a concept can be defined in many different ways but is generally categorized as being a process, outcome, or personal trait (Van der Meulen et al, 2018; Van der Meulen et al, 2019). Early resilience research considered resilience to be a trait-like inherent personal characteristic (Van der Meulen, 2018; Van der Meulen et al, 2019). However, as research into resilience has evolved, researchers debate that resilience may be affected by environmental factors such as exposure to stress and adversity (e.g., poverty, adverse childhood events), aimed interventions to increase resilience, or access to available resources (Ungar, 2019; Van der Meulen, 2018; Van der Meulen et al, 2019).

Additionally, resilience can be viewed in terms of individual or organizational level factors. For example, problematic organizational stressors and structures can lead to negative mental health outcomes in individuals (Carleton et al, 2020a). Researchers of a 2020 study suggest that PSP member PPTE exposure is only one element of the organizational challenges faced by PSP members. To elaborate, other organizational challenges include “differential treatment of employees by leadership, indifference to mental health issues, insufficient recognition of stressors, overt and covert stigma, and systemic economic pressures to perpetually do more with less” (Carleton et al, 2020a, p.2). Improved organizational structures may lead to the development of better organizational and individual resilience (Carleton et al, 2020a).

Another factor that may influence resilience is social support. Humans are social creatures and thus do better when they have a strong network of social support (Krueger, 1998).
Social support can be characterized in many different ways. For example, social support can be engaging with friends and loved ones, participating in social activities, sharing advice and offering support (Canadian Institute for Health Information [CIHI] & Canadian Electronic Library [CEL], 2012). In addition, a social network can be diverse including romantic partners, family members, friends and peers, and broader social contexts (CIHI & CEL, 2012). A strong social support may lead to an increase in resilience (Sippel et al, 2015). In a 2018 study, McCanlies and colleagues found that social support increased resilience against mental health challenges in police officers following Hurricane Katrina. In addition, in a 2017 study of PSP members, participants who were married were found to be more resilient than single or separated/divorced/widowed participants (Carleton et al, 2018).

As an independent factor, social support has been identified as a protective factor against distress (CIHI & CEL, 2012). Distress is a risk factor for many mental health challenges, including anxiety and depression, as well as a range of physical health concerns (CIHI & CEL, 2012). In Canada, researchers found evidence that social support may mitigate the negative effects of stress and is associated with lower levels of distress (CIHI & CEL, 2012). Peer support is an organized network of vetted peers to whom a member can speak confidentially about difficulties they may be experiencing (Carleton et al, 2020b). Peer support is a form of social support which is gaining popularity among PSP organizations (Beshai & Carleton, 2016; Carleton et al, 2020b). In addition, social support appears to increase symptom reduction of mental health disorders, including symptoms of GAD, PTSD, PD, and MDD (Batinić et al, 2009; McCanlies et al, 2018; Pietrzak et al, 2010; Sangalang & Gee, 2012). In the current study, we elected to focus on resilience at the individual level, which consistent with most of the extant research results. Nonetheless, we recognize there are organizational and societal structures that
influence individual resilience. Understanding the relationship between social support, resilience, and symptom measures may inform resource allocation for PSP organizations and future research directions.

**Purpose**

RCMP members may be at a higher risk of developing mental health challenges, and may benefit from increased resilience and social support. Researchers suggest resilience is a trait factor and that social support is an element of resilience. As social support varies among individuals and across the lifespan, the current study was designed to explore a mediation effect for social support in the relationship between resilience and symptom measures in RCMP participants.

**Hypotheses**

Social support was expected to statistically significantly mediate the relationship between resilience and symptoms associated with each of GAD, PTSD, PD, and MDD in an RCMP member sample. Specifically, we predicted that a measure of social support (SPS) would mediate the relationship with resilience (BRS).

**Methods**

**Participants**

PSP participants were recruited via email invitations sent by the Public Safety Steering Committee, CIPSRT, advocacy organizations, as well as numerous provincial and municipal PSP agencies (Carleton et al, 2018). The Minister of Public Safety and Emergency Preparedness also provided a video invitation encouraging participation (Carleton et al, 2018). In addition, the survey links were made available on social media outlets and websites (Carleton et al, 2018). From this larger PSP sample, a subsample of 1207 RCMP participant responses were analyzed...
for the current study. The participants were mostly men (62.6%), between 40-49 years of age (33.0%), married/common-law (66.0%), and from Western Canada (55.2%) (Table 1).

Design

Participants completed a voluntary web-based Canada-wide study available between September 2016 to January 2017. The study was approved by the University of Regina Institutional Research Ethics Board (file No. 2016-107), followed established guidelines for web surveys, and was available in French and English. The initial study found evidence that RCMP participants scored in an elevated range on self-report measures of GAD (GAD-7), PTSD (PCL-5), PD (PDSS), and MDD (PHQ-9). A subset of the same CIPSRT dataset was used in the current study to perform regression analyses that assessed the mediation effects of social support in the relationship between resilience and symptom measures. All analyses were bootstrapped with 5,000 samples to provide robust probability estimates and confidence intervals.

Materials

General Anxiety Disorder 7-Item (GAD-7)

The GAD-7 is a 7-item self-report short form of the original 13-item scale developed in 2006 by Spitzer and colleagues to screen for generalized anxiety disorder in primary care settings (Johnson et al, 2019; Spitzer et al, 2006). The scale evaluates the frequency at which an individual has been disturbed by seven problems over the past two weeks. Types of items include “feeling nervous, anxious, or on the edge” and “worrying too much about different things” (Spitzer et al, 2006). Internal reliability of the GAD-7 for the current study was acceptable (α = 0.92).
PTSD Checklist for the DSM-V (PCL-5)

The PCL-5 is a 17-item self-report scale used to assess PTSD symptoms as per the DSM-V (Blevins et al, 2015). Respondents indicate how much they have been bothered by symptoms regarding an event in the past month. Types of items include “feeling very upset when something reminded you of the stressful experience” and “being ‘super alert’ or watchful or on guard”. Participants respond on a five-point Likert-type scale ranging from 0 (not at all bothered) to 4 (extremely bothered). Internal reliability of the PCL-5 for the current study was acceptable (α = 0.97).

Panic Disorder Severity Scale (PDSS)

The PDSS is a 7-item self-report scale created by Shear and colleagues (1997). Types of items include “How many panic and limited symptom attacks did you have during the week?” and “If you had any panic attacks during the past week, how distressing (uncomfortable, frightening) were they while they were happening?”; available responses ask the individual to report frequency and severity of each experience (Shear, 1997, p.1573). The PDSS has been found to be simple, efficient, and reliable for diagnosing panic disorder and assessing symptom severity (Shear, 1997; Shear, 2001). Internal reliability of the PDSS for the current study was acceptable (α = 0.93).

Patient Health Questionnaire 9-Item (PHQ-9)

The PHQ-9 is the depression module of the Patient Health Questionnaire (Kroenke et al, 2001) and was developed by Kroenke and colleagues. The PHQ-9 has been found to be a valid tool for screening for depression diagnosis and severity in both clinical and research settings (Kroenke et al, 2001). The scale evaluates the frequency at which an individual has been disturbed by nine problems over the past two weeks, including “feeling tired or having little
energy” and “thoughts that you would be better off dead or hurting yourself in some way”.

Internal reliability of the PHQ-9 for the current study was acceptable (α = 0.90).

**Brief Resilience Scale (BRS)**

The BRS is a 6-item self-report developed by Smith and colleagues to reliably assess an individual’s ability to recover from stressful events (2008). Types of items include “I tend to bounce back quickly after hard times” and “it is hard for me to snap back when something bad happens”. Responses are rated on a 5-point Likert-type scale ranging from “Strongly Disagree” to “Strongly Agree”. Internal reliability of the BRS for the current study was acceptable (α = 0.90).

**Social Provisions Scale (SPS)**

The SPS self-report 24-item scale was developed by Cutrona and colleagues to assess perceived social connection (1987). Types of items include “there is someone I could talk to about important decisions in my life” and “there is a trustworthy person I could turn to for advice if I were having problems”. Responses are rated on a 4-point Likert-type scale ranging from 0 (Strongly Disagree) to 3 (Strongly Agree). Internal reliability of the SPS for the current study was acceptable (α = 0.93).

**Data Analyses**

Self-report measures of GAD (GAD-7), MDD (PHQ-9), PD (PDSS), PTSD (PCL-5), resilience (BRS), and social support (SPS) were used in regression analyses that assessed the mediation effects of social support in the relationship between resilience and symptom measures. Descriptive statistics for measures can be found in Table 2. All analyses were bootstrapped with 5,000 samples to provide robust probability estimates and confidence intervals.
According to Preacher and Hayes (2004), “[r]esearchers often conduct mediation analysis in order to indirectly assess the effect of a proposed cause on some outcome through a proposed mediator” (p.717). Rather than just exploring descriptive statistics, mediation analysis allows for exploration of more practical relationships among variables (Preacher & Hayes, 2004). The use of mediation analyses in this study allows for exploration of the relationships between the variables of resilience, social support, and symptom measures.

**Results**

For the GAD model, GAD-7 scores were significantly associated with SPS ($b = -.11$, all $ps < .001$) and BRS scores ($b = .34$) and there were significant total ($\beta = -.60$) and indirect effects of the model ($b = -.03; 95\% \text{ CI } [-.05, -.02]$). For the PTSD model, PCL-5 scores were significantly associated with SPS ($b = -.60$, all $ps < .001$) and BRS scores ($b = .35$) and there were significant total ($\beta = -2.29$) and indirect effects of the model ($b = -.05; 95\% \text{ CI } [-.07, -.03]$). For the PD model, PDSS scores were significantly associated with SPS ($b = -.10$, all $ps < .001$) and BRS scores ($b = .36$) and there were significant total ($\beta = -.46$) and indirect effects of the model ($b = -.04; 95\% \text{ CI } [-.06, -.02]$). For the MDD model, PHQ-9 scores were significantly associated with SPS ($b = -.22$, all $ps < .001$) and BRS scores ($b = .34$) and there were significant total ($\beta = -.70$) and indirect effects of the model ($b = -.06; 95\% \text{ CI } [-.08, -.04]$).
Figure 1

Mediation Analysis Results of BRS with SPS and GAD-7 Scores

![Diagram showing mediation analysis results for BRS with SPS and GAD-7 scores]

Indirect Effect
\[ b = -0.03, \]
\[ CI = [-0.05, -0.02] \]

*p < 0.001***

Figure 2

Mediation analysis results of BRS with SPS and PCL-5 Scores

![Diagram showing mediation analysis results for BRS with SPS and PCL-5 scores]

Indirect Effect
\[ b = -0.05, \]
\[ CI = [-0.07, -0.03] \]

*p < 0.001***
Figure 3

*Mediation analysis results of BRS with SPS and PDSS Scores*

![Diagram showing mediation analysis results of BRS with SPS and PDSS Scores.]

\[ \beta = 0.36^{***} \]

\[ \beta = -0.46 \]

\[ b = -0.04, \quad CI = [-0.06, -0.02] \]

\[ p<0.001^{***} \]

Figure 4

*Mediation analysis results of BRS with SPS and PHQ-9 Scores*

![Diagram showing mediation analysis results of BRS with SPS and PHQ-9 Scores.]

\[ \beta = 0.34^{***} \]

\[ \beta = -0.70 \]

\[ b = -0.06, \quad CI = [-0.08, -0.04] \]

\[ p<.001^{***} \]
Discussion

Previous research results suggest that PSP members are a potentially vulnerable population for the development of mental health challenges due to the increased stress and PPTE exposures resulting from their occupational duties (Carleton et al, 2012). RCMP members appear to be at increased risk for the development of several mental disorders and challenges, as reflected by scores on measures of GAD, PTSD, PD, and MDD (Di Nota et al, 2020). Resilience and social support appear to buffer the effects of stress and exposure to potentially psychologically traumatic events on individuals (Batinić et al, 2009; Beadel et al, 2016; Bitsika et al, 2010; Lee et al, 2014; McCanlies et al, 2018; Pietrzak et al, 2010; Sangalang & Gee, 2012). The current study was designed to identify if social support mediates the relationship between resilience and symptom measures for GAD, PTSD, PD, and MDD.

Social support statistically significantly mediated the relationship between resilience and mental disorder symptoms in each of the models in RCMP participants; however, greater variance was explained by the relationship between resilience and each symptom measure. To summarize, the current results are consistent with previous research findings which suggest that resilience is a key correlate of symptom variation. Importantly, the current findings suggest social support may be a component of resilience that bears further investigation to determine what is shared and what is unique among these constructs. Future investigations may consider factor analytic or taxometric statistical approaches to examine the facets and interrelationships among constructs comprising resilience.

RCMP members were chosen as the focus for the current study because their scores on measures of GAD, PTSD, PD, and MDD were higher than scores provided by other PSP (Carleton et al, 2018). Due to these higher symptom measure scores, RCMP members appear to
be ideal candidates who may benefit from interventions aimed at increasing resilience and social support. Future research investigating interventions to improve individual resilience in RCMP members may be warranted. In addition, examination of interventions or policies aimed at improving social support may also benefit RCMP members.

Given that RCMP members may be adversely affected by an organizational structure that disrupts social support systems (e.g., frequent relocation, remote postings), structural reform or policy interventions that increase social support for members may correspondingly provide improved resilience (Carleton et al., 2020a). A focus on growing the organizational resilience of the RCMP may be an area for future research to support further improvements to RCMP member resilience.

PSP members as a whole will continue to be faced with high stress and PPTEs in the line of duty and their mental health will continue to be at risk; accordingly, additional research will be necessary to develop, deploy, and evaluate effective solutions for protecting the mental health of PSP members (Carleton et al., 2019). Resilience is a protective factor that may be improved with enhanced social support, for example, peer support; as such, research into increasing social support structures for PSP members may be produce helpful opportunities for supporting mental health (Sippel et al., 2015). Peer support programs may comprise a more approachable and less medicalized path to support (Carleton et al., 2020b). Members may be hesitant to address their difficulties via official channels (e.g., Divisional Health Services), whereas talking to a fellow member may be viewed as a more accessible, less stigma laden option (Beshai & Carleton, 2016; Carleton, 2020b). A further possible barrier is the perception that acknowledging mental health challenges may be career limiting (Carleton, 2020b). Speaking confidentially to a peer may have
the effect of reducing the isolation people can experience when facing mental health challenges (Carleton et al, 2020b; Ricciardelli et al, 2019).

Resilience is also a contested and controversial construct (Shrivastava & Desousa 2016). Some researchers situate resilience in the individual, whereas others point to available resources and supports both in the proximate and broader context (McCreary et al, 2017; McCreary et al, 2006). Resilience has also been argued as an individual characteristic that serves neoliberal agendas that absolve organizations and policy makers of their role and responsibility for creating the conditions to foster the maintenance of health among all individuals (McCreary et al, 2017). PSP are perhaps a striking example of the tension among forces that attempt to individualize responsibility for difficulties in that there persists a culture of stoicism in the face of challenges whereas a more inclusive view takes in the challenges and lack of supports in various organizations. The hopeful view is that with increasing awareness the landscape is shifting in ways that will better support all PSP (McCreary et al, 2017).

**Limitations**

The current study has several limitations that also provide future research direction. First, the RCMP sample used in this study was a subset of the original sample from the Canadian PSP prevalence survey. The RCMP sample was large, which lends strength to the current study, however the reduced sample gives reduced generalizability to the PSP population as whole. Mediation analysis could be done on the other data groups to provide generalizability across the Canadian PSP population. A further concern regarding the sample is that of range restriction in that the sample was self-selected and as such is likely not representative of the population. Future studies should examine representative samples (e.g., stratified sampling) to gain a clearer understanding of prevalence rates. Second, all responses were anonymous self-report to a web-
based survey. The comparative reliability and validity of web-based self-report measures to interview assessments for mental health remains unclear; however, the results of a recent meta-analysis suggest that there are no significant differences between self-report measures and interview assessments (Berger et al, 2012b). A more in-depth epidemiological study, such as a Statistics Canada interview study using stratified random sampling, may be warranted. Third, the screening tools used differing time frames for symptom duration which may have caused confusion for participants. The timeframes could not be changed without compromising the validity of the measures; nevertheless, clear instructions emphasized the durations at the beginning of each measure should have provided clarity. Fourth, respondents may underreport clinical symptoms, even when anonymous (Berger et al, 2012a; Hunt et al, 2003). Stigma may have led some participants to underreport, but anonymity may have led some to be more forthcoming. Fifth, screening measures are only approximations and there were no clinical interviews conducted by psychologists. Screening tools are supposed to be administered in clinical settings and may not have been as accurate due to the web-based delivery. Future studies should incorporate semi-structured clinical interviews (e.g., SCID-5-CV; First et al, 2016) to confirm diagnoses. Sixth, the focus on current symptoms excluded lifetime assessments, therefore possibly leaving out important information. Seventh, the current study used a cross-sectional design with mediation analyses which may be statistically problematic; therefore, the current results should be considered preliminary as proper mediation requires a longitudinal design (Shrout, 2011). Finally, future research could incorporate more comprehensive and nuanced views of resilience. For example, a qualitative approach with PSP to understand how individual react to and recover from PPTE may inform how resilience is conceptualized among
PSP and therein further inform quantitative or mixed method studies on proactive and reactive interventions.

**Conclusions**

Using a data subset from a 2018 Canada-wide PSP prevalence study, the current research focused on RCMP members as they had been identified as a potential at-risk population who could use increased resilience and social support (Carleton et al). Social support was expected to mediate the relationship between resilience and symptom measures. The results indicated that social support does mediate the relationship between resilience and symptom measures; however, greater variance was explained by the relationship between resilience and each symptom measure. The current results support future research on social support as a tool for increasing PSP resilience and buffering against mental health challenges. Future considerations include investigating resilience as a complex construct that exists as an individual trait and an organizational influence, and identifying which environmental factors (e.g., policies, procedures) can help to support individual and organizational resilience.
References


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http://doi.org/10.4103/0019-5545.174365


https://doi.org/10.1080/00273171.2011.606718


## Tables

Table 1

Demographics

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<th>Category</th>
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<tr>
<td>Biological Sex</td>
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<tr>
<td>Male</td>
<td>1349</td>
<td>62.6%</td>
</tr>
<tr>
<td>Female</td>
<td>530</td>
<td>24.6%</td>
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<tr>
<td>Age</td>
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</tr>
<tr>
<td>50-59</td>
<td>474</td>
<td>22.0%</td>
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<td>40-49</td>
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<td>18-29</td>
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<td>Marital Status</td>
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<td>Highschool Graduate or Less</td>
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<tr>
<td>Some Post-secondary (less than 4-year college/university program)</td>
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</tr>
<tr>
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<td>99,999 CAD a year or less</td>
<td>359</td>
<td>16.7%</td>
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<tr>
<td>100,000 a year or more</td>
<td>1420</td>
<td>65.9%</td>
</tr>
<tr>
<td>Location</td>
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<tr>
<td>Western Canada (i.e., B.C., AB., Sask., Man.)</td>
<td>1191</td>
<td>55.2%</td>
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<tr>
<td>Eastern Canada (i.e., Ont., Que.)</td>
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<td>15.1%</td>
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<tr>
<td>Atlantic Canada (i.e., N.B., N.S., P.E.I., N.L.)</td>
<td>448</td>
<td>20.8%</td>
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</table>
Table 2

*Internal Reliability*

<table>
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<tr>
<th>Symptom Measure</th>
<th>Cronbach’s Alpha</th>
<th>n - Participants</th>
<th>n - Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAD-7</td>
<td>0.92</td>
<td>1344</td>
<td>7</td>
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<tr>
<td>PCL-5</td>
<td>0.97</td>
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<td>PDSS</td>
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<tr>
<td>PHQ-9</td>
<td>0.90</td>
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<td>9</td>
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<td>BRS</td>
<td>0.90</td>
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<tr>
<td>SPS</td>
<td>0.93</td>
<td>1207</td>
<td>10</td>
</tr>
</tbody>
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*Note.* General Anxiety Disorder 7-Item (GAD-7), PTSD Checklist for the DSM-V (PCL-5), Panic Disorder Severity Scale (PDSS), Patient Health Questionnaire 9-Item (PHQ-9), Brief Resilience Scale (BRS), Social Provisions Scale (SPS)
Appendix A

Brief Resilience Scale

Brief Resilience Scale (BRS)

<table>
<thead>
<tr>
<th>Please respond to each item by marking one box per row</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRS 1 I tend to bounce back quickly after hard times</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>BRS 2 I have a hard time making it through stressful events.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>BRS 3 It does not take me long to recover from a stressful event.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>BRS 4 It is hard for me to snap back when something bad happens.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>BRS 5 I usually come through difficult times with little trouble.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>BRS 6 I tend to take a long time to get over set-backs in my life.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Scoring: Add the responses varying from 1-5 for all six items giving a range from 6-30. Divide the total sum by the total number of questions answered.

My score: ______ item average / 6

Appendix B

Generalized Anxiety Disorder 7-Item Scale

<table>
<thead>
<tr>
<th>Over the last 2 weeks, how often have you been bothered by the following problems?</th>
<th>Not at all sure</th>
<th>Several days</th>
<th>Over half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling nervous, anxious, or on edge</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Not being able to stop or control worrying</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Worrying too much about different things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Trouble relaxing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Being so restless that it’s hard to sit still</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Becoming easily annoyed or irritable</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Feeling afraid as if something awful might happen</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

*Add the score for each column* + + +

Total Score (add your column scores) =

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all __________
- Somewhat difficult __________
- Very difficult __________
- Extremely difficult __________

**Scoring**

Scores of 5, 10, and 15 are taken as the cut-off points for mild, moderate and severe anxiety, respectively. When used as a screening tool, further evaluation is recommended when the score is 10 or greater.

Using the threshold score of 10, the GAD-7 has a sensitivity of 89% and a specificity of 82% for GAD. It is moderately good at screening three other common anxiety disorders - panic disorder (sensitivity 74%, specificity 81%), social anxiety disorder (sensitivity 72%, specificity 80%) and post-traumatic stress disorder (sensitivity 66%, specificity 81%).

Appendix C

Panic Disorder Severity Scale

Panic Disorder Severity Scale (PDSS)

Several of the following questions refer to panic attacks and limited symptom attacks. For this questionnaire we define a panic attack as a sudden rush of fear or discomfort accompanied by at least 4 of the symptoms listed below. In order to qualify as a sudden rush, the symptoms must peak within 10 minutes. Episodes like panic attacks but having fewer than 4 of the listed symptoms are called limited symptom attacks. Here are the symptoms to count.

- Rapid or pounding heartbeat
- Sweating
- Trembling or shaking
- Breathlessness
- Feeling of choking
- Chest pain or discomfort
- Nausea
- Dizziness or faintness
- Feelings of unreality
- Numbness or tingling
- Chills or hot flushes
- Fear of losing control or going crazy
- Fear of dying

Please tick the answers that most apply to your situation.

1. How many panic and limited symptoms attacks did you have during the week?
   - 0 - No panic or limited symptom episodes
   - 1 - No full panic attacks and no more than 1 limited symptom attack/day
   - 2 - 1 or 2 full panic attacks and/or multiple limited symptom attacks/day
   - 3 - More than 2 full attacks but not more than 1/day on average
   - 4 - Full panic attacks occurred more than once a day, more days than not.

2. If you had any panic attacks during the past week, how distressing (uncomfortable, frightening) were they while they were happening? (If you had more than one, give an average rating. If you didn’t have any panic attacks but did have limited symptom attacks, answer for the limited symptom attacks)
   - 0 - Not at all distressing, or no panic or limited symptom attacks during the past week
   - 1 - Mildly distressing (not too intense)
   - 2 - Moderately distressing (intense, but still manageable)
   - 3 - Severely distressing (very intense)
   - 4 - Extremely distressing (extreme distress during all attacks)

3. During the past week, how much have you worried or felt anxious about when your next panic attack would occur or about fears related to the attacks (for example, that they could mean you have physical or mental health problems or could cause you social embarrassment)?
   - 0 - Not at all
   - 1 - Occasionally or only mildly
   - 2 - Frequently or moderately
   - 3 - Very often or to a very disturbing degree
   - 4 - Nearly constantly and to a disabling extent.
4. During the past week were there any places or situations (e.g., public transportation, movie theatres, crowds, bridges, tunnels, shopping centres, being alone) you avoided, or felt afraid of (uncomfortable in, wanted to avoid or leave), because of fear of having a panic attack? Are there any other situations that you would have avoided or been afraid of if they had come up during the week, for the same reason? If yes to either question, please rate your level of fear and avoidance this past week.

<table>
<thead>
<tr>
<th>0 - No fear or avoidance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Occasional fear and/or avoidance but I could usually confront or endure the situation. There was little or no modification of my lifestyle due to this</td>
<td></td>
</tr>
<tr>
<td>2 - Noticeable fear and/or avoidance but still manageable. I avoided some situations, but I could confront them with a companion. There was some modification of my lifestyle because of this, but my overall functioning was not impaired.</td>
<td></td>
</tr>
<tr>
<td>3 - Extensive avoidance. Substantial modification of my lifestyle was required to accommodate the avoidance making it difficult to manage usual activities.</td>
<td></td>
</tr>
<tr>
<td>4 - Pervasive disabling fear and/or avoidance. Extensive modification in my lifestyle was required such that important tasks were not performed.</td>
<td></td>
</tr>
</tbody>
</table>

5. During the past week, were there any activities (e.g., physical exertion, sexual relations, taking a hot shower or bath, drinking coffee, watching an exciting or scary movie) that you avoided, or felt afraid of (uncomfortable doing, wanted to avoid or stop), because they caused physical sensations like those you feel during panic attacks or that you were afraid might trigger a panic attack? Are there any other activities that you would have avoided or been afraid of if they had come up during the week for that reason? If yes to either question, please rate your level of fear and avoidance of these activities this past week.

| 0 - No fear or avoidance of situations or activities because of distressing physical sensations. |  |
| 1 - Occasional fear and/or avoidance. But usually I could confront or endure with little distress activities that cause physical sensations. There was little modification of my lifestyle due to this. |  |
| 2 - Noticeable avoidance but still manageable. There was definite, but limited, modification of my lifestyle such that my overall functioning was not impaired. |  |
| 3 - Extensive avoidance. There was substantial modification of my lifestyle or interference in my functioning. |  |
| 4 - Pervasive and disabling avoidance. There was extensive modification in my lifestyle due to this such that important tasks or activities were not performed. |  |

6. During the past week, how much did the above symptoms altogether (panic and limited symptom attacks, worry about attacks, and fear of situations and activities because of attacks) interfere with your ability to work or carry out your responsibilities at home? (If your work or home responsibilities were less than usual this past week, answer how you think you would have done if the responsibilities had been usual).

| 0 - No interference with work or home responsibilities |  |
| 1 - Slight interference with work or home responsibilities, but I could do nearly everything I could if I didn't have these problems. |  |
| 2 - Significant interference with work or home responsibilities, but I still could manage to do the things I needed to do |  |
| 3 - Substantial impairment in work or home responsibilities; there were many important things I couldn't do because of these problems. |  |
| 4 - Extreme, incapacitating impairment such that I was essentially unable to manage any work or home responsibilities. |  |

7. During the past week, how much did panic and limited symptom attacks, worry about attacks and fear of situations and activities because of attacks interfere with your social life? (If you didn't have many opportunities to socialize this past week, answer how you think you would have done if you did have opportunities.)

| 0 - No interference |  |
| 1 - Slight interference with social activities, but I could do nearly everything I could if I didn’t have these problems. |  |
| 2 - Significant interference with social activities but I could manage to do most things if I made the effort. |  |
| 3 - Substantial impairment in social activities; there are many social things I couldn’t do because of these problems. |  |
| 4 - Extreme, incapacitating impairment, such that there was hardly anything social I could do. |  |
Appendix D

Patient Health Questionnaire 9-Item

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**Patient Health Questionnaire (PHQ-9)**

<table>
<thead>
<tr>
<th>Over the last 2 weeks, how often have you been bothered by any of the following problems?</th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

For office coding: Total Score = ___ + ___ + ___

Total Score ____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- [ ] Not difficult at all
- [ ] Somewhat difficult
- [ ] Very difficult
- [ ] Extremely difficult
Appendix E

PTSD Checklist for the DSM-V

PCL-5

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

<table>
<thead>
<tr>
<th>In the past month, how much were you bothered by:</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Repeated, disturbing, and unwanted memories of the stressful experience?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Repeated, disturbing dreams of the stressful experience?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Feeling very upset when something reminded you of the stressful experience?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Avoiding memories, thoughts, or feelings related to the stressful experience?</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8. Trouble remembering important parts of the stressful experience?</td>
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</tr>
<tr>
<td>9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10. Blaming yourself or someone else for the stressful experience or what happened after it?</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Loss of interest in activities that you used to enjoy?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Feeling distant or cut off from other people?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Irritable behavior, angry outbursts, or acting aggressively?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Taking too many risks or doing things that could cause you harm?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Being “superalert!” or watchful or on guard?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Feeling jumpy or easily startled?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Having difficulty concentrating?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Trouble falling or staying asleep?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F

Social Provisions Scale

The Social Provisions Scale

Instructions
In answering the next set of questions I am going to ask you, I want you to think about your current relationship with friends, family members, coworkers, community members, and so on. Please tell me to what extent you agree that each statement describes your current relationships with other people. Use the following scale to give me your opinion. (Hand a response card.) So, for example, if you feel a statement is very true of your current relationships, you would tell me "strongly agree". If you feel a statement clearly does not describe your relationships, you would respond "strongly disagree". Do you have any questions?

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. There are people I can depend on to help me if I really need it. __________
2. I feel that I do not have close personal relationships with other people. __________
3. There is no one I can turn to for guidance in times of stress. __________
4. There are people who depend on me for help. __________
5. There are people who enjoy the same social activities I do. __________
6. Other people do not view me as competent. __________
7. I feel personally responsible for the well-being of another person. __________
8. I feel part of a group of people who share my attitudes and beliefs. __________
9. I do not think other people respect my skills and abilities. __________
10. If something went wrong, no one would come to my assistance. __________
11. I have close relationships that provide me with a sense of emotional security and well-being. __________
12. There is someone I could talk to about important decisions in my life. __________
13. I have relationships where my competence and skills are recognized. __________
14. There is no one who shares my interests and concerns. __________
15. There is no one who really relies on me for their well-being. __________
16. There is a trustworthy person I could turn to for advice if I were having problems. __________
17. I feel a strong emotional bond with at least one other person. __________
18. There is no one I can depend on for aid if I really need it. __________
19. There is no one I feel comfortable talking about problems with. __________
20. There are people who admire my talents and abilities. __________
21. I lack a feeling of intimacy with another person. __________
22. There is no one who likes to do the things I do. __________
23. There are people I can count on in an emergency. __________
24. No one needs me to care for them. __________