# Post-Secondary Stress and Mental Well-Being: A Scoping Review of the Academic Literature

Brooke Linden, and Heather Stuart
*Queen's University*

## ABSTRACT

Post-secondary students have been identified as an at-risk population for chronic stress and poor mental health. We conducted a scoping review of the academic literature surrounding student stress and mental well-being as the first phase of research in the development of Canada's National Standard for the Psychological Health and Safety of Post-Secondary Students. Major thematic findings included student stress, resilience through effective coping and help-seeking, and programs or strategies to improve campus mental health. Recommendations include a call for increased mental health promotion and mental illness prevention activities that are sensitive to diverse cultures, ethnicities, religions, and sexualities.

**Keywords:** stress, mental health, post-secondary, scoping review, literature review

## RÉSUMÉ

Les étudiants du postsecondaire ont été reconnus comme une population à risques de stress chronique et de problèmes de santé mentale. Nous avons entrepris une revue de la littérature portant sur le stress et le bien-être psychologique des étudiants dans le cadre de la première phase de recherche en vue de l'élaboration de la « Norme sur la santé et la sécurité psychologiques pour les étudiants du postsecondaire (Norme EPS) ». Les principales conclusions ont mis en évidence les thématiques suivantes : le stress étudiant ; la résilience grâce à une adaptation efficace et la recherche d'aide ; et les programmes ou stratégies pour améliorer la santé mentale à travers les campus. Les recommandations portent sur la nécessité d'augmenter les activités de promotion de la santé mentale et de prévention de la maladie mentale en tenant compte des diversités culturelles, ethniques, religieuses et sexuelles.

**Mots-clés :** stress, santé mentale, postsecondaire, revue exploratoire, revue de la littérature

Brooke Linden, Health Services and Policy Research Institute, Queen's University, Kingston, Ontario; Heather Stuart, Health Services and Policy Research Institute, Queen's University, Kingston, Ontario.

Correspondence concerning this article should be addressed to Brooke Linden, Health Services and Policy Research Institute, Queen's University, Kingston, Ontario, K7L 3L3. Email: brooke.linden@queensu.ca

## BACKGROUND

In 2018, Bell Canada, the Rossy Family Foundation, and the Royal Bank of Canada committed funding toward the development of a National Standard for the Psychological Health and Safety of Post-Secondary Students ("the Standard") in partnership with the Mental Health Commission of Canada and the Canadian Standards Association. The Standard will provide post-secondary institutions with a best-practice framework for the management and improvement of students' mental health and well-being. This paper summarizes the results of a large scoping review of the academic literature, conducted as the first phase of research in the development of the Standard.

Over the past decade, mental health problems among Canadian post-secondary students have become a main focus of attention (American College Health Association, 2016). Both the 2013 and 2016 iterations of the National College Health Assessment II revealed a high prevalence of mental health challenges among a sample of over 43,000 Canadian post-secondary students (American College Health Association, 2013, 2016). Students face a multitude of stressors within the post-secondary setting, placing them at increased risk for a range of mental health issues. Chronic stress is highly correlated with negative mental health outcomes (Crompton, 2015; Godin, Kittel, Coppieters, & Siegrist, 2005) and has been shown to have a substantial impact on students' academic performance (American College Health Association, 2016). Poor mental health among students has also been linked to other negative outcomes, including substance misuse, relationship difficulties, absenteeism and drop-out, engagement in risk behaviours, and suicide.

The overall goal of this review was to define the current state of research relative to students' experiences regarding their psychological health and safety in post-secondary environments. A secondary objective was to identify both emerging and existing strategies with respect to supporting students' psychological health and safety. Because we sought to understand the range of research activity regarding the evaluation and mitigation of mental health-related challenges among post-secondary students, we chose to conduct a broad and comprehensive scoping review, rather than a more focused and critical systematic review. To our knowledge, a comprehensive, multidisciplinary review of the academic literature pertaining to post-secondary stress and mental well-being has not been completed. Mapping the existing literature is an important first step in the development of a national strategy to improve Canadian post-secondary students' mental health and well-being.

## METHODS

We conducted a scoping review in May 2018 to map the existing academic literature pertaining to post-secondary stress and mental well-being. The purpose of a scoping review is not to describe the findings of each article in great detail, but rather to examine the extent, range, and nature of research activity in a particular area (Arksey & O'Malley, 2005). This study followed a five-step framework: (1) identify the research question, (2) identify relevant studies, (3) select studies, (4) extract data, and (5) analyze (Arksey & O'Malley, 2005; Levac, Colquhoun, & O'Brien, 2010). These steps are detailed below.

**(1) Identify the research question.** A broad research question is encouraged for scoping reviews in order to facilitate a wide range of coverage (Arksey & O'Malley, 2005), ensuring that a clearly articulated target population, outcome of interest, and scope of inquiry are identified (Levac et al., 2010). Our research

question was, "What is the current state of the academic research relative to students' experiences regarding their psychological (mental) health and safety in post-secondary environments?"

**(2) Identify relevant studies and study selection.** Six databases covering multiple research disciplines were searched for published articles: CINAHL, Medline, Embase, PsycINFO, Sociological Abstracts, and Education Source. Databases were searched using keyword combinations and subject headings based on recommendations from a reference librarian. An example of the search strategy (e.g., keyword combinations) used for the PsycINFO database can be found in Table 1. Efforts were made to keep the search strategy as similar as possible across databases.

**Table 1**

**Key Word Search Strategy Used (PsycINFO Database)**

| # | Key Search Terms | Results |
|---|---|---|
| 1 | students/ or business students/ or college students/ or dental students/ or graduate students/ or law students/ or medical students/ or postgraduate students/ or transfer students/ or vocational school students/ [1] | 114,840 |
| 2 | mental health | 56,767 |
| 3 | distress | 19,527 |
| 4 | exp stress [2] | 99,051 |
| 5 | exp emotional adjustment | 20,752 |
| 6 | exp resilience (psychological) | 11,411 |
| 7 | OR /2 to 6 | 195,207 |
| 8 | mental health programs/ OR mental health program evolution/ OR mental health services/ OR program development/ | 43,799 |
| 9 | 1 and 7 | 5,770 |
| 10 | 1 and 8 | 737 |
| 11 | 9 and 10 | 114 |
| 12 | limit 11 to (English language and year = "2000 – current") | 103 |

*Note*. 1. The term "students" was not "exploded" in its entirety in order to exclude out-of-scope students (i.e., those below the post-secondary level).

2. The explanation indicates the key word was "exploded" to include related concepts (i.e., the "explosion" of stress also includes key words such as "academic stress," "chronic stress," "social stress," "psychological stress," etc.).

**(3) Data extraction and thematic analysis.** A total of 150 duplicate articles were removed from the initial sample of records. Figure 1 details the process through which articles were screened for inclusion into the review. We conducted an international search, though articles were restricted by English language, and a publication date range between 2000 and 2018 to assess current practices, as we thought that the majority of the literature would be published after 2000. The data extracted from articles included author(s), title, abstract, country of publication, year of publication, sample size, study design, and main themes investigated. Articles were filtered first by title, then abstract by two reviewers. Reviewers evaluated articles separately, and then met to compare results. A third reviewer was available to break ties in the event of disagreement. A final sample of 172 academic articles were included in the review. The main themes explored by each article were thoroughly discussed among reviewers, at which point articles were electronically sorted into corresponding categories using Mendeley reference manager to organize the narrative of this review.

**Figure 1**

**Flowchart Detailing Screening of Academic Articles for Review**
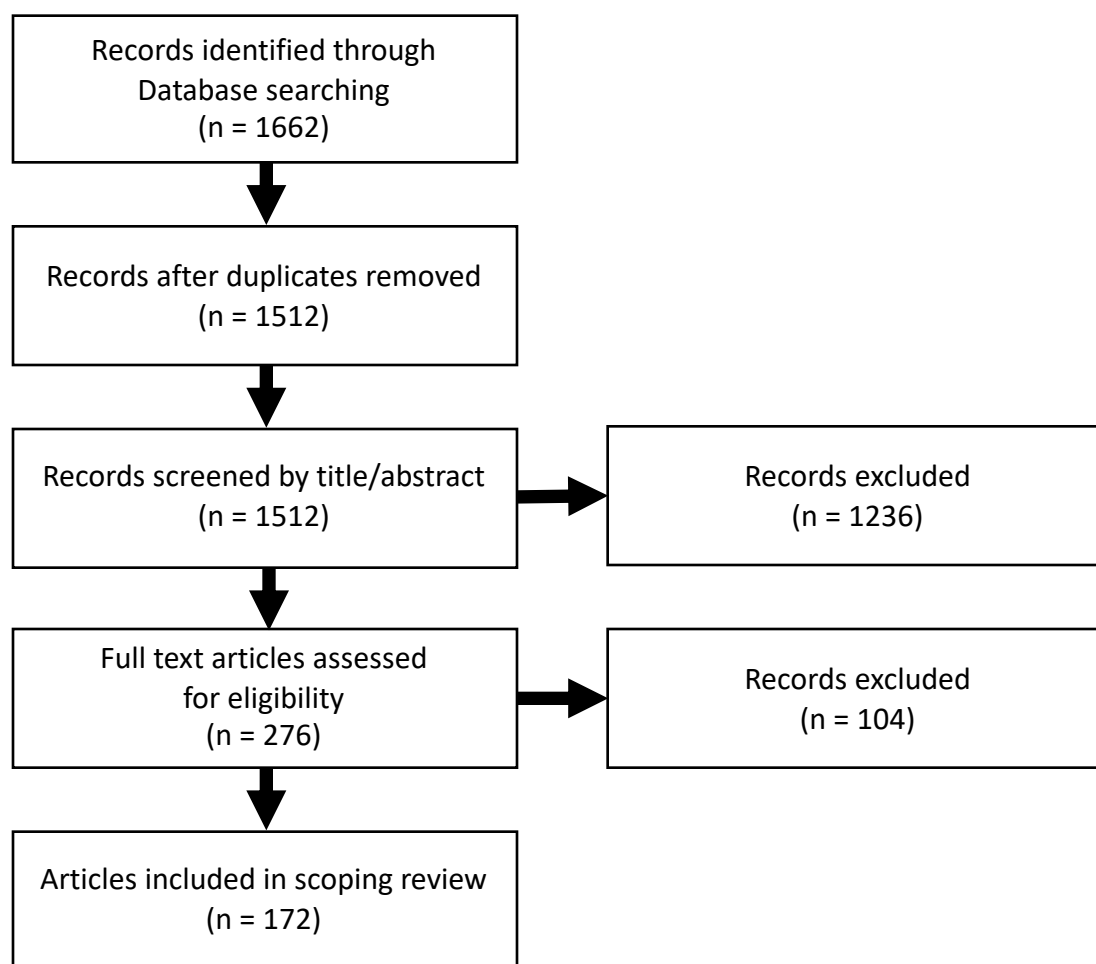
## RESULTS

Three overarching themes emerged from the data. Articles that reported prevalence estimates for stress, mental health problems, symptoms or diagnoses of mental illnesses, or that discussed the sources of student stress and/or distress were coded as belonging to the "student stress and distress" theme. Articles that reported specifically on student resilience, methods of coping, help-seeking, or scans of mental health services and supports available to students were coded as belonging to the "student resilience" theme. Finally, articles that described the development or evaluation of a program, intervention, or strategies designed to improve post-secondary students' resilience and/or mental health and well-being were code as belonging to the "programs and interventions" theme.

### Student Stress and Distress

The prevalence of stress and distress among post-secondary students has been widely documented. A survey of the literature revealed reviews, descriptive, and analytic studies, though the majority were cross-sectional ($n = 100$, 58%), and few used participant sample sizes larger than 1,000 ($n = 35$, 23%, excluding reviews). Additional detail on study designs and sample sizes can be found in Tables 2, 3 and 4. The majority of studies included in this review demonstrated evidence of poor mental health functioning among post-secondary students (Durand-Bush, McNeill, Harding, & Dobransky, 2015; Ruckert, 2015; Storrie, Ahern, & Tuckett, 2010; Topham & Moller, 2011) and high levels of stress (Garcia-Williams, Moffitt, & Kaslow, 2014; Lee, Wuertz, Rogers, & Chen, 2013; Robinson, Jubenville, Renny, & Cairns, 2016; Wyatt & Oswalt, 2013). In several studies, students were shown to have significantly worse emotional health and higher distress levels when compared to the general population (Bernhardsdottir, Vilhjalmsson, & Champion, 2013; Stallman, 2008; Stewart-Brown et al., 2000). While one study conducted in the United States found there were no significant differences in the rates of psychiatric disorders observed between a sample of college students and their non-college attending peers, they reported that nearly half of their sample of students ($n = 2,188$) had experienced a clinical mental illness within the past year (Blanco et al., 2008).

These findings are consistent with the above-average stress levels observed among post-secondary students across Canada through the National College Health Assessment survey, conducted by the American College Health Association (2013; 2016). One longitudinal study explored Canadian post-secondary students' stress levels over the course of a semester, finding that stress and symptoms of distress peaked in December, falling over the course of the second semester (Barker, Howard, Villemaire-Krajden, & Galambos, 2018). Several specific sources of stress were identified in the academic literature and are discussed below.

**Table 2**

**Articles in Stress/Distress Thematic Category, Chronological Order**

| Author | Year | Country | Study Design | Sample |
|---|---|---|---|---|
| Stewart-Brown et al. | 2000 | UK | Analytic (Cross-sectional) | 1,208 |
| Hampton and Roy | 2002 | Canada | Analytic (Qualitative) | 18 |
| Oswald and Clark | 2003 | USA | Analytic (Longitudinal) | 137 |
| Monk et al. | 2004 | UK | Descriptive | 210 |
| Offstein et al. | 2004 | USA | Analytic (Qualitative) | 16 |
| Pillay | 2005 | USA | Analytic (Cross-sectional) | 136 |
| Amar and Gennaro | 2005 | USA | Analytic (Cross-sectional) | 863 |
| Dusselier et al. | 2005 | USA | Descriptive | 462 |
| Amar | 2006 | USA | Analytic (Cross-sectional) | 601 |
| Schwartz | 2006 | USA | Analytic (Longitudinal) | 3,400 |
| Hyun et al. | 2007 | USA | Analytic (Cross-sectional) | 3,121 |
| Buote et al. | 2007 | Canada | Analytic (Mixed Methods) | 1,845 |
| Young et al. | 2007 | USA | Analytic (Cross-sectional) | 406 |
| Tremblay et al. | 2008 | Canada | Analytic (Cross-sectional) | 1,174 |
| Nelson et al. | 2008 | USA | Analytic (Cross-sectional) | 3,206 |
| Gollust et al. | 2008 | USA | Analytic (Cross-sectional) | 2,843 |
| Stallman | 2008 | Australia | Analytic (Cross-sectional) | 384 |
| Ruthig et al. | 2009 | USA | Analytic (Longitudinal) | 288 |
| Iturbide et al. | 2009 | USA | Analytic (Cross-sectional) | 148 |
| Próspero and Kim | 2009 | USA | Analytic (Cross-sectional) | 676 |
| Storrie et al. | 2010 | Australia | Review (Systematic) | — |
| Tosevski and Milovancevic | 2010 | Global | Review | — |
| Lindsay | 2010 | Canada | Editorial | — |
| Yoon et al. | 2010 | USA | Analytic (Cross-sectional) | 410 |
| Bjorklund et al. | 2010 | Finland | Analytic (Cross-sectional) | 905 |
| Cairns | 2010 | Canada | Descriptive | 2,943 |
| Topham and Moller | 2011 | UK | Analytic (Longitudinal) | 117 |
| Welle and Graf | 2011 | USA | Analytic (Cross-sectional) | 459 |
| Ruzek et al. | 2011 | USA | Analytic (Cross-sectional) | 601 |
| Rickwood et al. | 2011 | Australia | Analytic (Cross-sectional) | 603 |
| Arria et al. | 2011 | USA | Analytic (Cross-sectional) | 158 |
| Currie et al. | 2012 | Canada | Analytic (Mixed Methods) | 60 |
| Byrd and McKinney | 2012 | USA | Analytic (Cross-sectional) | 2,203 |
| Keyes et al. | 2012 | USA | Analytic (Cross-sectional) | 5,689 |
| Dinh et al. | 2013 | USA | Analytic (Cross-sectional) | 495 |
| O'Keeffe | 2013 | Australia | Review | — |

**Table 2, continued**

**Articles in Stress/Distress Thematic Category, Chronological Order**

| Author | Year | Country | Study Design | Sample |
|---|---|---|---|---|
| Nakashima et al. | 2013 | Japan | Analytic (Cross-sectional) | 163 |
| Paul et al. | 2013 | USA | Analytic (Cross-sectional) | 2,000 |
| Lee et al. | 2013 | USA | Analytic (Cross-sectional) | 103 |
| Kruisselbrink Flatt | 2013 | Canada | Editorial | — |
| Whitton et al. | 2013 | USA | Analytic (Cross-sectional) | 889 |
| Wyatt and Oswalt | 2013 | USA | Analytic (Cross-sectional) | 27,387 |
| Bernhardsdottir and Vilhjalmsson | 2013 | Iceland | Descriptive | 1,986 |
| Ketchen et al. | 2014 | USA | Analytic (Cross-sectional) | 43,210 |
| Jordan et al. | 2014 | USA | Analytic (Longitudinal) | 750 |
| Garcia-Williams et al. | 2014 | USA | Analytic (Cross-sectional) | 301 |
| Gallagher | 2015 | USA | Analytic (Cross-sectional) | 275 |
| Brook and Willoughby | 2015 | Canada | Analytic (Longitudinal) | 942 |
| Lovell et al. | 2015 | Australia | Analytic (Cross-sectional) | 751 |
| Robertson et al. | 2015 | Canada | Analytic (Qualitative) | 23/25* |
| Walsemann et al. | 2015 | USA | Analytic (Longitudinal) | 4,643 |
| Watson et al. | 2015 | Australia | Analytic (Cross-sectional) | 614 |
| Lederer et al. | 2015 | USA | Analytic (Cross-sectional) | 70,068 |
| Taliaferro and Muehlenkamp | 2015 | USA | Analytic (Cross-sectional) | 16,044 |
| Smith et al. | 2015 | USA | Analytic (Cross-sectional) | 872 |
| Durand-Bush et al. | 2015 | UK | Descriptive | 469/647* |
| Holmes et al. | 2016 | Canada | Analytic (Cross-sectional) | 1,964 |
| Larson et al. | 2016 | USA | Analytic (Cross-sectional) | 526 |
| McFadden | 2016 | USA | Review | — |
| Luca et al. | 2016 | USA | Analytic (Cross-sectional) | 26,457 |
| Valerio et al. | 2016 | USA | Analytic (Cross-sectional) | 14,870 |
| Burke et al. | 2016 | USA | Analytic (Cross-sectional) | 155 |
| Hawley et al. | 2016 | USA | Analytic (Cross-sectional) | 2,049 |
| Adams et al. | 2016 | USA | Analytic (Cross-sectional) | 157 |
| Robinson et al. | 2016 | Canada | Analytic (Cross-sectional) | 400 |
| Ridner et al. | 2016 | USA | Analytic (Cross-sectional) | 568 |
| Holmes and Silvestri | 2016 | Canada | Analytic (Cross-sectional) | 1,964 |
| Villatte et al. | 2017 | Canada | Analytic (Cross-sectional) | 389 |
| Lederer | 2017 | USA | Editorial | — |
| Corona et al. | 2017 | USA | Analytic (Cross-sectional) | 198 |
| Vidourek | 2017 | USA | Analytic (Cross-sectional) | 777 |
| Richardson et al. | 2017 | UK | Analytic (Longitudinal) | 454 |

**Table 2, continued**

**Articles in Stress/Distress Thematic Category, Chronological Order**

| Author | Year | Country | Study Design | Sample |
|---|---|---|---|---|
| Van Laethem et al. | 2017 | Netherlands | Analytic (Longitudinal) | 44 |
| Seemen et al. | 2017 | USA | Analytic (Cross-sectional) | 2,583 |
| Cramer et al. | 2017 | USA | Analytic (Cross-sectional) | 572 |
| McBeath et al. | 2018 | Canada | Analytic (Qualitative) | 25 |
| Karatekin | 2018 | USA | Analytic (Cross-sectional) | 239 |
| Deer et al. | 2018 | USA | Analytic (Cross-sectional) | 549 |
| Barker et al. | 2018 | Canada | Analytic (Longitudinal) | 198/267* |

* Studies utilized more than one sample. All sample sizes are reported.

**Table 3**

**Articles in Resilience Thematic Category, Chronological Order**

| Author | Year | Country | Study Design | Sample |
|---|---|---|---|---|
| Davies et al. | 2000 | USA | Analytic (Qualitative) | 49 |
| Ey et al. | 2000 | USA | Analytic (Cross-sectional) | 315 |
| O'Hare | 2001 | USA | Analytic (Cross-sectional) | 505 |
| Lanier et al. | 2001 | USA | Analytic (Cross-sectional) | 772 |
| Givens and Tjia | 2002 | USA | Analytic (Cross-sectional) | 194 |
| Chang | 2007 | China | Analytic (Cross-sectional) | 961 |
| Rosenthal and Wilson | 2008 | USA | Analytic (Cross-sectional) | 1,773 |
| Salzer et al. | 2008 | USA | Analytic (Cross-sectional) | 508 |
| Yorgason et al. | 2008 | USA | Analytic (Cross-sectional) | 266 |
| Worley | 2008 | USA | Analytic (Qualitative) | 8 |
| Eisenberg et al. | 2009 | USA | Analytic (Cross-sectional) | 5,555 |
| Al-Krenawi et al. | 2009 | USA | Analytic (Cross-sectional) | 716 |
| Burris et al. | 2009 | US | Analytic (Cross-sectional) | 353 |
| Mattanah et al. | 2011 | USA | Review (Meta-analysis) | — |
| Hartley | 2011 | USA | Analytic (Cross-sectional) | 605 |
| Masuda and Boone | 2011 | USA | Analytic (Cross-sectional) | 466 |
| Crosby and Bossley | 2012 | USA | Analytic (Cross-sectional) | 235 |
| Gaspersz et al. | 2012 | Netherlands | Analytic (Cross-sectional) | 2,266 |
| Woodford et al. | 2012 | USA | Analytic (Cross-sectional) | 114 |
| Locke et al. | 2012 | USA | Review (Systematic) | — |
| Bilican | 2013 | Turkey | Analytic (Cross-sectional) | 115 |
| Czyz et al. | 2013 | USA | Analytic (Qualitative) | 165 |
| Rau et al. | 2013 | Germany | Review (Systematic) | — |
| McCaslin et al. | 2013 | USA | Descriptive (Case Series) | — |
| Mason et al. | 2014 | USA | Analytic (Cross-sectional) | 670 |
| Allen and Holder | 2014 | Canada | Analytic (Cross-sectional) | 570 |
| Stewart et al. | 2014 | Canada | Analytic (Cross-sectional) | 187 |
| Stebleton et al. | 2014 | USA | Analytic (Cross-sectional) | 58,017 |
| Burlaka et al. | 2014 | Ukraine | Analytic (Mixed Methods) | 42/29 |
| Bonar et al. | 2015 | USA | Analytic (Cross-sectional) | 1,439 |
| Ness et al. | 2015 | USA | Analytic (Cross-sectional) | 214 |
| Pelts and Albright | 2015 | USA | Analytic (Cross-sectional) | 702 |
| Schonfeld et al. | 2015 | USA | Analytic (Cross-sectional) | 173 |
| Rückert | 2015 | Germany | Review (Commentary) | — |
| Knowlden et al. | 2016 | USA | Analytic (Cross-sectional) | 195 |
| Barton and Hirsch | 2016 | USA | Analytic (Cross-sectional) | 524 |

**Table 3, continued**

**Articles in Resilience Thematic Category, Chronological Order**

| Author | Year | Country | Study Design | Sample |
|---|---|---|---|---|
| Czyzewska and McKenzie | 2016 | USA | Analytic (Cross-sectional) | 7,476 |
| Beatie et al. | 2016 | Canada | Analytic (Cross-sectional) | 486 |
| Lannin et al. | 2016 | USA | Analytic (Cross-sectional) | 370 |
| Sontag-Padilla et al. | 2016 | USA | Analytic (Cross-sectional) | 47,961 |
| Oswalt et al. | 2016 | USA | Review (Commentary) | — |
| Currier et al. | 2016 | USA | Analytic (Cross-sectional) | 3,780 |
| Kim and Zane | 2016 | USA | Analytic (Cross-sectional) | 656 |
| Edkins et al. | 2017 | Canada | Analytic (Cross-sectional) | 507 |
| Metzger et al. | 2017 | USA | Analytic (Cross-sectional) | 1,027 |
| Blavos et al. | 2017 | USA | Review (Systematic) | — |
| Kaur and Martin | 2017 | Australia | Analytic (Cross-sectional) | 260 |
| Niv and Bennett | 2017 | USA | Analytic (Qualitative) | 71 |
| Williston and Roemer | 2017 | USA | Analytic (Cross-sectional) | 87 |
| Levin et al. | 2018 | USA | Analytic (Cross-sectional) | 200 |
| Rafal et al. | 2018 | USA | Analytic (Cross-sectional) | 1,242 |

**Table 4**

**Articles in Programs/Interventions Thematic Category, Chronological Order**

| Author | Year | Country | Study Design | Sample |
|---|---|---|---|---|
| Davidson and Beck | 2006 | USA | Analytic (Cross-sectional) | 373 |
| Veeser and Blakemore | 2006 | USA | Descriptive (Case Study) | — |
| Adams et al. | 2007 | USA | Analytic (Cross-sectional) | 22,073 |
| Li et al. | 2009 | China | Analytic (Cross-sectional) | 277 |
| Currie et al. | 2010 | USA | Analytic (Qualitative) | 10 |
| Kalcthaler | 2010 | USA | Descriptive (Case Series) | — |
| Washburn and Mandrusiak | 2010 | Canada | Descriptive (Case Study) | — |
| Davies et al. | 2010 | USA | Descriptive (Case Series) | — |
| Chung et al. | 2011 | USA | Analytic (Longitudinal) | 801 |
| Orzech and Salafsky | 2011 | USA | Analytic (Mixed Methods) | 4,513 |
| Conley et al. | 2013 | USA | Review (Scoping) | — |
| Stanton et al. | 2013 | Canada | Descriptive | 690 |
| Bell | 2013 | Canada | Descriptive | 77 |
| Day et al. | 2013 | USA | Experimental (RCT) | 66 |
| Bergen-Cico et al. | 2013 | USA | Quasi-Experimental | 119 |
| Heck et al. | 2014 | Canada | Analytic (Cross-sectional) | 45 |
| Dell et al. | 2015 | Canada | Mixed Methods | 419/87 |
| Bodenlos et al. | 2015 | USA | Analytic (Cross-sectional) | 310 |
| Levin et al. | 2015 | USA | Quasi-Experimental | 112 |
| Rawana et al. | 2015 | Canada | Mixed Methods | 12 |
| Beck et al. | 2015 | USA | Analytic (Longitudinal) | 29 |
| Windhorst and Williams | 2015 | Canada | Analytic (Qualitative) | 12 |
| King et al. | 2015 | USA | Experimental (RCT) | 76 |
| Rose et al. | 2015 | Canada | Descriptive | 194 |
| Jaworska et al. | 2016 | Canada | Analytic (Cross-sectional) | 274 |
| DiPlacito-DeRango | 2016 | Canada | Review (Commentary) | — |
| Armstrong and Burcin | 2016 | USA | Descriptive | 63 |
| Fernandez et al. | 2016 | Australia | Review (Systematic) | — |
| Ekore et al. | 2016 | Nigeria | Quasi-Experimental | 20 |
| Windhorst and Williams | 2016 | Canada | Review (Commentary) | — |
| Brewerton and Woolley | 2016 | USA | Descriptive (Case Series) | — |
| Montagni et al. | 2016 | Spain | Descriptive | 600 |
| De Somma et al. | 2017 | Canada | Analytic (Cross-sectional) | 274 |
| Cornish et al. | 2017 | Canada | Descriptive (Case Series) | — |
| Poole et al. | 2017 | Canada | Mixed Methods | 997/1,444 |
| Muckle and Lasikiewicz | 2017 | Singapore | Quasi-Experimental | 62 |

### Table 4, continued

### Articles in Programs/Interventions Thematic Category, Chronological Order

| Author | Year | Country | Study Design | Sample |
| --- | --- | --- | --- | --- |
| Kerrigan et al. | 2017 | USA | Analytic (Qualitative) | 13 |
| Johnson et al. | 2017 | USA | Analytic (Cross-sectional) | 257 |
| Burrows | 2017 | USA | Analytic (Qualitative) | 28 |
| Cunningham et al. | 2017 | USA | Analytic (Cross-sectional) | 909 |
| Delgado et al. | 2018 | USA | Analytic (Cross-sectional) | 48 |
| Bilodeau and Meissner | 2018 | Canada | Quasi-Experimental | 289 |

**Adjustment to Post-Secondary Lifestyle.** During their adjustment to the post-secondary setting, students experience a variety of changes to their environment in addition to an increase in academic expectations and workload. Stress related to adjustment is associated with parental relationships (Burke, Ruppel, & Dinsmore, 2016), engagement in unhealthy behaviours (Lovell, Nash, Sharman, & Lane, 2015), and changes in students' sense of academic control (Ruthig, Haynes, Stupnisky, & Perry, 2009). While traditionally, emerging adulthood is marked by a lessening of parental influence in favour of peer influence (Arnett, 2000), Burke and colleagues (2016) found that students' daily happiness was positively associated with daily communication and openness with their parents. Similarly, students under greater stress who engaged less with their parents, reported a greater degree of loneliness. In another study, students who reported poor sleep patterns, skipping meals, and a lack of physical activity were more likely to report symptoms of mental illnesses (Lovell et al., 2015). A large, cross-sectional study also found that students with the worst sleep patterns had the poorest self-reported health, while sleep quality decreased as stress or alcohol consumption increased (Valerio, Kim, & Sexton-Radek, 2016). Conversely, healthful behaviours, such as getting enough sleep, engaging in regular physical activity, and eating a balanced diet have been linked to reductions in stress (Welle & Graf, 2011) and improved well-being (Ridner, Newton, Staten, Crawford, & Hall, 2016). Finally, students' sense of mastery over their future was revealed to be an important component of a successful adjustment. Ruthig and colleagues (2009) found that students who perceived greater levels of academic control reported lower stress levels and better overall mental health. While individual characteristics, such as self-efficacy and optimism can be difficult to improve or change, perceived academic control is a factor that may be enhanced through intervention, presenting an opportunity for future consideration in the development of stress management programs for students.

**Academics.** Academic stressors pose a unique and complex challenge with respect to students' mental health due to the potential for bidirectional causality: Academic stress is associated with poor mental health outcomes, but poor mental health has also been associated with poor academic performance and a reduction in student success (Holmes & Silvestri, 2016; Larson, Orr, & Warne, 2016; Luca et al., 2016; McFadden, 2016). Management of academic demands is one of the most commonly cited sources of student stress (Cairns, Massfeller, & Deeth, 2010; Kruisselbrink Flatt, 2013; Robinson et al., 2016). First-year students, in particular, often experience significant changes to both the quantity and difficulty of their academic workload, in addition to higher expectations for preparedness and individual management of priorities. Students have identified a number of academic stressors, including the amount of coursework or research (Monk, 2004; Offstein, Larson, Mcneill, & Mwale, 2004; Stewart-Brown et al., 2000), lack of time to complete assignments (Monk, 2004), difficulty of course content (Monk, 2004), test anxiety (Tosevski & Milovancevic, 2010), fear of failure (Monk, 2004; Villatte, Marcotte, & Potvin, 2017), lack of motivation (Monk, 2004), and an inability to concentrate (Welle & Graf, 2011).

While graduate students are typically thought of as being more "hardy" than undergraduates, several studies captured by this review reported a high prevalence of distress among this population of students (Garcia-Williams et al., 2014; Van Laethem, Beckers, Dijksterhuis, & Geurts, 2017; Wyatt & Oswalt, 2013). In 2013, Wyatt and Oswalt conducted a large cross-sectional study of post-secondary students' self-reported mental health among a sample of over 27,000 undergraduate and graduate students in the United States. While graduate students reported lower rates of mental illness, they reported higher stress levels than their

undergraduate counterparts (Wyatt & Oswalt, 2013). Academic stressors reported by graduate students tend to pertain more to the completion of milestones in graduate programs, including dissertation research, writing, and defence (Offstein et al., 2004; Van Laethem et al., 2017).

**Campus culture.** A successful transition to the post-secondary setting is often discussed in the context of positive academic outcomes, but evidence suggests that social integration into the campus culture and social space is also a key component of students' ability to thrive (Brook & Willoughby, 2015). Campus culture has been consistently linked to students' psychological health and well-being, with negative perceptions or experiences with campus culture predicting less favourable health outcomes.

Unfortunately, many students belonging to ethnic minorities continue to report experiences of racism on campus, particularly Indigenous students (Currie, Wild, Schopflocher, Laing, & Veugelers, 2012; Hampton & Roy, 2002; Lindsay, 2010). This may provide a partial explanation for why students identifying as ethnic minorities consistently report higher stress levels and poorer mental health than their counterparts (Hawley et al., 2016; Locke, Bieschke, Castonguay, & Hayes, 2012). In fact, one study found prejudicial attitudes (including both racism and sexism) contributed to the prediction of depression among undergraduate students in the United States (Dinh, Holmberg, Ho, & Haynes, 2013). Additionally, several studies have suggested that the Eurocentric modes of thought in the North American post-secondary systems contribute to a diminishing sense of belonging on campus for international students (Hyun, Quinn, Madon, & Lustig, 2007; Robertson, Holleran, & Samuels, 2015), Indigenous students (Robertson et al., 2015), and students belonging to ethnic minorities (Corona et al., 2017; Iturbide, Raffaelli, & Carlo, 2009; Pillay, 2005; Ruzek, Nguyen, & Herzog, 2011). A sense of campus community, or belongingness, has been shown to be an important predictor of students' overall well-being in terms of both psychological health and social support among students in the United States (Dinh et al., 2013; Ketchen, Gaddis, Heinze, Beck, & Eisenberg, 2015), Canada (McBeath, Drysdale, & Bohn, 2018), Australia (O'Keeffe, 2013), and Japan (Nakashima, Isobe, & Ura, 2013). In fact, one study found that sense of belongingness was a critical factor in improving student retention in post-secondary institutions across Australia (O'Keeffe, 2013).

Another component of campus culture comprises students' perceptions of safety, which are influenced by experiences of sexual assault (Jordan, Combs, & Smith, 2014; Paul et al., 2013; Yoon, Funk, & Kropf, 2010), stalking (Amar, 2006), physical and emotional abuse (Vidourek, 2017), intimate partner violence (IPV; Amar & Gennaro, 2005; Bjorklund, Hakkanen-Nyholm, Huttunen, & Kunttu, 2010; Próspero & Kim, 2009), and pressure to engage in substance use in social settings (Rickwood, George, Rhian, & Mikhailovich, 2011). Female and male students tend to experience different safety concerns, with females more frequently reporting sexual harassment or assault, IPV, and emotional abuse, and males more frequently reporting physical assault, and substance use with the related safety concerns (American College Health Association, 2016; Rickwood et al., 2011). Safety concerns on campus have been linked to reduced academic performance and poor mental health (Jordan et al., 2014; Próspero, 2009; Rickwood et al., 2011; Tremblay et al., 2008).

**Concern for the future.** For many students, concern for the future is a substantial source of stress. One study found that concern about securing a career post-graduation was one of the most common reasons Canadian post-secondary students sought help from campus counselling centres (Cairns et al., 2010). Another study found that anxiety surrounding concern for the future had a significant impact on students' career-related self-efficacy and job-seeking intentions (Deer, Gohn, & Kanaya, 2018). Many students have

reported feeling a constant pressure to succeed (Villatte et al., 2017), as well as concern about their acceptance into graduate school or a professional program of their choosing (e.g., law, medical school). For graduate students, concerns for the future go beyond securing a job (though this continues to be a substantial source of stress) and into the realm of family planning and achieving a work-life balance (Wyatt & Oswalt, 2013). Graduate students often report struggling with fulfilling multiple roles in their lives (e.g., student, parent, spouse, friend, etc.; Offstein et al., 2004).

**Financial strain.** Students have cited work-related problems and financial concerns as significant sources of stress (Kruisselbrink Flatt, 2013; Richardson, Elliott, Roberts, & Jansen, 2017; Stewart-Brown et al., 2000). Many students are required to balance their studies with part-time work in order to pay for expenses, often acquiring large student loans to offset costs, resulting in stress surrounding looming loan payments following graduation (Richardson et al., 2017; Walsemann, Gee, & Gentile, 2015). Additionally, mounting credit card debt has also been associated with increased stress and negative health outcomes among post-secondary students (Nelson, Lust, Story, & Ehlinger, 2008). While financial difficulty has been linked to increased stress levels and poor mental health outcomes among post-secondary students (Richardson et al., 2017; Watson, Barber, & Dziurawiec, 2015), financial confidence is associated with students' positive emotional well-being (Adams, Meyers, & Beidas, 2016; Hyun, Quinn, Madon, & Lustig, 2006; Lederer, Autry, Day, & Oswalt, 2015; Walsemann et al., 2015).

**Relationships.** Particularly for young post-secondary students, the loss of frequent socialization with childhood friends has been linked to emotional distress, and can sometimes lead to decreased interest in forming new relationships (Oswald & Clark, 2003). Buote and colleagues (2007) refer to this emotional response to the loss of old friends as "friendsickness." In many cases, the weakening of these relationships results in the loss of an outlet where one can comfortably socialize and relieve stress. Losing this source of social support can be challenging, particularly for more introverted students who may be less comfortable attempting to form new friendships in a new environment. In addition to missing old friends, students may also struggle with distance from their parents and family home. In one study, students identified spending less time with parents as having a negative impact on their stress levels (Welle & Graf, 2011). Difficulty navigating life with roommates for the first time has also been identified as a source of stress (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005; Welle & Graf, 2011).

The link between relationships and students' stress extends beyond platonic friendships and into romantic relationships. While one study in the United States found that involvement in a committed relationship had a protective effect on students' well-being (Whitton, Weitbrecht, Kuryluk, & Bruner, 2013), a Canadian study found that students often sought help from campus counselling centres due to relationship concerns (Cairns et al., 2010).

## Measuring Distress

According to findings from the 2016 NCHA survey, the most prevalent diagnosed mental illnesses among Canadian post-secondary students were anxiety (18%) and depression (15%), with about one fifth of students reporting a lifetime diagnosis of depression (American College Health Association, 2016). These findings are consistent with previous research investigating clinical levels of mental distress among Canadian

post-secondary students (Holmes & Silvestri, 2016; Robinson et al., 2016), and are comparable to rates of past 12-month formal anxiety and depression diagnoses among students in the United States (22% and 18%, respectively; American College Health Association, 2017). It is noteworthy that the estimated prevalence of professional diagnoses for mental illnesses were often lower than the prevalence of self-reported symptoms of these disorders. For example, while less than 15% of students reported being diagnosed or treated for depression on the NCHA survey, nearly 45% reported feeling "so depressed it was difficult to function" within the past 12 months (American College Health Association, 2016). While it is difficult to draw definitive conclusions, we may consider that this apparent disparity between mental illnesses and their official diagnoses may be explained by the following: (a) students are not seeking professional help for their mental health problems; (b) the self-report instruments used are not sensitive or specific enough, or are otherwise invalid; (c) students are overestimating their symptoms and are not truly experiencing a clinical level of distress; or (d) students are experiencing substantial barriers to reaching out for help for mental health related challenges.

Suicidal thoughts and behaviours (e.g., self-injury) constitute the most severe forms of distress. In Canada, prevalence estimates are available for past 12-month self-injury (8.7%), serious consideration of suicide (13%), and suicide attempts (2.1%) among post-secondary students, though there is currently no national compilation of completed suicides among this population (American College Health Association, 2016). These estimates for self-injury are slightly higher than those reported in the United States literature, which report a prevalence ranging from 3% to 7% (Gollust, Eisenberg, & Golberstein, 2008; Taliaferro & Muehlenkamp, 2015), with males and females reporting different triggers.

Male students more often attributed academic competition, financial pressure, and workload to suicidal thoughts, whereas female students identified family pressure, heartbreak, and mental health challenges as the main contributors (Seeman, Reilly, & Fogler, 2017). In the same study, experiences of isolation, marginalization, and substance abuse predicted suicidal thoughts equally across sexes (Seeman et al., 2017). Estimates of suicidal thoughts among post-secondary students range widely in the literature. Across three samples of post-secondary students in the United States, self-reported lifetime prevalence of suicidal thoughts ranged from 5.8% to 36% (Gollust et al., 2008; Keyes et al., 2012; Seeman et al., 2017). Subpopulations considered to be at increased risk for suicidal thoughts and behaviours include members of the LGBTQ community, female students, and non-Caucasian students (Cramer, La Guardia, Bryson, & Morgan, 2017; Seeman et al., 2017; Smith et al., 2015; Taliaferro & Muehlenkamp, 2015). Perhaps even more concerning is the lack of help-seeking behaviours observed among post-secondary students experiencing suicidal thoughts. In a study of health-risk behaviours, surveying over 1,200 first-year undergraduate students in the United States, nearly half (44%) of individuals who experienced suicidal thoughts since the start of college indicated that they had not pursued treatment (Arria et al., 2011).

The question of whether or not the prevalence or degree of distress has worsened among students over the past few decades is frequently debated. For example, Gallagher's annual National Survey of College Counseling Centers in the United States appeared to show an increase in the prevalence of students seeking help for mental health problems between 2002 and 2014 (Gallagher, 2015). In the most recent edition of the survey, nearly 94% of campus counselling centre directors indicated that they felt there had been an increase in students arriving at counselling centres with serious psychological problems over the past few years (Gallagher, 2015). Additionally, the majority of respondents reported administrative challenges such as

the growing demand for services without an appropriate increase in resources (70%), balancing the varying demands for counsellor's services (70%), distributing the centre's workload fairly among staff (33%), and developing strategies for keeping the wait list down (30%), indicating a consistently heavy workload for college counselling centres (Gallagher, 2015). In contrast, a study conducted in the United States followed 3,400 campus counselling centre clients over a 10-year period and found that students' distress levels had not increased (Schwartz, 2006). However, an increase in the use of medication over time and a greater level of acceptance of medication use among students was observed. Though this study was bound to a single post-secondary campus, these findings reflect those observed at the national level among post-secondary students in the United States (Gallagher 2015). While it appears that prevalence estimates are increasing, it is difficult to determine whether more students are truly experiencing symptoms of distress than before, or whether improvements in the destigmatization of mental illnesses have led to increases in the number of students seeking help, creating an artificial increase in prevalence.

## Student Resilience

Whether or not stress devolves into distress (or mental illness) depends largely on a student's resilience, or their ability to withstand daily stressors and negotiate their environment. The literature revealed elements of student resilience spanning individual characteristics (e.g., Flynn & Chow, 2017), impact of family dynamics (e.g., Karatekin, 2018; Mattanah, Lopez, & Govern, 2011), methods of coping (e.g., Byrd & McKinney, 2012), and help-seeking attitudes and behaviours (e.g., Rosenthal & Wilson, 2008).

**Individual characteristics.** At the individual level, resilience is determined by three main factors: genetic vulnerability (e.g., family history of a mental illness), psychological vulnerability (e.g., self-esteem, social support, coping skills), and sociodemographic vulnerability (e.g., socioeconomic status; Zuckerman, 1999). It is important to note that an individual's ability to develop resilience may also be influenced by larger, structural, or systemic factors that are outside of the individual's control, including access to appropriate supports and resources. A resilient individual may able to effectively manage stress without experiencing a negative health outcome (i.e., mental illness), while a more vulnerable individual may not. Personal characteristics such as sense of self-efficacy, tenacity, hardiness, and optimism all contribute to a students' belief in their own ability to manage and work through stressful periods, and have been linked to better academic outcomes (Burris, Brechting, Salsman, & Carlson, 2009; Flynn & Chow, 2017; Hartley, 2011; Knowlden, Hackman, & Sharma, 2016).

Family dynamics have also been linked to students' resilience. A meta-analysis explored the relationship between parental attachment and students' adjustment to post-secondary life across 156 published studies, finding that attachment to one's parents was significantly related to better adjustment, both in terms of cultivating social relationships with others as well as individual growth (e.g., greater self-worth and sense of academic ability; Mattanah et al., 2011). Conversely, negative family dynamics have been linked to poorer adjustment and negative psychological well-being. Two studies found that adverse childhood experiences were predictive of declining mental health among students (Karatekin, 2018; Young, Harford, Kinder, & Savell, 2007), while a lack of warmth and encouragement of autonomy from parents was associated with symptoms of depression in first-year undergraduate students in Canada (Villatte et al., 2017). In fact, permissive parenting (characterized by over-responsiveness to a child's needs, enabling, and overindulgence)

was found to hinder students' ability to be independent, as well as leading to academic entitlement (Barton & Hirsch, 2016). Academic entitlement, or the belief that one is owed more in the academic setting than is deserved, has been associated with symptoms of depression and negative well-being (Barton & Hirsch, 2016).

**Coping.** The ability to cope is a major component of overall resilience. The use of healthy coping mechanisms can help students negotiate stressors encountered in the post-secondary setting. Coping mechanisms are the resources used to attempt to manage feelings of stress, and can be employed in both adaptive (positive) and maladaptive (negative) ways (Taylor & Stanton, 2007). One study found that students' abilities to use effective coping mechanisms had the largest influence on mental disorders and produced the greatest change in mental health outcomes (Byrd & McKinney, 2012).

Positive coping mechanisms are generally healthful behaviours, marked by "taking direct action or confronting emotional responses to a stressor" or problem (Taylor & Stanton, 2007, p. 378). These include seeking social support from friends or family, looking for constructive solutions to the issue (e.g., increasing the time spent studying), or seeking help from a mental health professional. While academic integration is a key component of students' successful adjustment to post-secondary life, social integration can be just as important, contributing to students' "interpersonal" resilience (Hartley, 2011). One study found that students who felt close to their peers were at decreased risk for symptoms of distress (Mason, Zaharakis, & Benotsch, 2014). Negative methods of coping are less constructive and are less likely to culminate in a resolution to the problem, often "marked by avoidance, such as withdrawal or denial" (Taylor & Stanton, 2007, p. 378). Methods of avoidance, such as binge drinking alcohol (Czyzewska & McKenzie, 2016; Edkins, Edgerton, & Roberts, 2017; Metzger et al., 2017; O'Hare, 2001) and the use of substances, including cannabis (Allen & Holder, 2014; Blavos et al., 2017), have often been cited as negative coping mechanisms used by students to temporarily "forget" about the daily stresses that come along with post-secondary life (Lanier, Nicholson, & Duncan, 2001).

**Help-seeking.** A 2008 study of first-year students in the United States showed that over three quarters of those who reported clinically significant levels of distress had not received counselling (Rosenthal & Wilson, 2008). In another study, 63% of post-secondary students surveyed at a mid-sized Canadian university reported that they had not sought help, despite experiencing a need for mental health care (Stewart et al., 2014). In a study of Canadian students' help-seeking preferences, factors included the cost of treatment, the healthcare provider's training and experience, information about where the treatment would take place, and the time of day during which appointments were scheduled (Stewart et al., 2014). Students have also identified a number of barriers to seeking help, including the associated stigma (Beatie, Stewart, & Walker, 2016; Eisenberg, Downs, Golberstein, & Zivin, 2009; Lannin, Vogel, Brenner, Abraham, & Heath, 2016; Levin, Krafft, & Levin, 2018; Salzer, Wick, & Rogers, 2008); concerns about confidentiality (Davies et al., 2000; Givens & Tjia, 2002); lack of time (Bilican, 2013; Czyz, Horwitz, Eisenberg, Kramer, & King, 2013; Davies et al., 2000; Stebleton, Soria, & Huesman, 2014; Yorgason, Linville, & Zitzman, 2008); not believing the problem warranted professional help (Arria et al., 2011; Bilican, 2013; Czyz et al., 2013; Davies et al., 2000; Salzer et al., 2008); uncertainty that professional help will be beneficial (Davies et al., 2000); as well as indicating a preference for relying on other sources of support, including family and friends (Bilican, 2013; Burlaka, Churakova, Aavik, Staller, & Delva, 2014; Cunningham et al., 2017), or managing the problem themselves (Bilican, 2013; Burlaka et al., 2014; Czyz et al., 2013; Davies et al., 2000; Levin et al., 2018).

Several studies have found a relationship between the severity of distress and the likelihood of seeking professional help (Arria et al., 2011; Beatie et al., 2016; Garcia-Williams et al., 2014; Rosenthal & Wilson, 2008; Sontag-Padilla et al., 2016; Yorgason et al., 2008). In fact, previous experience with, or exposure to, a mental illness has been linked to greater intentions to seek help (Beatie et al., 2016; Salzer et al., 2008). A greater awareness of the mental health services available to students on campus and a higher level of mental health literacy have each been linked to greater intentions to seek help (Levin et al., 2018; Stebleton et al., 2014). While awareness of available services does not necessarily lead to help-seeking behaviours, a lack of such knowledge has been shown to prevent help-seeking (Beatie et al., 2016).

Several predictors of students' help-seeking attitudes and behaviours have been reported in the literature. Across ethnicities, ages, and levels of study, female students have shown more positive attitudes toward help-seeking than males, as well as more positive help-seeking behaviours (Chang, 2007; Crosby & Bossley, 2012; Masuda & Boone, 2011; Yorgason et al., 2008). Conversely, male students have expressed a strong reluctance to seek help for mental health-related challenges, and report intense stigmatization associated with men's emotional health (Davies et al., 2000; Eisenberg et al., 2009; Rafal, Gatto, & DeBate, 2018). Several studies have indicated that older students have a greater likelihood of becoming a help-seeking relative to their younger classmates (Al-Krenawi, Graham, Al-Bedah, Kadri, & Sehwail, 2009; Bilican, 2013; Cankaya & Duman, 2010; Sontag-Padilla et al., 2016; Yorgason et al., 2008). Significant differences have also been observed between undergraduate and graduate students, with graduate students reporting higher mental health literacy, and more positive attitudes towards help-seeking (Rafal et al., 2018; Sontag-Padilla et al., 2016).

Differences in help-seeking behaviours have also been observed by area of study, with one article finding that students studying in the sciences, technology, engineering, and mathematics (STEM) fields presented with lower overall mental health literacy than their peers (Rafal et al., 2018). This is consistent with other studies, which have shown that students in prestigious streams of study often worry about confidentiality and anonymity as well as the effect help-seeking for mental health-related challenges may have on their future careers (Givens & Tjia, 2002). Finally, there are a number of subpopulations within the post-secondary student population that face unique help-seeking challenges, including Indigenous students (Hampton & Roy, 2002; Rawana, Sieukaran, Nguyen, & Pitawanakwat, 2015), medical students (Ey, Henning, & Shaw, 2000; Gaspersz, Frings-Dresen, & Sluiter, 2012; Givens & Tjia, 2002; Kaur & Martin, 2017; Rau, Plener, Kliemann, Fegert, & Allroggen, 2013; Worley, 2008), LGBTQ students (Oswalt, Evans, & Drott, 2016; Woodford, Howell, Silverschanz, & Yu, 2012), and current or past military service members (Bonar, Bohnert, Walters, Ganoczy, & Valenstein, 2015; Currier, McDermott, & Sims, 2016; McCaslin, Leach, Herbst, & Armstrong, 2013; Ness, Middleton, & Hildebrandt, 2015; Niv & Bennett, 2017; Pelts & Albright, 2015; Schonfeld et al., 2015; Williston & Roemer, 2017). Lower mental health literacy (Rafal et al., 2018) and increased perceived stigma (Al-Krenawi et al., 2009; Chang, 2007; Eisenberg et al., 2009; Kim & Zane, 2016; Masuda & Boone, 2011; Sontag-Padilla et al., 2016) have also been observed among students belonging to ethnic minorities.

## Programs and Interventions

A number of programs and interventions have been developed to improve students' mental health. Most Canadian post-secondary institutions have a range of supports in place for students covering both mental health promotion and mental illness prevention; however, counselling services are generally limited,

follow-up procedures are uncommon, and complete diagnostic assessments using standardized tools are rare (Heck et al., 2014; Jaworska, De Somma, Fonseka, Heck, & MacQueen, 2016). Conley, Durlak, and Dickson (2013) reviewed 83 prevention programs for post-secondary students and found that the most common interventions were cognitive behavioural techniques (34%) psychoeducational programs (21%), relaxation strategies (16%), meditation techniques (10%), and mindfulness training (8%). Skills-oriented interventions with supervised practice were the most effective, with mindfulness interventions and cognitive behavioural interventions producing the greatest change in mental health outcomes. It is important to note that the quality of the research and the interventions varied from study to study. However, this research emphasizes the importance of preventive interventions for post-secondary populations, with the caveat that interventions should be embedded in systematic evaluation strategies. Generally, the programs and interventions designed for post-secondary institutions fall into two categories: structural frameworks and approaches or discrete interventions.

**Structural frameworks and approaches.** In (2016), Jaworska, De Somma, Heck and MacQueen surveyed 286 publicly funded post-secondary institutions included on the Universities Canada and Colleges and Institutes Canada websites regarding their mental health policies (96% responded). Across institutions, comprehensive mental health policies were scarce, particularly those that included mental health research and formal evaluation. One year earlier, DiPlacito-DeRango (2016) had noted that policies in Canadian post-secondary institutions were underdeveloped, identifying this as one of the major barriers to improving student mental health. In addition, DiPlacito-DeRango (2016) identified the stigma surrounding mental health and limited opportunities for mental health-related professional development and training to be a weakness of current institutional infrastructures. In response to these gaps, De Somma and colleagues (2017) recommended the development of a national framework outlining best practice policies for institutions to adopt. DiPlacito-DeRango (2016) recommended assigning responsibility for the development of student mental health policy to a specific individual, as well as improving training and awareness activities for students, faculty, and staff, with the ultimate goal of weaving attention to student mental health into the fabric of post-secondary institutions at every level (in the classroom, institutionally, and nationally).

One existing structural framework is the American College Health Association's "Healthy Campus 2020," an evidence-based framework containing tools and resources to address the broad health needs of post-secondary students (Armstrong & Burcin, 2016). The tool identifies five characteristics of a healthy campus that promote physical and mental health, recognizing that health is determined by factors at multiple levels, including public policy, community, institutional, interpersonal, and intrapersonal factors. Chung and colleagues' (2011) chronic collaborative care model is another example. This model of care requires coordination between physical and mental health providers on campus to systematically and proactively screen all students approaching services for depressive symptoms, a practice recommended to promote help-seeking among students (Davidson & Beck, 2006). Another example is the Stepped Care model, implemented with success in Atlantic Canada (Cornish et al., 2017). This approach, ultimately aiming to integrate mental health interventions into the post-secondary environment, contains nine steps along a continuum of intensity, from walk-in consultations and watchful waiting (the least intensive) to case management and referral to an acute or tertiary care facility (the most intensive). Stepped care, with its emphasis on rapid access, flexible session length, and reduced emphasis on pre-treatment assessment, involves a major change in the way providers, patients, and trainees think about mental health counselling and services.

Another example is found at Simon Fraser University, where researchers have adapted a framework originally developed for the workplace (Guarding Minds @ Work) to assess the stressors and supports available to university students (Stanton et al., 2013). Using this framework, nearly 700 students were surveyed, inquiring about areas in perceived need of improvement. The most prominent area in need of better support was student work-life balance, reflected in issues of workload management and stress. Another important theme was the extent to which students felt part of a supportive campus community. Further research is needed to explore whether workplace policies and structures that support work-life balance could be adapted to post-secondary settings.

Finally, at a broad structural level, many Canadian post-secondary institutions have incorporated a fall reading week into their term calendars in order to improve academic performance and enhance students' mental health. Poole and colleagues (2017) examined the effects of the fall reading week on student well-being, finding that while the majority reported a positive experience, many reported increased perceived stress following the break, with a portion considering the fall break to be a negative experience. After the break, students' perceived stressors were more focused on academic demands: having to meet deadlines (69%), having projects due (69%), and having a hard week ahead (67%). This suggests that institutions may want to implement additional interventions to increase the benefits of the fall break, such as reducing excessive evaluation density immediately after the break.

**Discrete interventions.** Although the academic literature calls for comprehensive mental health strategies, the majority of the studies reported examined discrete interventions. While these can become part of a comprehensive strategy, little guidance is provided on how to incorporate best-practice approaches into system level or structural change and systematically monitor their effects (Fernandez et al., 2016). These discrete interventions range widely, including animal therapy (Bell, 2013; Delgado, Toukonen, & Wheeler, 2018; Dell et al., 2015; Muckle & Lasikiewicz, 2017), counselling and skills development (Bilodeau & Meissner, 2018), mindfulness (Bodenlos, Wells, Noonan, & Mayrsohn, 2015; Kerrigan et al., 2017), online programs, (Currie, McGrath, & Day, 2010; Day, McGrath, & Wojtowicz, 2013; Levin, Pistorello, Hayes, Seeley, & Levin, 2015), social media campaigns (Johnson, Yilmaz, & Najarian, 2017), peer health education (Ekore, Ajuwon, Abdulmalik, Omigbodun, & Bella-Awusah, 2016; Li et al., 2009; Rawana et al., 2015), physical activity programs (Adams, Moore, & Dye, 2007; Beck, Seeman, Verticchio, & Rice, 2015), changes to the physical campus environment (Windhorst & Williams, 2015, 2016), sleep education (Orzech & Salafsky, 2011), and suicide prevention (Kalchthaler, 2010; King et al., 2015; Veeser & Blakemore, 2006; Washburn & Mandrusiak, 2010). Several interventions have also been developed to target specific subgroups within the post-secondary student population, including online students (Armstrong & Burcin, 2016) and male students (Davies, Shen-Miller, & Isacco, 2010). In addition to one-off programs such as these, there are multi-faceted programs which aim to tackle multiple components of student resilience, including combating isolation, bolstering well-being, and creating a stronger sense of belonging on campus by offering a range of activities that appeal to a wide variety of students (Brewerton & Woolley, 2016; Rose, Godfrey, & Rose, 2015).

Though each of these interventions is developed in an effort to improve students' well-being and resilience, many lack effectiveness data and formal evaluation. Furthermore, conflicting results are often found in the literature regarding the effectiveness of many of these intervention methods. For example, Bergen-Cicio, Possemato, and Cheon (2013) note that the standard time commitment required for benefits to be observed as

a result of mindfulness practice is substantial (eight weeks of 2.5 hour sessions), a commitment well beyond what many students can manage. An additional study found that mindfulness meditation was not necessarily a positive experience for students with a history of trauma, addiction, mental illness, or self-harm (Burrows, 2017). Similarly, social media-based initiatives can be beneficial due to their wide reach, yet there is a lack of research about the effects of exposure to health-related messages via social media (Johnson et al., 2017).

Finally, though e-mental health solutions are becoming increasingly popular, students' willingness to explore these options remains unclear. One study found that, despite the vast majority (93%) of students in their sample ($n = 687$) reporting everyday use of the Internet for various reasons, only about half reported using the Internet to search for mental health-related information in their lifetime (Montagni et al., 2016). However, over three quarters of those who had sought mental health information on the Internet indicated that they did not trust the information they found, which may speak to students' attitudes towards the use of e-mental health solutions. In the same study, when students were asked whether they had frequented other e-mental health spaces, including discussion forums or online therapy support, the majority (88%) indicated that they had not (Montagni et al., 2016). Another study explored students' attitudes towards the use of e-mental health services to evaluate whether the gap in service use among student populations might be mitigated by e-solutions. Results showed that given no wait times for standard counselling, students would *not* use an e-mental health option, but their willingness to use an e-solution increased as wait times for standard counselling increased (Cunningham et al., 2017).

## CONCLUSION

This scoping review of the academic literature surrounding the mental health of post-secondary students revealed three overarching themes: (1) student stress and distress, (2) student resilience through effective coping and help-seeking behaviours, and (3) programs and interventions designed to improve post-secondary students' mental health. Students reported experiencing high levels of stress resulting in negative effects on their ability to succeed academically. Identified areas of stress went beyond the usual expected areas (e.g., academics), with students also identifying socio-environmental stressors within the campus setting, inter-personal stressors, and concern for the future following graduation. Anxiety and depression continue to be the most prevalent mental illnesses diagnosed among the post-secondary student population, accompanied by concerning prevalence estimates for self-reported suicidal ideation and self-injury.

Students' resilience was conceptualized as comprising individual characteristics (i.e., self-efficacy, optimism), the ability to cope, and help-seeking behaviours. It is important to note that an individual's ability to develop resilience may also be influenced by larger, structural or systemic factors that are outside of the individual's control, including access to appropriate supports and resources. Despite the substantial prevalence of poor mental health among post-secondary students, few reported the use of positive coping mechanisms, such as seeking formal help from a mental health professional, or informal support from family and friends. In fact, the literature revealed that successful integration into the campus social environment was a key predictor of students' well-being. Students identified a number of barriers to seeking help for mental health problems, expressing concerns about stigmatization and a lack of mental health literacy (i.e., not recognizing symptoms, or feeling as though the problem was not "serious enough" to warrant help-seeking). Students

also reported a strong preference for managing mental health problems on their own, only reaching out for professional help when and if the symptoms became serious.

Though many post-secondary institutions across Canada have mental health supports in place for students, there remain gaps in service delivery. Few institutions have developed comprehensive mental health strategies, with many reporting the use of discrete interventions. Furthermore, the majority of these discrete interventions have not been formally evaluated. Moving forward, the development of Canada's National Standard for the Psychological Health and Safety of Post-Secondary Students will provide institutions with the tools to develop comprehensive mental health strategies that are designed to meet their campus's unique needs.

This article has provided an extensive overview of the existing literature surrounding post-secondary students' mental health and well-being. To our knowledge, this is the only comprehensive, multi-disciplinary, and international scoping review of the literature in this area, providing a breadth of information for institutions seeking an overview of students' experiences with stress and distress as well as existing responses to the campus mental health crisis. Despite its strengths, there are some limitations to this research. Scoping reviews are designed to provide a broad overview of the state of research on a particular topic. As such, we have not conducted a critical appraisal of the quality of every article included in this review. The articles included in our review were restricted by the selection of English language documents, and are therefore largely from North America, the United Kingdom, and Australia, despite our attempts to conduct an international review of the literature. Additionally, because this review focused on the published academic literature, publication bias in the results is possible, and grey literature has been excluded.

Given the breadth of published data collected for the purposes of this review, the decision to exclude grey literature was made as a result of scope constraints. However, this exclusion has resulted in some gaps in the topics covered here. For example, though our search only produced a handful of articles that addressed the potential for e-mental health solutions among post-secondary student populations, digital options for health promotion and treatment are becoming increasingly popular. Unfortunately, as the use of e-mental health solutions remains fairly novel, few have had formal evaluations completed, and information on the efficacy and uptake of these services is therefore not frequently available in the published academic literature. The same can be said for many novel and potentially effective discrete interventions currently offered in post-secondary settings that were not captured in this review. Additionally, a review of the grey literature may provide a sense of the challenges and obstacles faced by some discrete interventions; this knowledge is arguably just as important as understanding why other interventions were successful. A review of the grey (unpublished) literature related to post-secondary mental health would be a valuable addition to the body of research currently surrounding post-secondary mental health and well-being and is highly recommended as an avenue for future research.

## REFERENCES

Adams, Meyers, S., & Beidas, R. (2016). The relationship between financial strain, perceived stress, psychological symptoms, and academic and social integration in undergraduate students. *Journal of American College Health*, *64*(5), 362–370. doi: 10.1080/07448481.2016.1154559

Adams, T., Moore, M., & Dye, J. (2007). The relationship between physical activity and mental health in a national sample of college females. *Women & Health*, *45*(1), 69–85. doi: 10.1300/J013v45n01_05

Al-Krenawi, A., Graham, J. R., Al-Bedah, E. A., Kadri, H. M., & Sehwail, M. A. (2009). Cross-national comparison of Middle Eastern university students: Help-seeking behaviors, attitudes toward helping professionals, and cultural beliefs about mental health problems. *Community Mental Health Journal*, *45*(1), 26–36. doi: 10.1007/s10597-008-9175-2

Allen, J., & Holder, M. D. (2014). Marijuana use and well-being in university students. *Journal of Happiness Studies*, *15*(2), 301–321. doi: 10.1007/s10902-013-9423-1

Amar, A. (2006). College women's experience of stalking: Mental health symptoms and changes in routines. *Archives of Psychiatric Nursing*, *20*(3), 108–116. doi: 10.1016/j.apnu.2005.10.003

Amar, A., & Gennaro, S. (2005). Dating violence in college women: Associated physical injury, healthcare usage, and mental health symptoms. *Nursing Research*, *54*(4), 235–242. doi: 10.1097/00006199-200507000-00005

American College Health Association. (2013). *American College Health Association - National College Health Assessment II: Canadian Reference Group Data Report Spring 2013*. Retrieved from http://www.acha-ncha.org

American College Health Association. (2016). *American College Health Association - National College Health Assessment II: Canadian Reference Group Data Report Spring 2016*. Retrieved from http://www.acha-ncha.org/

American College Health Association. (2017). *American College Health Association-National College Health Assessment II: Reference Group Executive Summary Fall 2017*. Retrieved from www.acha.org

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19–32. doi: 10.1080/1364557032000119616

Armstrong, S. N., & Burcin, M. M. (2016). Digital health education for the fully online college student: An exploratory study. *American Journal of Health Education*, *47*(6), 385–393. doi: 10.1080/19325037.2016.1219285

Arnett, J. J. (2000). Emerging Adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469–480. doi: 10.1037/0003-066X.55.5.469

Arria, A. M., Winick, E. R., Garnier-Dykstra, L. M., Vincent, K. B., Caldeira, K. M., Wilcox, H. C., & O'Grady, K. E. (2011). Help seeking and mental health service utilization among college students with a history of suicide ideation. *Psychiatric Services*, *62*(12), 1510–1513. doi: 10.1176/appi.ps.005562010

Barker, E. T., Howard, A. L., Villemaire-Krajden, R., & Galambos, N. L. (2018). The rise and fall of depressive symptoms and academic stress in two samples of university students. *Journal of Youth and Adolescence*, *47*(6), 1252–1266. doi: 10.1007/s10964-018-0822-9

Barton, A. L., & Hirsch, J. K. (2016). Permissive parenting and mental health in college students: Mediating effects of academic entitlement. *Journal of American College Health*, *64*(1), 1–8. doi: 10.1080/07448481.2015.1060597

Beatie, B. E., Stewart, D. W., & Walker, J. R. (2016). A moderator analysis of the relationship between mental health help-seeking attitudes and behaviours among young adults. *Canadian Journal of Counselling and Psychotherapy*, *50*(3), 290–314.

Beck, A. R., Seeman, S., Verticchio, H., & Rice, J. (2015). Yoga as a technique to reduce stress experienced by CSD graduate students. *Contemporary Issues in Communication Science & Disorders*, *42*, 1–15.

Bell, A. (2013). PAWS for a study break: Running an animal assisted therapy program at the Gerstein Science Information Centre. *Partnership: The Canadian Journal of Library and Information Practice and Research*, *8*(1), 1–14. doi: 10.21083/partnership.v8i1.2403

Bergen-Cico, D., Possemato, K., & Cheon, S. (2013). Examining the efficacy of a Brief Mindfulness-Based Stress Reduction (Brief MBSR) program on psychological health. *Journal of American College Health*, *61*(6), 348–360. doi: 10.1080/07448481.2013.813853

Bernhardsdottir, J., Vilhjalmsson, R., & Champion, J. D. (2013). Evaluation of a brief cognitive behavioral group therapy for psychological distress among female Icelandic university students. *Issues in Mental Health Nursing*, *34*(7), 497–504.

Bilican, F. I. (2013). Help-seeking attitudes and behaviors regarding mental health among Turkish college students. *International Journal of Mental Health*, *42*(2–3), 43–59. doi: 10.2753/IMH0020-7411420203

Bilodeau, C., & Meissner, J. (2018). The effects of a combined academic and personal counselling initiative for post-secondary student retention. *Canadian Journal of School Psychology*, *33*(1), 8–25. doi: 10.1177/0829573516644554

Bjorklund, K., Hakkanen-Nyholm, H., Huttunen, T., & Kunttu, K. (2010). Violence victimization among Finnish university students: Prevalence, symptoms and healthcare usage. *Social Science & Medicine*, *70*(9), 1416–1422. doi: 10.1016/j.socscimed.2009.12.015

Blanco, C., Okuda, M., Wright, C., Hasin, D. S., Grant, B. F., Liu, S. M., & Olfson, M. (2008). Mental health of college students and their non-college-attending peers: Results from the national epidemiologic study on alcohol and related conditions. *Archives of General Psychiatry*, *65*(12), 1429–1437. doi: 10.1001/archpsyc.65.12.1429

Blavos, A. A., Glassman, T. J., Sheu, J.-J., Thompson, A., DeNardo, F., & Diehr, A. J. (2017). Marijuana and college students: A critical review of the literature. *American Journal of Health Education*, *48*(3), 167–184. doi: 10.1080/19325037.2017.1292878

Bodenlos, J. S., Wells, S. Y., Noonan, M., & Mayrsohn, A. (2015). Facets of dispositional mindfulness and health among college students. *Journal of Alternative & Complementary Medicine*, *21*(10), 645–652. doi: 10.1089/acm.2014.0302

Bonar, E. E., Bohnert, K. M., Walters, H. M., Ganoczy, D., & Valenstein, M. (2015). Student and nonstudent national guard service members/veterans and their use of services for mental health symptoms. *Journal of American College Health*, *63*(7), 437–446. doi: 10.1080/07448481.2014.975718

Brewerton, A., & Woolley, B. (2016). Helping students to "study happy." *CILIP Update*, 28–30. Retrieved from http://www.cilip.org.uk/

Brook, C. A., & Willoughby, T. (2015). The social ties that bind: Social anxiety and academic achievement across the university years. *Journal of Youth and Adolescence*, *44*(5), 1139–1152. doi: 10.1007/s10964-015-0262-8

Buote, V. M., Pancer, S. M., Pratt, M. W., Adams, G., Birnie-Lefcovitch, S., Polivy, J., & Wintre, M. G. (2007). The importance of friends: Friendship and adjustment among 1st-year university students. *Journal of Adolescent Research*, *22*(6), 665–689. doi: 10.1177/0743558407306344

Burke, T. J., Ruppel, E. K., & Dinsmore, D. R. (2016). Moving away and reaching out: Young adults' relational maintenance and psychosocial well-being during the transition to college. *Journal of Family Communication*, *16*(2), 180–187. doi: 10.1080/15267431.2016.1146724

Burlaka, V., Churakova, I., Aavik, O. A., Staller, K. M., & Delva, V. (2014). Attitudes toward health-seeking behaviors of college students in Ukraine. *International Journal of Mental Health and Addiction*, *12*(5), 549–560.

Burris, J., Brechting, E., Salsman, J., & Carlson, C. (2009). Factors associated with the psychological well-being and distress of university students. *Journal of American College Health*, *57*(5), 536–544. doi: 10.3200/JACH.57.5.536-544

Burrows, L. (2017). "I feel proud we are moving forward": Safeguarding mindfulness for vulnerable student and teacher wellbeing in a community college. *Journal of Adult Protection*, *19*(1), 33–46.

Byrd, D. R., & McKinney, K. J. (2012). Individual, interpersonal, and institutional level factors associated with the mental health of college students. *Journal of American College Health*, *60*(3), 185–193. doi: 10.1080/07448481.2011.584334

Cairns, S. L., Massfeller, H. F., & Deeth, S. C. (2010). Why do postsecondary students seek counselling? *Canadian Journal of Counselling*, *44*(1), 34–50.

Cankaya, P., & Duman, Z. (2010). Evaluation of nursing students' attitudes towards seeking psychological help and factors affecting their attitudes. *Nurse Education Today*, *30*(8), 784–788. doi: 10.1016/j.nedt.2010.02.005

Chang, H. (2007). Psychological distress and help-seeking among Taiwanese college students: Role of gender and student status. *British Journal of Guidance & Counselling*, *35*(3), 347–355. doi: 10.1080/03069880701418789

Chung, H., Klein, M., Silverman, D., Corson-Rikert, J., Davidson, E., & Ellis, P. (2011). A pilot for improving depression care on college campuses: Results of the college breakthrough series-depression (CBS-D) project. *Journal of American College Health*, *59*(7), 628–639. doi: 10.1080/07448481.2010.528097

Conley, C. S., Durlak, J. A., & Dickson, D. A. (2013). An evaluative review of outcome research on universal mental health promotion and prevention programs for higher education students. *Journal of American College Health*, *61*(5), 286–301. doi: 10.1080/07448481.2013.802237

Cornish, P. A., Berry, G., Benton, S., Barros-Gomes, P., Johnson, D., Ginsburg, R., … Romano, P. A. (2017). Meeting the mental health needs of today's college student: Reinventing services through Stepped Care 2.0. *Special Issue: College Counseling Services*, *14*(4), 428–442.

Corona, R., Rodríguez, V., McDonald, S., Velazquez, E., Rodríguez, A., & Fuentes, V. (2017). Associations between cultural stressors, cultural values, and latina/o college students' mental health. *Journal of Youth & Adolescence*, *46*(1), 63–77. doi: 10.1007/s10964-016-0600-5

Cramer, R. J., La Guardia, A. C., Bryson, C., & Morgan, K. (2017). The intersection of nonsuicidal self-injury and suicide-related behavior: Patterns of elevated risk and implications for college mental health. *Journal of American College Health*, *65*(6), 363–371. doi: 10.1080/07448481.2017.1312416

Crompton, S. (2015). What's stressing the stressed? Main sources of stress among workers. Retrieved from Statistics Canada website: http://www.statcan.gc.ca/pub/11-008-x/2011002/article/11562-eng.htm

Crosby, J. W., & Bossley, N. (2012). The religiosity gap: Preferences for seeking help from religious advisors. *Mental Health, Religion & Culture*, *15*(2), 141–159. doi: 10.1080/13674676.2011.561485

Cunningham, C. E., Zipursky, R. B., Christensen, B. K., Bieling, P. J., Madsen, V., Rimas, H., … Munn, C. (2017). Modeling the mental health service utilization decisions of university undergraduates: A discrete choice conjoint experiment. *Journal of American College Health*, *65*(6), 389–399. doi: 10.1080/07448481.2017.1322090

Currie, C. L., Wild, T. C., Schopflocher, D. P., Laing, L., & Veugelers, P. (2012). Racial discrimination experienced by Aboriginal university students in Canada. *Canadian Journal of Psychiatry*, *57*(10), 617–625. doi: 10.1177/070674371205701006

Currie, S. L., McGrath, P. J., & Day, V. (2010). Development and usability of an online CBT program for symptoms of moderate depression, anxiety, and stress in post-secondary students. *Computers in Human Behavior*, *26*(6), 1419–1426. doi: 10.1016/j.chb.2010.04.020

Currier, J. M., McDermott, R. C., & Sims, B. M. (2016). Patterns of help-seeking in a national sample of student veterans: A matched control group investigation. *General Hospital Psychiatry*, *43*, 58–62. doi: 10.1016/j.genhosppsych.2016.08.004

Czyz, E., Horwitz, A., Eisenberg, D., Kramer, A., & King, C. (2013). Self-reported barriers to professional help seeking among college students at elevated risk for suicide. *Journal of American College Health*, *61*(7), 398–406. doi: 10.1080/07448481.2013.820731

Czyzewska, M., & McKenzie, J. A. (2016). Alcohol binge drinking in first-generation college students. *North American Journal of Psychology*, *18*(2), 345–358.

Davidson, B., & Beck, H. (2006). Using the survey of academic orientations to predict undergraduates' stress levels. *NACADA Journal*, *26*(2), 13–20.

Davies, J. A., Shen-Miller, D. S., & Isacco, A. (2010). The men's center approach to addressing the health crisis of college men. *Professional Psychology: Research and Practice*, *41*(4), 347–354. doi: 10.1037/a0020308

Davies, J., McCrae, B., Frank, J., Dochnahl, A., Pickering, T., Harrison, B., & Zakrzewski, M. (2000). Identifying male college students' perceived health needs, barriers to seeking help, and recommendations to help men adopt healthier lifestyles. *Journal of American College Health*, *48*(6), 259–267. doi: 10.1080/07448480009596267

Day, V., McGrath, P. J., & Wojtowicz, M. (2013). Internet-based guided self-help for university students with anxiety, depression and stress: A randomized controlled clinical trial. *Behaviour Research and Therapy*, *51*(7), 344–351. doi: 10.1016/j.brat.2013.03.003

De Somma, E., Heck, E., MacQueen, G. M., & Jaworska, N. (2017). Campus mental health policies across Canadian regions: Need for a national comprehensive strategy. *Canadian Psychology*, *58*(2), 161–167. doi: 10.1037/cap0000089

Deer, L. K., Gohn, K., & Kanaya, T. (2018). Anxiety and self-efficacy as sequential mediators in US college students' career preparation. *Education & Training*, *60*(2), 185–197.

Delgado, C., Toukonen, M., & Wheeler, C. (2018). Effect of canine play interventions as a stress reduction strategy in college students. *Nurse Educator*, *43*(3), 149–153. doi: 10.1097/NNE.0000000000000451

Dell, C. A., Chalmers, D., Gillett, J., Rohr, B., Nickel, C., Campbell, L., … Brydges, M. (2015). PAWSing student stress: A pilot evaluation study of the St. John Ambulance therapy dog program on three university campuses in Canada. *Canadian Journal of Counselling and Psychotherapy*, *49*(4), 332–359.

Dinh, K. T., Holmberg, M. D., Ho, I. K., & Haynes, M. C. (2013). The relationship of prejudicial attitudes to psychological, social, and physical well-being within a sample of college students in the United States. *Journal of Cultural Diversity*, *21*(2), 56–66.

DiPlacito-DeRango, M. L. (2016). Acknowledge the barriers to better the practices: Support for student mental health in higher education. *Canadian Journal for the Scholarship of Teaching and Learning*, *7*(2), 14. doi: 10.5206/cjsotl-rcacea.2016.2.2

Durand-Bush, N., McNeill, K., Harding, M., & Dobransky, J. (2015). Investigating stress, psychological well-being, mental health functioning, and self-regulation capacity among university undergraduate students: Is this population optimally functioning? *Canadian Journal of Counselling and Psychotherapy*, *49*(3), 253–274.

Dusselier, L., Dunn, B., Wang, Y., Shelley, M., & Whalen, D. (2005). Personal, health, academic, and environmental predictors of stress for residence hall students. *Journal of American College Health*, *54*(1), 15–24. doi: 10.3200/JACH.54.1.15-24

Edkins, T., Edgerton, J. D., & Roberts, L. W. (2017). Correlates of binge drinking in a sample of Canadian university students. *International Journal of Child, Youth & Family Studies*, *8*(1), 112–144. doi: 10.18357/ijcyfs81201716944

Eisenberg, D., Downs, M. F., Golberstein, E., & Zivin, K. (2009). Stigma and help seeking for mental health among college students. *Medical Care Research and Review*, *66*(5), 522–541. doi: 10.1177/1077558709335173

Ekore, R. I., Ajuwon, A. J., Abdulmalik, J. O., Omigbodun, O. O., & Bella-Awusah, T. T. (2016). Developing mental health peer counselling services for undergraduate students of a Nigerian university: A pilot study. *IFE Psychologia*, *24*(2), 246–258.

Ey, S., Henning, K. R., & Shaw, D. L. (2000). Attitudes and factors related to seeking mental health treatment among medical and dental students. *Journal of College Student Psychotherapy*, *14*(3), 23. doi: 10.1300/J035v14n03_05

Fernandez, A., Howse, E., Rubio-Valera, M., Thorncraft, K., Noone, J., Luu, X., … Llewellyn, G. (2016). Setting-based interventions to promote mental health at the university: A systematic review. *International Journal of Public Health*, *61*(7), 797–807. doi: 10.1007/s00038-016-0846-4

Flynn, D. M., & Chow, P. (2017). Self-efficacy, self-worth and stress. *Education*, *138*(1), 83–88.

Gallagher, R. P. (2015). *National Survey of College Counseling Centers 2014. Project Report.* Retrieved from http://d-scholarship.pitt.edu/28178/

Garcia-Williams, A. G., Moffitt, L., & Kaslow, N. J. (2014). Mental health and suicidal behavior among graduate students. *Academic Psychiatry*, *38*(5), 554–560. doi: 10.1007/s40596-014-0041-y

Gaspersz, R., Frings-Dresen, M. H. W., & Sluiter, J. K. (2012). Prevalence of common mental disorders among Dutch medical students and related use and need of mental health care: A cross-sectional study. *International Journal of Adolescent Medicine and Health*, *24*(2), 169–172. doi: 10.1515/ijamh.2012.025

Givens, J. L., & Tjia, J. (2002). Depressed medical students' use of mental health services and barriers to use. *Academic Medicine*, *77*(9), 918–921. doi: 10.1097/00001888-200209000-00024

Godin, I., Kittel, F., Coppieters, Y., & Siegrist, J. (2005). A prospective study of cumulative job stress in relation to mental health. *BMC Public Health*, *5*(67), 1–10. doi: 10.1186/1471-2458-5-67

Gollust, S. E., Eisenberg, D., & Golberstein, E. (2008). Prevalence and correlates of self-injury among university students. *Journal of American College Health*, *56*(5), 491–498. doi: 10.3200/JACH.56.5.491-498

Hampton, M., & Roy, J. (2002). Strategies for facilitating success of First Nations students. *The Canadian Journal of Higher Education*, *32*(3).

Hartley, M. T. (2011). Examining the relationships between resilience, mental health, and academic persistence in undergraduate college students. *Journal of American College Health*, *59*(7), 596–604. doi: 10.1080/07448481.2010.515632

Hawley, L. D., MacDonald, M. G., Wallace, E. H., Smith, J., Wummel, B., & Wren, P. A. (2016). Baseline assessment of campus-wide general health status and mental health: Opportunity for tailored suicide prevention and mental health awareness programming. *Journal of American College Health*, *64*(3), 174–183. doi: 10.1080/07448481.2015.1085059

Heck, E., Jaworska, N., DeSomma, E., Dhoopar, A. S., MacMaster, F. P., Dewey, D., & MacQueen, G. (2014). A survey of mental health services at post-secondary institutions in Alberta. *Canadian Journal of Psychiatry*, *59*(5), 250–258. doi: 10.1177/070674371405900504

Holmes, A., & Silvestri, R. (2016). Rates of mental illness and associated academic impacts in Ontario's college students. *Canadian Journal of School Psychology*, *31*(1), 27–46. doi: 10.1177/0829573515601396

Hyun, J., Quinn, B., Madon, T., & Lustig, S. (2006). Graduate student mental health: Needs assessment and utilization of counseling services. *Journal of College Student Development*, *47*(3), 247–266. doi: 10.1353/csd.2006.0030

Hyun, Quinn, B., Madon, T., & Lustig, S. (2007). Mental health need, awareness, and use of counseling services among international graduate students. *Journal of American College Health*, *56*(2), 109–118.

Iturbide, M., Raffaelli, M., & Carlo, G. (2009). Protective effects of ethnic identity on Mexican American college students' psychological well-being. *Hispanic Journal of Behavioral Sciences*, *31*(4), 536–552.

Jaworska, N., De Somma, E., Fonseka, B., Heck, E., & MacQueen, G. M. (2016). Mental health services for students at postsecondary institutions: A national survey. *Canadian Journal of Psychiatry*, *61*(12), 766–775. doi: 10.1177/0706743716640752

Johnson, J. M., Yilmaz, G., & Najarian, K. (2017). Optimizing the presentation of mental health information in social media: The effects of health testimonials and platform on source perceptions, message processing, and health outcomes. *Health Communication*, *32*(9), 1121–1132. doi: 10.1080/10410236.2016.1214218

Jordan, C. E., Combs, J. L., & Smith, G. T. (2014). An exploration of sexual victimization and academic performance among college women. *Trauma, Violence & Abuse*, *15*(3), 191–200. doi: 10.1177/1524838014520637

Kalchthaler, K. (2010). Wake-up call: Striking a balance between privacy rights and institutional liability in the student suicide crisis. *The Review of Litigation*, *29*(4), 895–924.

Karatekin, C. (2018). Adverse Childhood Experiences (ACEs), stress and mental health in college students. *Stress & Health: Journal of the International Society for the Investigation of Stress*, *34*(1), 36–45. doi: 10.1002/smi.2761

Kaur, J., & Martin, G. (2017). Non-suicidal self-injury in medical students. *Suicidology Online*, *8*(2), 37–46.

Kerrigan, D., Chau, V., King, M., Holman, E., Joffe, A., & Sibinga, E. (2017). There is no performance, there is just this moment: The role of mindfulness instruction in promoting health and well-being among students at a highly-ranked university in the United States. *Journal of Evidence-Based Complementary & Alternative Medicine*, *22*(4), 909–918. doi: 10.1177/2156587217719787

Ketchen, L., Gaddis, S., Heinze, J., Beck, K., & Eisenberg, D. (2015). Variations in Student Mental Health and Treatment Utilization Across US Colleges and Universities. *Journal of American College Health*, *63*(6), 388–396. doi: 10.1080/07448481.2015.1040411

Keyes, C. L. M., Eisenberg, D., Perry, G. S. ., Dube, S. R. ., Kroenke, K., Dhingra, S. S., … Dhingra 6, S. S. (2012). The relationship of level of positive mental health with current mental disorders in predicting suicidal behavior and academic impairment in college students. *Journal of American College Health*, *60*(2), 126–133. doi: 10.1080/07448481.2011.608393

Kim, J. E., & Zane, N. (2016). Help-seeking intentions among Asian American and White American students in psychological distress: Application of the health belief model. *Cultural Diversity and Ethnic Minority Psychology*, *22*(3), 311–321. doi: 10.1037/cdp0000056

King, C. A., Eisenberg, D., Zheng, K., Czyz, E., Kramer, A., Horwitz, A., & Chermack, S. (2015). Online suicide risk screening and intervention with college students: A pilot randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *83*(3), 630–636. doi:10.1037/a0038805

Knowlden, A. P., Hackman, C. L., & Sharma, M. (2016). Lifestyle and mental health correlates of psychological distress in college students. *Health Education Journal*, *75*(3), 370–382. doi: 10.1177/0017896915589421

Kruisselbrink Flatt, A. (2013). A suffering generation: Six factors contributing to the mental health crisis in North American higher education. *College Quarterly*, *16*(1), 17.

Lanier, C., Nicholson, T., & Duncan, D. (2001). Drug use and mental well being among a sample of undergraduate and graduate college students. *Journal of Drug Education*, *31*(3), 239–248. doi: 10.2190/R7T3-T266-JN9E-UX3W

Lannin, D. G., Vogel, D. L., Brenner, R. E., Abraham, W. T., & Heath, P. J. (2016). Does self-stigma reduce the probability of seeking mental health information? *Journal of Counseling Psychology*, *63*(3), 351–358. doi: 10.1037/cou0000108

Larson, M., Orr, M., & Warne, D. (2016). Using student health data to understand and promote academic success in higher education settings. *College Student Journal*, *50*(4), 590–602.

Lederer, A. M., Autry, D. M., Day, C. R. T., & Oswalt, S. B. (2015). The impact of work and volunteer hours on the health of undergraduate students. *Journal of American College Health*, *63*(6), 403–408. doi: 10.1080/07448481.2015.1015028

Lee, S.-Y., Wuertz, C., Rogers, R., & Chen, Y.-P. (2013). Stress and Sleep Disturbances in Female College Students. *American Journal of Health Behavior*, *37*(6), 851–858.

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: Advancing the methodology. *Implementation Science*, *5*(1), 69. doi: 10.1186/1748-5908-5-69

Levin, M. E., Krafft, J., & Levin, C. (2018). Does self-help increase rates of help seeking for student mental health problems by minimizing stigma as a barrier? *Journal of American College Health*, *66*(4), 302–309. doi: 10.1080/07448481.2018.1440580

Levin, M. E., Pistorello, J., Hayes, S. C., Seeley, J. R., & Levin, C. (2015). Feasibility of an acceptance and commitment therapy adjunctive web-based program for counseling centers. *Journal of Counseling Psychology*, *62*(3), 529–536. doi: 10.1037/cou0000083

Li, L., Chow, K., Griffiths, S., Zhang, L., Lam, J., & Kim, J. (2009). University-based peer health education in China: The Shantou experience. *Journal of American College Health*, *57*(5), 549–552. doi: 10.3200/JACH.57.5.549-552

Lindsay, W. G. (2010). Redman in the Ivory Tower: First Nations students and negative classroom environments in the university setting. *The Canadian Journal of Native Studies*, *30*(1), 143–154.

Locke, B. D., Bieschke, K. J., Castonguay, L. G., & Hayes, J. A. (2012). The center for collegiate mental health: Studying college student mental health through an innovative research infrastructure that brings science and practice together. *Harvard Review of Psychiatry*, *20*(4), 233–245. doi: 10.3109/10673229.2012.712837

Lovell, G. P., Nash, K., Sharman, R., & Lane, B. R. (2015). A cross-sectional investigation of depressive, anxiety, and stress symptoms and health-behavior participation in Australian university students. *Nursing & Health Sciences*, *17*(1), 134–142. doi: 10.1111/nhs.12147

Luca, S., Franklin, C., Yueqi, Y., Johnson, S., Brownson, C., De Luca, S. M., … Brownson, C. (2016). The relationship between suicide ideation, behavioral health, and college academic performance. *Community Mental Health Journal*, *52*(5), 534–540. doi: 10.1007/s10597-016-9987-4

Mason, M. J., Zaharakis, N., & Benotsch, E. G. (2014). Social networks, substance use, and mental health in college students. *Journal of American College Health*, *62*(7), 470–477. doi: 10.1080/07448481.2014.923428

Masuda, A., & Boone, M. S. (2011). Mental health stigma, self-concealment, and help-seeking attitudes among Asian American and European American college students with no help-seeking experience. *International Journal for the Advancement of Counselling*, *33*(4), 266–279. doi: 10.1007/s10447-011-9129-1

Mattanah, J. F., Lopez, F. G., & Govern, J. M. (2011). The contributions of parental attachment bonds to college student development and adjustment: A meta-analytic review. *Journal of Counseling Psychology*, *58*(4), 565–596. doi: 10.1037/a0024635

McBeath, M., Drysdale, M. T. B., & Bohn, N. (2018). Work-integrated learning and the importance of peer support and sense of belonging. *Education & Training*, *60*(1), 39–53. doi: 10.1108/ET-05-2017-0070

McCaslin, S. E., Leach, B., Herbst, E., & Armstrong, K. (2013). Overcoming barriers to care for returning veterans: Expanding services to college campuses. *Journal of Rehabilitation Research and Development*, *50*(8), 7–14. doi: 10.1682/JRRD.2013.09.0204

McFadden, D. L. H. (2016). Health and academic success: A look at the challenges of first-generation community college students. *Journal of the American Association of Nurse Practitioners*, *28*(4), 227–232. doi: 10.1002/2327-6924.12345

Metzger, I. W., Blevins, C., Calhoun, C. D., Ritchwood, T. D., Gilmore, A. K., Stewart, R., & Bountress, K. E. (2017). An examination of the impact of maladaptive coping on the association between stressor type and alcohol use in college. *Journal of American College Health*, *65*(8), 534–541. doi: 10.1080/07448481.2017.1351445

Monk, E. (2004). Student mental health: The case studies. *Counselling Psychology Quarterly*, *17*(4), 395–412. doi: 10.1080/09515070412331331200

Montagni, I., Parizot, I., Horgan, A., Gonzalez-Caballero, J.-L., Almenara-Barrios, J., Lagares-Franco, C., … Amaddeo, F. (2016). Spanish students' use of the Internet for mental health information and support seeking. *Health Informatics Journal*, *22*(2), 333–354. doi: 10.1177/1460458214556908

Muckle, J., & Lasikiewicz, N. (2017). An exploration of the benefits of animal-assisted activities in undergraduate students in Singapore. *Asian Journal of Social Psychology*, *20*(2), 75–84. doi: 10.1111/ajsp.12166

Nakashima, K., Isobe, C., & Ura, M. (2013). How does higher in-group social value lead to positive mental health? An integrated model of in-group identification and support. *Asian Journal of Social Psychology*, *16*(4), 271–278.

Nelson, M., Lust, K., Story, M., & Ehlinger, E. (2008). Credit card debt, stress and key health risk behaviors among college students. *American Journal of Health Promotion*, *22*(6), 400–407. doi: 10.4278/ajhp.22.6.400

Ness, B. M., Middleton, M. J., & Hildebrandt, M. J. (2015). Examining the effects of self-reported posttraumatic stress disorder symptoms and positive relations with others on self-regulated learning for student service members/ veterans. *Journal of American College Health*, *63*(7), 448–458. doi: 10.1080/07448481.2014.975719

Niv, N., & Bennett, L. (2017). Veterans' mental health in higher education settings: Services and clinician education needs. *Psychiatric Services*, *68*(6), 636–639. doi: 10.1176/appi.ps.201600065

O'Hare, T. (2001). Stress and drinking context in college first offenders. *Journal of Alcohol & Drug Education*, *47*(1), 4–18.

O'Keeffe, P. (2013). A sense of belonging: Improving student retention. *College Student Journal*, *47*(4), 605–614.

Offstein, E. H., Larson, M. B., Mcneill, A. L., & Mwale, H. M. (2004). Are we doing enough for today's graduate student? *International Journal of Education Management*, *18*(7), 396–407. doi:10.1108/09513540410563103

Orzech, K., & Salafsky, D. (2011). The state of sleep among college students at a large public university. *Journal of American College Health*, *59*(7), 612–619. doi: 10.1080/07448481.2010.520051

Oswald, D. L., & Clark, E. M. (2003). Best friends forever?: High school best friendships and the transition to college. *Personal Relationships*, *10*(2), 187–196. doi: 10.1111/1475-6811.00045

Oswalt, S. B., Evans, S., & Drott, A. (2016). Beyond alphabet soup: Helping college health professionals understand sexual fluidity. *Journal of American College Health*, *64*(6), 502–508. doi: 10.1080/07448481.2016.1170688

Paul, L. A., Walsh, K., Mccauley, J. L., Ruggiero, K. J., Resnick, H. S., & Kilpatrick, D. G. (2013). College women's experiences with rape disclosure: A national study. *Violence Against Women*, *19*(4), 486–502.

Pelts, M. D., & Albright, D. L. (2015). An exploratory study of student service members/veterans' mental health characteristics by sexual orientation. *Journal of American College Health*, *63*(7), 508–512. doi: 10.1080/07448481.2014.947992

Pillay, Y. (2005). Racial identity as a predictor of the psychological health of African American students at a predominantly white university. *Journal of Black Psychology*, *31*(1), 46–66.

Poole, H., Khan, A., & Agnew, M. (2017). One week, many ripples: Measuring the impacts of the fall reading week on student stress. *Collected Essays on Learning and Teaching*, *10*, 163–171. doi: 10.22329/celt.v10i0.4757

Próspero, M. (2009). Sex-symmetric effects of coercive behaviors on mental health?: Not exactly. *Journal of Interpersonal Violence*, *24*(1), 128–146.

Próspero, M., & Kim, M. (2009). Mutual partner violence: Mental health symptoms among female and male victims in four racial/ethnic groups. *Journal of Interpersonal Violence*, *24*(12), 2039–2056. doi: 10.1177/0886260508327705

Rafal, G., Gatto, A., & DeBate, R. (2018). Mental health literacy, stigma, and help-seeking behaviors among male college students. *Journal of American College Health*, *66*(4), 284–291. doi: 10.1080/07448481.2018.1434780

Rau, T., Plener, P., Kliemann, A., Fegert, J. M., & Allroggen, M. (2013). Suicidality among medical students: A practical guide for staff members in medical schools. *GMS Zeitschrift Fur Medizinische Ausbildung*, *30*(4), 48.

Rawana, J. S., Sieukaran, D. D., Nguyen, H. T., & Pitawanakwat, R. (2015). Development and Evaluation of a Peer Mentorship Program for Aboriginal University Students. *Canadian Journal of Education*, *38*(2), 1–34. doi: 10.2307/canajeducrevucan.38.2.08

Richardson, T., Elliott, P., Roberts, R., & Jansen, M. (2017). A longitudinal study of financial difficulties and mental health in a national sample of British undergraduate students. *Community Mental Health Journal*, *53*(3), 344–352. doi: 10.1007/s10597-016-0052-0

Rickwood, D., George, A., Rhian, P., & Mikhailovich, K. (2011). Harmful alcohol use on campus: Impact on young people at university. *Youth Studies Australia*, *30*(1), 34–40.

Ridner, S. L., Newton, K. S., Staten, R. R., Crawford, T. N., & Hall, L. A. (2016). Predictors of well-being among college students. *Journal of American College Health*, *64*(2), 116–124. doi: 10.1080/07448481.2015.1085057

Robertson, L. H., Holleran, K., & Samuels, M. (2015). Tailoring university counselling services to Aboriginal and international students: Lessons from native and international student centres at a Canadian university. *The Canadian Journal of Higher Education*, *45*(1), 122–135.

Robinson, A. M., Jubenville, T. M., Renny, K., & Cairns, S. L. (2016). Academic and mental health needs of students on a Canadian campus. *Canadian Journal of Counselling and Psychotherapy*, *50*(2), 108–123.

Rose, C., Godfrey, K., & Rose, K. (2015). Supporting student wellness: De-stressing initiatives at Memorial University libraries. *Partnership: The Canadian Journal of Library and Information Practice and Research*, *10*(2), 1–21. doi: 10.21083/partnership.v10i2.3564

Rosenthal, B., & Wilson, W. C. (2008). Mental health services: Use and disparity among diverse college students. *Journal of American College Health*, *57*(1), 61–67. doi: 10.3200/JACH.57.1.61-68

Ruckert, H.-W. (2015). Students' mental health and psychological counselling in Europe. *Mental Health and Prevention*, *3*(1–2), 34–40. doi: 10.1016/j.mhp.2015.04.006

Ruthig, J., Haynes, T., Stupnisky, R., & Perry, R. (2009). Perceived academic control: Mediating the effects of optimism and social support on college students' psychological health. *Social Psychology of Education*, *12*(2), 233–249. doi: 10.1007/s11218-008-9079-6

Ruzek, N. A., Nguyen, D. Q., & Herzog, D. C. (2011). Acculturation, enculturation, psychological distress and help-seeking preferences among Asian American college students. *Asian American Journal of Psychology*, *2*(3), 181–196.

Salzer, M., Wick, L., & Rogers, J. (2008). Familiarity with and use of accommodations and supports among post-secondary students with mental illnesses. *Psychiatric Services*, *59*(4), 370–375. doi: 10.1176/ps.2008.59.4.370

Schonfeld, L., Braue, L. A., Stire, S., Gum, A. M., Cross, B. L., & Brown, L. M. (2015). Behavioral health and adjustment to college life for student service members/veterans. *Journal of American College Health*, *63*(7), 428–436. doi: 10.1080/07448481.2014.963106

Schwartz, A. J. (2006). Are college students more disturbed today? Stability in the acuity and qualitative character of psychopathology of college counseling center clients: 1992-1993 through 2001-2002. *Journal of American College Health*, *54*(6), 327–337. doi: 10.3200/JACH.54.6.327-337

Seeman, N., Reilly, D. K., & Fogler, S. (2017). Suicide risk factors in U.S. college students: Perceptions differ in men and women. *Suicidology Online*, *8*(2), 20–26.

Smith, S. S., Smith Carter, J., Karczewski, S., Pivarunas, B., Suffoletto, S., & Munin, A. (2015). Mediating effects of stress, weight-related issues, and depression on suicidality in college students. *Journal of American College Health*, *63*(1), 1–12. doi: 10.1080/07448481.2014.960420

Sontag-Padilla, L., Woodbridge, M. W., Mendelsohn, J., D'Amico, E. J., Osilla, K. C., Jaycox, L. H., … Stein, B. D. (2016). Factors affecting mental health service utilization among California public college and university students. *Psychiatric Services*, *67*(8), 890–897. doi: 10.1176/appi.ps.201500307

Stallman, H. M. (2008). Prevalence of psychological distress in university students: Implications for service delivery. *Australian Family Physician*, *37*(8), 673–677.

Stanton, A., Chernenko, V., Dhaliwal, R., Gilbert, M., Goldner, E. M., Harrison, C., … Mroz, M. (2013). Building healthy campus communities: The adaptation of a workplace tool to understand better student wellbeing within higher education settings. *Education & Health*, *31*(3), 84–90.

Stebleton, M. J., Soria, K. M., & Huesman, R. L. J. (2014). First-generation students' sense of belonging, mental health, and use of counseling services at public research universities. *Journal of College Counseling*, *17*(1), 6–20. doi: 10.1002/j.2161-1882.2014.00044.x

Stewart-Brown, S., Evans, J., Patterson, J., Petersen, S., Doll, H., Balding, J., & Regis, D. (2000). The health of students in institutes of higher education: an important and neglected public health problem? *Journal of Public Health Medicine*, *22*(4), 492–499.

Stewart, D. W., Walker, J. R., Beatie, B., Reynolds, K. A., Hahlweg, K., Leonhart, M., & Tulloch, A. (2014). Postsecondary students' information needs and pathways for help with stress, anxiety, and depression. *Canadian Journal of Counselling and Psychotherapy*, *48*(3), 356–374.

Storrie, K., Ahern, K., & Tuckett, A. (2010). A systematic review: Students with mental health problems – a growing problem. *International Journal of Nursing Practice*, *16*(1), 1–6. doi: 10.1111/j.1440-172X.2009.01813.x

Taliaferro, L. A., & Muehlenkamp, J. J. (2015). Risk factors associated with self-injurious behavior among a national sample of undergraduate college students. *Journal of American College Health*, *63*(1), 40–48. doi: 10.1080/07448481.2014.953166

Taylor, S. E., & Stanton, A. L. (2007). Coping resources, coping processes, and mental health. *Annual Review of Clinical Psychology*, *3*(1), 377–401.

Topham, P., & Moller, N. (2011). New students' psychological well-being and its relation to first year academic performance in a UK university. *Counselling & Psychotherapy Research*, *11*(3), 196–203. doi: 10.1080/14733145.2010.519043

Tosevski, D., & Milovancevic, M. (2010). Personality and psychopathology of university students. *Current Opinion in Psychiatry*, *23*(1), 48–52. doi: 10.1097/YCO.0b013e328333d625

Tremblay, P. F., Harris, R., Berman, H., MacQuarrie, B., Hutchinson, G. E., Smith, M. A., … Dearlove, K. (2008). Negative social experiences of university and college students. *The Canadian Journal of Higher Education*, *38*(3), 57–75.

Valerio, T. D., Kim, M. J., & Sexton-Radek, K. (2016). Association of stress, general health, and alcohol use with poor sleep quality among U.S. college students. *American Journal of Health Education*, *47*(1), 17–23. doi: 10.1080/19325037.2015.1111173

Van Laethem, M., Beckers, D. G., Dijksterhuis, A., & Geurts, S. A. (2017). Stress, fatigue, and sleep quality leading up to and following a stressful life event. *Stress & Health: Journal of the International Society for the Investigation of Stress*, *33*(4), 459–469. doi: 10.1002/smi.2730

Veeser, P. I., & Blakemore, C. W. (2006). Student assistance program: A new approach for student success in addressing behavioral health and life events. *Journal of American College Health*, *54*(6), 377–381. doi: 10.3200/JACH.54.6.377-381

Vidourek, R. A. (2017). Emotional abuse: Correlates to abuse among college students. *Journal of Aggression, Maltreatment & Trauma*, *26*(7), 792–803. doi: 10.1080/10926771.2017.1308980

Villatte, A., Marcotte, D., & Potvin, A. (2017). Correlates of depression in first-year college students. *The Canadian Journal of Higher Education*, *47*(1), 114–136.

Walsemann, K. M., Gee, G. C., & Gentile, D. (2015). Sick of our loans: Student borrowing and the mental health of young adults in the United States. *Social Science & Medicine*, *124*, 85–93. doi: 10.1016/j.socscimed.2014.11.027

Washburn, C. A., & Mandrusiak, M. (2010). Campus suicide prevention and intervention: Putting best practice policy into action. *The Canadian Journal of Higher Education*, *40*(1), 101–119.

Watson, S., Barber, B., & Dziurawiec, S. (2015). The role of economizing and financial strain in Australian university students' psychological well-being. *Journal of Family and Economic Issues*, *36*(3), 421–433. doi: 10.1007/s10834-014-9404-5

Welle, P. D., & Graf, H. M. (2011). Effective lifestyle habits and coping strategies for stress tolerance among college students. *American Journal of Health Education*, *42*(2), 96–105. doi: 10.1080/19325037.2011.10599177

Whitton, S. W., Weitbrecht, E. M., Kuryluk, A. D., & Bruner, M. R. (2013). Committed dating relationships and mental health among college students. *Journal of American College Health*, *61*(3), 176–183. doi: 10.1080/07448481.2013.773903

Williston, S. K., & Roemer, L. (2017). Predictors of well-being in the lives of student service members and veterans. *Journal of American College Health*, *65*(6), 404–412. doi: 10.1080/07448481.2017.1341891

Windhorst, E., & Williams, A. (2015). "It's like a different world": Natural places, post-secondary students, and mental health. *Health and Place*, *34*, 241–250. doi: 10.1016/j.healthplace.2015.06.002

Windhorst, E., & Williams, A. (2016). Bleeding at the roots: Post-secondary student mental health and nature affiliation. *Canadian Geographer*, *60*(2), 232. doi: 10.1111/cag.12273

Woodford, M. R., Howell, M. L., Silverschanz, P., & Yu, L. (2012). "That's So Gay!": Examining the covariates of hearing this expression among gay, lesbian, and bisexual college students. *Journal of American College Health*, *60*(6), 429–434. doi: 10.1080/07448481.2012.673519

Worley, L. L. M. (2008). Our fallen peers: A mandate for change. *Academic Psychiatry*, *32*(1), 8–12.

Wyatt, T., & Oswalt, S. B. (2013). Comparing mental health issues among undergraduate and graduate students. *American Journal of Health Education*, *44*(2), 96–107. doi: 10.1080/19325037.2013.764248

Yoon, E., Funk, R., & Kropf, N. (2010). Sexual harassment experiences and their psychological correlates among a diverse sample of college women. *Affilia: Journal of Women & Social Work*, *25*(1), 8–18. doi: 10.1177/0886109909354979

Yorgason, J. B., Linville, D., & Zitzman, B. (2008). Mental health among college students: Do those who need services know about and use them? *Journal of American College Health*, *57*(2), 173–181. doi: 10.3200/JACH.57.2.173-182

Young, M., Harford, K., Kinder, B., & Savell, J. (2007). The relationship between childhood sexual abuse and adult mental health among undergraduates: Victim gender doesn't matter. *Journal of Interpersonal Violence*, *22*(10), 1315–1331. doi: 10.1177/0886260507304552

Zuckerman, M. (1999). *Vulnerability to psychopathology: A biosocial model*. Washington, DC: American Psychological Association.