

Review

Institutional Factors Affecting Postsecondary Student Mental Wellbeing: A Scoping Review of the Canadian Literature

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Abstract: There have been increased calls to address the growing mental health concerns of postsecondary students in Canada. Health promotion focuses on prevention and is needed as part of a comprehensive approach to student mental health support, with an emphasis on not just the individual but also the sociocultural environment of postsecondary institutions. The aim was to conduct a scoping review of the literature pertaining to the associations between postsecondary institutional factors and student wellbeing. The review included a comprehensive search strategy, relevance screening and confirmation, and data charting. Overall, 33 relevant studies were identified. Major findings provide evidence that institutional attitudes, institutional (in)action, perceived campus safety, and campus climate are associated with mental wellbeing, suggesting that campus-wide interventions can benefit from continued monitoring and targeting these measures among student populations. Due to the large variability in reporting and measurement of outcomes, the development of standardized measures for measuring institutional-level factors are needed. Furthermore, institutional participation and scaling up established population-level assessments in Canada that can help systematically collect, evaluate, and compare findings across institutions and detect changes in relevant mental health outcomes through time.



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1. Introduction

The socioecological model of health promotion has been applied as a framework to identify and map the several levels of influence that impact student wellbeing [1,2], and it posits that a combination of individual, interpersonal, institutional, community, and policy-level factors interact with one another to determine health outcomes [3]. However, student mental health interventions have traditionally focused on the individual level, and only recently has thinking shifted toward emphasizing upstream, preventive approaches in campus communities [4]. Health promotion encourages a proactive approach that moves beyond individual behaviors to address a range of social and environmental determinants at various levels of the socioecological model [5]. As such, the wellbeing and mental health of populations do not fall exclusively under the purview of the health sector, but must engage all disciplines acting in favor of health, equity, and sustainable wellbeing [5].

The healthy settings approach of postsecondary institutions has its roots in the socioecological approach advocated in the 1986 Ottawa Charter of Health Promotion, the 1996 Conference on Health Promoting Universities, and the early promotion and application of the Healthy Universities model in the mid-1990s in the United Kingdom [6–9]. The Healthy Universities approach to institutional health promotion has since been developed and adapted for use in other regions worldwide [9]. Reflecting the growing recognition of institutional and systems-wide health promotion, these frameworks were later refined by

the World Health Organization, the Edmonton Charter for Health Promoting Universities, and more recently, the Okanagan Charter [5,10,11]. The Okanagan Charter was developed in 2015 and calls on higher education institutions to embed health into all aspects of their operations and lead health promotion and collaboration globally [5]. Other approaches have emerged in line with the goal of institutional health promotion as outlined in the Okanagan Charter [12], including some focused specifically on mental health promotion in North America, including the Mental Health Framework from the Canadian Association of College & University Student Services [13], and the National Standard for Mental Health and Wellbeing for Postsecondary Students [14].

In Canada, postsecondary students seem to show increasing prevalence of mental health concerns such as stress, distress, anxiety, mental illness diagnoses, and help-seeking for mental health problems [15,16]. These negative outcomes have been exacerbated by the COVID-19 pandemic [17,18], with many students in 2020–2021 reporting concerns related to anxiety, social isolation, lack of in-person connections with peers, challenges with motivation, and financial distress [16]. The COVID-19 pandemic also triggered many concerns related to finances, and long-term impacts on education, learning, and career prospects among university students globally [19–21]. Similarly, a cohort study out of Canada showed more frequent reporting of symptoms related to depression, anxiety, insomnia, and self-harm among students during the COVID-19 pandemic [22], suggesting current strategies need to be revisited. Should these trends continue, individual-focused interventions may become increasingly impractical, and upstream efforts focusing on institutional and community factors to promote campus mental health may be needed.

There is some literature exploring institutional and community factors influencing wellbeing among postsecondary students in Canada [23–25]; however, no study has been conducted to date to collate available evidence of institutional- and community-level influences on student wellbeing in Canadian postsecondary institutions. Therefore, there is a need to better understand these factors to provide insights into how to improve campus-wide strategies that minimize negative mental health outcomes and promote student wellbeing.

The objective of this study was to conduct a scoping review of the literature pertaining to the associations between postsecondary institutional factors and student wellbeing. The results from this review can be used to inform priority areas for improving mental health among postsecondary students, guide future research in this area, and identify areas for future institutional interventions. The focus on Canada's postsecondary student population will further elucidate the challenges and solutions that are applicable to the Canadian context.

2. Materials and Methods

2.1. Review Approach

This review was conducted and reported using the standard scoping review methodology, which uses structured, transparent, and robust procedures to identify, assess, and map all concepts on a topic and identify knowledge gaps [26,27]. The review question was: "What are the institutional and community risk and protective factors associated with mental health among postsecondary students attending colleges and universities in Canada?" The review protocol was developed prior to the conducting of the study and is available in the Supplementary Materials. We followed PRISMA-ScR guidelines, and the reporting checklist can be accessed in the Supplementary Materials.

This review borrowed from the socioecological model for health promotion in developing the review question and to contextualize the levels of influence on student wellbeing [3,28–31]. The model was used by members of the research team to aid study selection rather than suggesting identified variables of interest discretely fit into one level of influence.

2.2. Inclusion and Exclusion Criteria

The population and setting of interest were part- and full-time postsecondary students of any age attending a Canadian university or college. Studies were limited to Canada to ensure the applicability of outcomes to the Canadian educational context.

Studies investigating relationships between institutional or community risk (e.g., campus climate, attitudes toward the institution) or protective factors (e.g., institutional actions, campus accommodations) and mental health outcomes were included. These factors were evaluated based on identification by the study authors within each included study and two members of review team (AT and JS). The outcome of interest was any mental health outcome (e.g., flourishing, languishing, life satisfaction, depressive symptoms).

Published English- or French-language primary research studies from Canada between January 2013 and January 2023 were eligible for inclusion. We narrowed the timeframe of inclusion to the last 10 years to make the findings relevant to present issues and solutions. Only observational studies examining associations between the exposures and outcome of interest were included. Any experimental designs, qualitative studies, commentaries, and secondary research were excluded. In addition to peer-reviewed journal articles, selected grey literature such as theses and conference proceedings were selected for inclusion based on recommendations outlined in the Cochrane Handbook for Systematic Reviews of Interventions [32].

2.3. Search Strategy

A comprehensive search strategy was developed using a combination of pretested search terms implemented in the following bibliographic databases: EBSCOhost, PubMed, PsycINFO, Web of Science, EMBASE, and ProQuest Dissertations and Theses. All database searches were completed on 6 February 2023. A search verification strategy was also employed to ensure no relevant articles were missed, which included handsearching the reference lists of six selected relevant articles.

Search categories consisted of the population of interest (e.g., student), setting (e.g., campus, university), and topic of interest (e.g., wellbeing, mental health, mental illness, mental disorder). Detailed information on the search algorithm and parameters used for each database are provided in the Supplementary Materials.

2.4. Relevance Screening, Data Characterization, and Charting

Article titles and abstracts were assessed for relevance by two independent reviewers using a structured screening form. Full texts of relevant references were obtained and confirmed for relevance, and study characteristics were extracted using a second structured characterization form. This form captured general characteristics (e.g., year published, country), details on study design, methodology, mode of data collection, participant recruitment, study population, and sample size. Screening was completed by two independent reviewers (AT and JS), and any conflicts that arose were resolved through discussion. Data charting was completed by one reviewer (AT) and revised by the second reviewer (JS).

2.5. Review Management

All identified references were uploaded to the reference management software Mendeley (Elsevier Inc., New York, NY, USA) and de-duplicated before being imported to DistillerSR (Evidence Partners, Ottawa, Canada) where relevance screening, confirmation, and data characterization were conducted. The screening, characterization, and charting tools underwent minor changes after discussion with the research team and pretesting on a small set of references to ensure consistency in the interpretation of questions. All steps of the review process (i.e., relevance screening, characterization, and charting) were conducted using DistillerSR (Evidence Partners, Ottawa, ON, Canada). As is consistent with scoping review guidelines, no methodological quality assessments were conducted [27]. Copies of all review forms are provided in the Supplementary Materials.

3. Results

3.1. Study Characteristics

Overall, 34 articles were included in this review, 33 of which presented unique research studies. Most studies used a cross-sectional design ($n = 27$), followed by longitudinal ($n = 5$), and the remaining were mixed methods ($n = 2$). Most studies focused on one province only ($n = 25$), a few examined postsecondary students at the national level ($n = 6$), and two studies investigated mental health in multiple provinces. Regarding participants, all studies used self-report measures ($n = 34$), while most studies used web-based survey methods ($n = 26$) and reported their study population recruitment strategy ($n = 22$). A detailed summary of study characteristics can be found in the Supplementary Materials, and a flow diagram of the review process is shown in Figure 1.

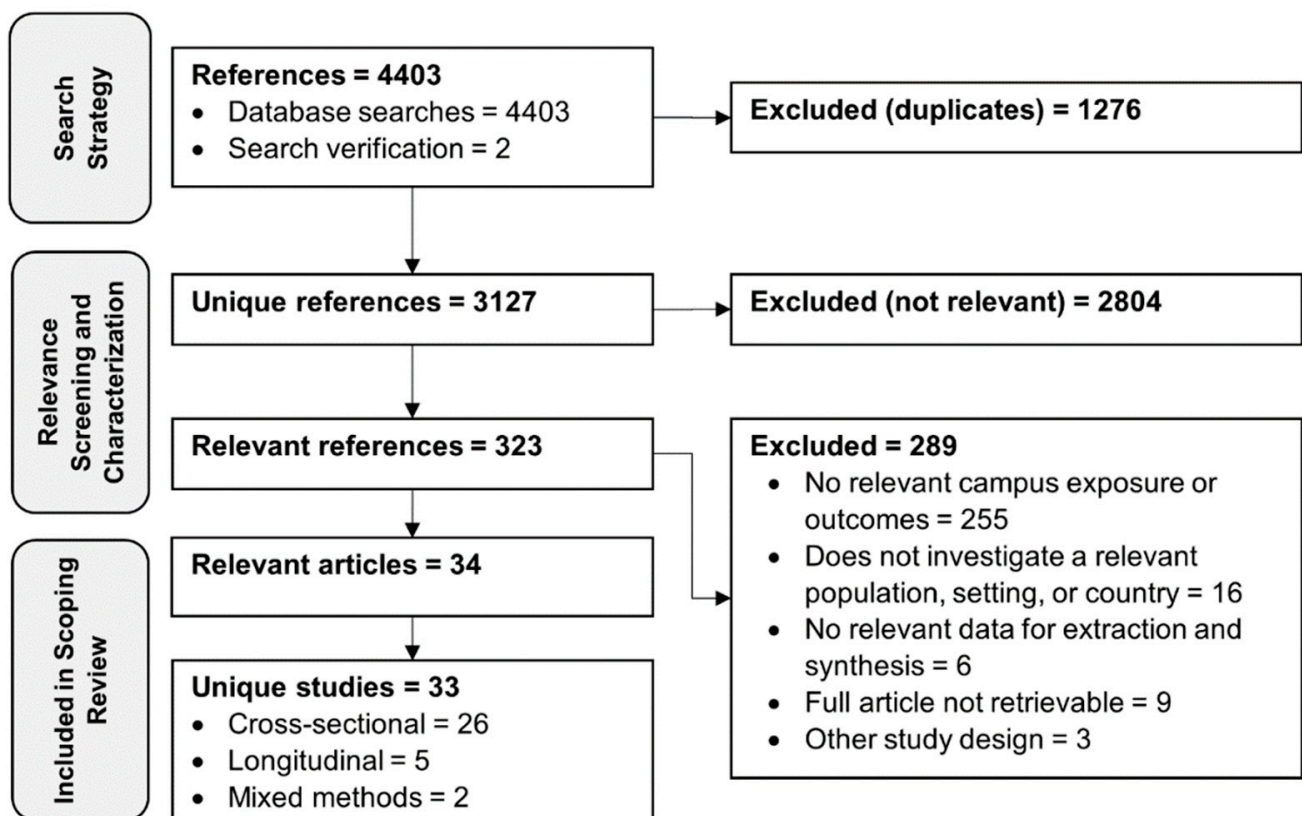


Figure 1. Flow diagram of the review process.

Regarding the student population, most studies focused on undergraduate students ($n = 16$), some examined students in a medical profession ($n = 5$), and the rest did not specify a specific postsecondary student population ($n = 13$). Additional priority groups examined included Indigenous students ($n = 1$), students who reported feeling stressed ($n = 2$), student athletes ($n = 2$), students who were immigrants ($n = 1$), women only ($n = 1$), and students with a reported cognitive, physical, or psychological disability ($n = 1$).

Most studies ($n = 25$) evaluated indicators of clinically significant levels of symptoms or screen positives for common mental disorders (e.g., stress, depressive symptoms, anxiety), fewer studies ($n = 9$) evaluated positive mental health outcomes (e.g., purpose in life, psychological wellbeing, flourishing), and a small number examined both positive and adverse mental health outcomes ($n = 4$).

Generally, mental health outcomes across studies used validated measures such as the Generalized Anxiety Disorder-7 (GAD-7), the Patient Health Questionnaire (PHQ-9), and the Kessler Psychological Distress Scale (K10) (Table 1). A small number of studies operationalized wellbeing more broadly (i.e., Psychological Wellbeing Scale, Flourishing Scale,

Mental Health Continuum-Short Form, College Student Subjective Wellbeing Questionnaire) (Table 1). Regarding risk and protective factors, many studies did not comment on the reliability and validity of measures used (e.g., satisfaction with the university, perceived ethnic density, feeling that administration is concerned about students' mental health) (Table 1).

Table 1. Studies examining associations between institutional factors on postsecondary student wellbeing in Canada, measures used, and relevant study details ($n = 34$).

Study	Study Design	Province	Study Population	Sample Size	Data Collection Method	Response Rate	Measures Used
Gilbert et al. (2021) [33]	Longitudinal	Québec	Undergraduate students (1st year)	T1 = 1783; T2 = 1053; $n = 2450$ students (78% women) $n = 2$ institutions	Online	14.7% completed both time points	Validated: <ul style="list-style-type: none"> • Need satisfaction and need frustration: Basic Psychological Need Satisfaction and Frustration Scale (24-item) • Self-control: Brief Self-control Scale (13-item) • Anxiety: General Anxiety Disorder-7 (7-item) • Depression: Patient Health Questionnaire (9-item)
Lisnyj et al. (2022) [34]	Cross-sectional	National	Students who reported feeling stressed	$n = 31,091$ students (74% women) $n = 58$ institutions	Online	20.0%	Validated: <ul style="list-style-type: none"> • Level of awareness of how to access mental health supports/services on campus (1-item) • Received information on stress reduction from one's institution (1-item) • Approximate cumulative GPA (1-item) • Stress: whether stress has impacted your academic performance in the past year (1-item)
Boutros et al. (2021) [35]	Cross-sectional	Alberta	No	$n = 638$ students (79% women) $n = 1$ institution	Online	Not reported	Unclear validity: <ul style="list-style-type: none"> • Preference for online courses for the next term (1-item) • Satisfaction with the university (1-item) • Satisfaction with the provincial government (1-item) Validated: <ul style="list-style-type: none"> • Anxiety symptoms: Generalized Anxiety Disorder-7 (7-item) • Depressive symptoms: Major Depression Inventory (12-item)

Table 1. Cont.

Study	Study Design	Province	Study Population	Sample Size	Data Collection Method	Response Rate	Measures Used
Theriault et al. (2021) [24]	Cross-sectional	Nova Scotia	Undergraduate students	$n = 216$ students (53% women) $n = 1$ institution	Unclear	Not reported	Unclear validity: <ul style="list-style-type: none"> Living situation (1-item) Validated: <ul style="list-style-type: none"> Psychological wellbeing: 7-item subscale from the Self-Rated Abilities for Health Practices Scale
McGuinness et al. (2021) [36]	Cross-sectional	Alberta	Undergraduate students	$n = 177$ students (73% women) $n = 1$ institution	Online	Not reported	Validated: <ul style="list-style-type: none"> Supportive structure: 4-item subscale from the Mindful Self-Care Scale Sense of relatedness: 20-item subscale from the Resilience Scale for Young Adults Mental health flourishing: Flourishing Scale (8-item)
Gilbert et al. (2022) [37]	Cross-sectional	Québec	Undergraduate students	$n = 1797$ students (79% women) $n = 2$ institutions	Online	8.8%	Validated: <ul style="list-style-type: none"> Need support and need thwarting: College need support/thwarting questionnaire (172-item, 18 subscales) Anxiety: General Anxiety Disorder-7 (7-item) Depression: Patient Health Questionnaire (9-item)
Adams et al. (2021) [38]	Longitudinal	Ontario	Undergraduate students (1st year)	T1 = 3029; T2 = 1952; $n = 1686$ students $n = 1$ institution	Online	37.0% completed both time points	Validated: <ul style="list-style-type: none"> University connectedness: School connectedness subscale (4-item) of the College Wellbeing Scale (16-item) Depressive symptoms: Patient Health Questionnaire-9 (9-item) Anxiety symptoms: Generalized Anxiety Disorder Questionnaire (7-item)
Horrocks (2021) [39]	Cross-sectional	Québec	Undergraduate students (1st year; Science and Engineering)	$n = 221$ students (60% women) $n = 1$ institution	Online	Not reported	Unclear validity: <ul style="list-style-type: none"> Academic support: received social support from institution and faculty/staff (2-item adapted from previous study) Validated: <ul style="list-style-type: none"> Emotional exhaustion: Maslach Burnout Inventory (7-item)

Table 1. Cont.

Study	Study Design	Province	Study Population	Sample Size	Data Collection Method	Response Rate	Measures Used
Lisnyj et al. (2023) [40]	Cross-sectional	National	Undergraduate students who reported feeling stressed in the past year	$n = 31,091$ students (74% women) $n = 58$ institutions	Online	20.0%	Validated: <ul style="list-style-type: none"> Perceiving a campus as safe: Not reported Feeling one's campus environment supports student mental health (1-item) Previously received information on stress reduction from school (1-item) Previous utilization of psychological or mental health services (1-item) Participation in organized campus athletics (1-item) Stress: whether stress impacted academic performance in the last year (1-item)
Lett et al. (2020) [41]	Cross-sectional	Alberta Prince Edward Island Québec Saskatchewan	Students who reported a physical, cognitive, or psychological disability	$n = 108$ students (74% women) $n = 7$ institutions	Online	Not reported	Unclear validity: <ul style="list-style-type: none"> Institutional betrayal: Institutional Betrayal and Support Questionnaire (23-item) Validated: <ul style="list-style-type: none"> Anxiety: General Anxiety Disorder-7 Scale (7-item) Depression: Patient Health Questionnaire-9 (9-item)
Neufeld et al. (2020) [42]	Cross-sectional	Saskatchewan	Medical students	$n = 160$ (58% women) $n = 1$ institution	Online	46.0%	Validated: <ul style="list-style-type: none"> Learning climate: Learning Climate Questionnaire (15-item, modified) Basic psychological need satisfaction and need frustration: Basic Psychological Needs Satisfaction and Frustration Scale (24-item) Psychological wellbeing: Ryff's Psychological Wellbeing Scale (42-item)
Lisnyj et al. (2020) [23]	Cross-sectional	Ontario	Not specified	$n = 1053$ students (79% women) $n = 1$ institution	Online	31.1%	Validated: <ul style="list-style-type: none"> Approximate cumulative GPA (1-item) Anxiety: Has anxiety affected your academic performance within the last 12 months (1-item)

Table 1. Cont.

Study	Study Design	Province	Study Population	Sample Size	Data Collection Method	Response Rate	Measures Used
Woodgate et al. (2020) [25]	Cross-sectional	Manitoba	Not specified	$n = 593$ students (77% women) $n = 1$ institution	Online	24.0%	Unclear validity: <ul style="list-style-type: none"> Working on academic group assignments (1-item) Asking professor or classmate for help (1-item) Contacting professor (1-item) Speaking in class (i.e., participating in discussion) (1-item) Lifetime prevalence of anxiety (1-item)
Willoughby et al. (2020) [43]	Longitudinal	Ontario	Undergraduate students (at time of enrollment)	$n = 1017$ students (71% women) $n = 1$ institution	Telephone and online	43.1% completed all 7 waves	Unclear validity: <ul style="list-style-type: none"> Goals for university: Not reported Validated: <ul style="list-style-type: none"> Depressive symptoms: Center for Epidemiologic Studies Depression Scale (20-item) Other: <ul style="list-style-type: none"> University grades were retrieved directly from the institution
Motz and Currie (2019) [44]	Mixed methods	Alberta	Indigenous students	$n = 142$ (71% women) $n = 1$ institution	In-person questionnaire	Not reported	Unclear validity: <ul style="list-style-type: none"> Racially motivated housing discrimination: Experiences of Discrimination Scale-modified (2-item) Validated: <ul style="list-style-type: none"> PTSD symptomology scores: PTSD Checklist Civilian Version (17-item)
Bartlett et al. (2019) [45]	Cross-sectional	Newfoundland and Labrador	Medical school	$n = 180$ students (59% women) $n = 1$ institution	Online	66.0%	Unclear validity: <ul style="list-style-type: none"> Year of training in medicine: Not reported Perceived Medical School Stress subscales (3-item) Validated: <ul style="list-style-type: none"> Distress: Kessler Psychological Distress Scale (10-item)
Thompson et al. (2019) [46]	Cross-sectional	Nova Scotia	Not specified	$n = 941$ students (70% women) $n = 1$ institution	Online	20.0%	Validated: <ul style="list-style-type: none"> Sense of belonging: University Belonging Questionnaire (24-item) Depression, anxiety, and stress: Depression, Anxiety Stress Scale Short Form 21 (21-item)

Table 1. Cont.

Study	Study Design	Province	Study Population	Sample Size	Data Collection Method	Response Rate	Measures Used
Guilmette et al. (2019) [47]	Cross-sectional	Québec	Undergraduate students	$n = 701$ students (77% women) $n = 1$ institution	Online	Not reported	Unclear validity: <ul style="list-style-type: none"> Satisfaction with academic performance (1-item) Participation in extracurricular activity (4-item) Validated: <ul style="list-style-type: none"> Emotional wellbeing: Positive and Negative Affect Schedule (20-item)
Othman et al. (2019) [48]	Cross-sectional	Ontario	Undergraduate students	$n = 148$ students (75% women) $n = 1$ institution	Online	90.0%	Unclear validity: <ul style="list-style-type: none"> Obtaining a desired GPA: Not reported Concerns about political factors (2-item) Validated: <ul style="list-style-type: none"> Depression: Patient Health Questionnaire (9-item) Generalized stress: Perceived Stress Scale (10-item)
Wilcox and Nordstokke (2019) [49]	Cross-sectional	Alberta	Undergraduate students (1st year)	$n = 66$ students $n = 1$ institution	Online	Not reported	Validated: <ul style="list-style-type: none"> School connectedness: 4-item subscale from the College Student Subjective Wellbeing Questionnaire College gratitude: 4-item subscale from the College Student Subjective Wellbeing Questionnaire Academic satisfaction: 4-item subscale from the College Student Subjective Wellbeing Questionnaire Academic efficacy: 4-item subscale from the College Student Subjective Wellbeing Questionnaire Satisfaction with life: Satisfaction with Life Scale (5-item)
Sullivan et al. (2019) [50]	Cross-sectional	National	Student athletes	$n = 284$ (63% women) Number of institutions not reported	Online	Not reported	Unclear validity: <ul style="list-style-type: none"> Playing status: 1-item, starter/non-starter Athletic scholarship status (1-item, yes/no) Validated: <ul style="list-style-type: none"> Distress: Kessler Psychological Distress Scale-6 (6-item)

Table 1. Cont.

Study	Study Design	Province	Study Population	Sample Size	Data Collection Method	Response Rate	Measures Used
Motz (2018) * [51]	Cross-sectional	Alberta	Indigenous students	<i>n</i> = 138 (72% women) <i>n</i> = 1 university	In-person questionnaire	Not reported	Unclear validity: <ul style="list-style-type: none"> Racially motivated housing discrimination: Experiences of Discrimination Scale-modified (2-item) Validated: <ul style="list-style-type: none"> PTSD symptomology scores: PTSD Checklist Civilian Version (17-item)
McLuckie et al. (2018) [52]	Cross-sectional	Nova Scotia	Medical students and medical residents	<i>n</i> = 381 students (60% women) <i>n</i> = 1 institution	Unclear	37.0%	Unclear validity: <ul style="list-style-type: none"> Feeling mentally or emotionally supported at university (1-item) Validated: <ul style="list-style-type: none"> Distress: Kessler Psychological Distress Scale (10-item) Depersonalization: from Maslach Burnout Inventory-2 (1-item) Emotional exhaustion: from Maslach Burnout Inventory-2 (1-item) Resilience: Connor-Davidson Resilience Scale-2 (2-item)
Poole et al. (2018) [53]	Longitudinal	Ontario	Not specified	T1 = 997 students; T2 = 1444 students, T3 = 1146 students (75% women) <i>n</i> = 1 institution	Online	Not reported	Unclear validity: <ul style="list-style-type: none"> Year of study (1-item) Faculty/department (1-item) GPA (1-item) Validated: <ul style="list-style-type: none"> Number of stressors: Undergraduate Stress Questionnaire (83-item) Perceived stress: Perceived Stress Scale (10-item)
Henderson et al. (2018) [54]	Cross-sectional	National	Undergraduate students (1st year)	<i>n</i> = 1885 students (50% women) <i>n</i> = 3 institutions	Online	32.0%	Unclear validity: <ul style="list-style-type: none"> Feeling valued as a person on campus (1-item) Fit well into the social life on campus (1-item) Feeling that faculty/staff care about me as a student (1-item) Feeling that administration is concerned about students' mental health (1-item) Validated: <ul style="list-style-type: none"> Mental health problems: Kessler Psychological Distress Scale (10-item)

Table 1. Cont.

Study	Study Design	Province	Study Population	Sample Size	Data Collection Method	Response Rate	Measures Used
Van Slingerland et al. (2018) [55]	Longitudinal	National	Student athletes	T1 = 388 (62% women); T2 = 100 (75% women) n = 30 universities	Online	Not reported	Unclear validity: <ul style="list-style-type: none"> • Living situation (1-item) • Year of study (1-item) • Type of sport (1-item) Validated: <ul style="list-style-type: none"> • Mental health functioning: Mental Health Continuum–Short Form (14-item)
Newcomb-Anjo et al. (2017) [56]	Cross-sectional	Québec	Undergraduate students	n = 903 students (82% women) n = 1 institution	Unclear	Not reported	Unclear validity: <ul style="list-style-type: none"> • Assignment count in past and upcoming 2 weeks (1-item) • Grades (1-item) • Days into semester: retrieved from respondent response date Validated: <ul style="list-style-type: none"> • Academic work engagement: Utrecht Work Engagement Scale–adapted (17-item) • Loneliness: UCLA Loneliness Scale–adapted (8-item) • Perceived academic stress: Perceived Stress Scale–adapted (4-item) • Depressive symptoms: Center for Epidemiologic Studies–Depression Scale (20-item)
McDougall et al. (2016) [57]	Cross-sectional	New Brunswick Nova Scotia Prince Edward Island	Undergraduate students who identified as women (<30 years old)	n = 6939 (100% women) n = 8 institutions	Online	34.8%	Unclear validity: <ul style="list-style-type: none"> • Grade point average: Not reported Validated: <ul style="list-style-type: none"> • Depression: Center for Epidemiologic Studies Depression Scale (CES-D12; 12-item)
Webb and Forrester (2015) [58]	Cross-sectional	Ontario	Students who participated in ≥1 intramural sport on campus	n = 315 (40% women) n = 1 university	In-person questionnaire	93.2%	Unclear validity: <ul style="list-style-type: none"> • Intramural sport participation: Task- and Ego-Oriented in Sport Questionnaire (13-item) • Affect: Positive Affect Negative Affect Schedule (20-item)
Versaevel (2014) [59]	Cross-sectional	National	Not specified	n = 32,443 students (68% women) n = 32 universities	Online	20.0%	Unclear validity: <ul style="list-style-type: none"> • Academic performance: Approximate cumulative GPA (1-item) • Overall level of stress experienced in the last 12 months (1-item)

Table 1. Cont.

Study	Study Design	Province	Study Population	Sample Size	Data Collection Method	Response Rate	Measures Used
Marcotte et al. (2014) [60]	Cross-sectional	Québec	Undergraduate students (1st year)	$n = 389$ students (59% women) $n = 1$ institution	Unclear	Not reported	Unclear validity (on measuring resilience): <ul style="list-style-type: none"> Resilience: operationalized based on a low score on the Beck Depression Inventory-2 (21-item), and above average scores on >2 risk factors on: Family Environment Scale (90-item), Perception of Parents Scale (42-item), and Parental Monitoring Questionnaire (27-item) Validated: <ul style="list-style-type: none"> Academic motivation, attachment to college, emotional adjustment to college, and academic adjustment to college: Student Adaptation to College Questionnaire (67-item)
Jurcik et al. (2013) [61]	Cross-sectional	Québec	Students who were immigrants	$n = 146$ (86% women) $n = 1$ institution	Unclear	Not reported	Unclear validity: <ul style="list-style-type: none"> Perceived ethnic density (1-item) Validated: <ul style="list-style-type: none"> Depressive symptoms: Center for Epidemiologic Studies–Depression (20-item)
Elani et al. (2013) [62]	Mixed methods	Québec	Dental students	$n = 142$ students (63% women) $n = 1$ institution	In-person and online	65.7%	Unclear validity: <ul style="list-style-type: none"> Workload (4-item) Validated: <ul style="list-style-type: none"> Stress: Dental Environment Stress questionnaire (30-item)
Chernomas and Shapiro (2013) [63]	Cross-sectional	Manitoba	Undergraduate nursing students	$n = 437$ students (89% women) $n = 1$ institution	Online	Not reported	Unclear validity: <ul style="list-style-type: none"> Perceived faculty stress after enrolling into nursing program: Not reported Validated: <ul style="list-style-type: none"> Depression, anxiety, and stress: Depression Anxiety Stress Scales (42-item)

* This thesis contains a published version that has been reported in this table elsewhere [51].

3.2. Relevant Impacts on Wellbeing

Perceptions of the institution were found to be associated with mental health outcomes in two studies. Feeling valued by one's university, including feeling that faculty and administration care about student wellbeing, were associated with reduced mental health

problems in a national sample [54]. Feeling supported at one's college or university was specifically linked to reduced psychological distress, depersonalization, emotional exhaustion, and increased resilience [52].

Campus environments were found to be associated with student wellbeing in six studies. Connection to one's campus and a sense of campus belonging were significantly associated with reduced symptoms of anxiety and depression and reduced stress [38,46], and with increased life satisfaction [49], but did not impact student resilience [60]. Perceiving one's campus to be safe and believing one's campus environment supported mental health also each significantly reduced the odds of students reporting stress [40], but overall university satisfaction was not found to have an impact on student symptoms of anxiety or depression [35].

Institutional actions, such as providing students with information about stress reduction, were found to be associated with significantly reduced stress [34,40]. Among students with a reported physical, cognitive, or psychological disability, perceiving their institution did not do enough to prevent or respond to incidents of disability-based discrimination was significantly associated with greater symptoms of depression, though this perception did not impact anxiety symptoms [41].

Academic environments were identified in six studies as a significant stressor associated with increased depressive symptoms [56,63], higher stress and higher anxiety [64], but not with student resilience [60]. The stress of academics has been shown to vary over time with changing demands and workload [56,62]. One study examining the impact of a fall reading break on student stress found that although students reported fewer stressors after the break, perceived stress levels increased overall over the term [53]. The consequences of academic stress may be lessened with specific academic support [39] or by ensuring academic settings are supportive of students' psychological needs (i.e., autonomy, competence, and relatedness) [37,42]. Further, supportive structures that enable students to maintain a manageable and organized schedule and a comforting living environment were found to be statistically significantly associated with positive mental health [64].

Supports specific to a postsecondary context (e.g., support from faculty or staff, support received on campus) showed a protective effect against depression in five studies across five provinces [37,38,56,57,61], a significant positive relationship with student flourishing in Alberta [36], and a significant association with reduced emotional exhaustion in Québec [39]. The source of social support may impact outcomes. Social support from instructors protected against depression and anxiety, but social support from peers was associated with increased depressive symptoms, had no impact on anxiety [37,56], and no impact on student resilience [60]. Further, perceived availability of social support was not associated with anxiety when adjusting for university connectedness [38]. Supportive relationships, feeling like one fit well into campus social life, and finding trust and comfort among others were significantly associated with reduced mental health concerns and more positive mental health overall in three national studies [36,40,54].

Effective emotional adjustment to college was associated with increased student resilience [34,35,56,60]. One national study found that awareness of mental health resources on campus was associated with reduced stress [34], while a second study at the provincial level found no significant association [52].

Relationships emerged as a protective factor for students living off-campus in four studies, with two studies finding no effect [52,55]. Experiences of interpersonal violence both on and off campus emerged as risk factors for poor mental health in three studies [41,44,57], were not associated with depressive symptoms in one study [61], and predicted depressive symptoms only by verbal abuse but not physical or sexual abuse in another study [56]. For example, students who reported experiencing overt discrimination, including anti-Indigenous housing discrimination and non-consensual sex, were more likely to experience symptoms of depression [41,57] and PTSD [44], but not anxiety [41]. Experiencing microaggressions at university, however, was not found to be associated with symptoms of depression or anxiety [41].

Academic factors such as increased concern over one's grade point average (GPA), fear of failure, and perceiving one's academic program more negatively were associated with increased odds of depression, stress [48], anxiety [25], and greater psychological distress [45]. In contrast, having a higher GPA and being satisfied with one's academic performance were associated with better mental health [23,34,47,49,53,56,57,59].

Studies found both positive and null associations for the mental health impact of participation in organized campus athletics [40,47,50,58].

4. Discussion

We synthesized the evidence examining associations between institutional influences and postsecondary student wellbeing in Canada. Broadly, there was a shortage of evidence from Atlantic provinces, Prairie provinces, and territories. Postsecondary institutions vary in their student population size, demographics, mental health supports, contexts, and needs [15,65]. Therefore, findings from this review may not apply to all postsecondary institutions in Canada due to their diverse campus contexts and needs. Furthermore, most studies were not informed by a health promotion or mental health framework, theory, or model. Evidence suggests that mental health promotion should move toward theory-based research to facilitate theory-informed interventions [66]. Additionally, most included studies did not report on whether their data collection instruments were pretested, which introduced concerns regarding the validity and reliability of these instruments. Finally, research investigating graduate students, part-time students, and equity-deserving groups (e.g., students with disabilities, ethnocultural groups, Indigenous students, 2SLGBTQIA+ students) were lacking. Future investigations in this area are advised to follow good reporting standards and address knowledge gaps in the identified regions and populations.

4.1. Campus Climate and Its Implications for Program and Service Delivery

Several studies in this review demonstrated that a positive campus climate, perceived institutional actions, supportive academic environments, and favorable attitudes toward the institution surrounding wellbeing may be protective against negative mental health outcomes, and even promote wellbeing among students [38,42,46,49,52]. Findings from other countries corroborate this by showing campus climate is a mediator of student mental wellbeing [67–69]. In contrast, poor climate (e.g., stigma, discrimination, racially tense environments, perceived unsafe campus, substance use pressures) may be associated with worse mental health [15,41,67], suggesting a need for campuses to support wellbeing activities that aim to promote positive campus climates.

Healthy campus environments are one aspect of a larger approach in which the institution is a domain to enhance and maintain mental health and learning [5,12,13]. Mental health-promoting environments should fundamentally be physically and psychologically safe, specifically considering the needs of equity-deserving student groups to foster inclusion and prevent all forms of interpersonal violence [13,41,44,56,57]. Further, an international review of healthy campus settings highlights the importance of collective and shared responsibility for creating supportive campus-wide environments calling for demonstrated commitment of leadership, ongoing corporate engagement, and accountability at all levels of strategic planning for institutional health and wellbeing [11,13,70]. In practice, healthy campus environments can translate to organizational initiatives that provide accessible resources and support in many forms [1], enable student autonomy and self-determination [37,42], provide opportunities for students to build resilience and social connectedness, and acknowledge student wellbeing in connection to the built, ecological, and economic environments [13,71].

The literature reviewed herein captures a host of factors related to student perceptions of campus climates, including participation, feelings of belonging, affiliation and identity, relationships with other members of the campus community, and attitudes of the institution at large. This finding suggests organizational approaches to building positive environments should be adapted and tailored to reflect diverse contexts and unique community needs.

Meaningful student and community engagement, as well as ongoing and transparent evaluations, are recommended core components of this process [13]. Specific definitions and continued measurements of institutional environments are recommended to ensure service providers and educators can identify and focus on previously identified factors (e.g., sense of belonging, diet, sleep, barriers to help-seeking) [36,39,43,46,49,54,60]. Many postsecondary institutions are moving in this general direction. As the number, variety, and magnitude of mental health services, resources, and programs increase to meet demand and deliver multi-faceted programs that appeal to a variety of students [72], these can present their own unique challenges. Discrete interventions may be overemphasized compared to structural approaches [15], and a lack of systematic evaluations for interventions may result in an inability to identify service delivery gaps or areas for improvement. Furthermore, students may experience barriers to navigating available services and resources at the institution due to the lack of a single repository or location that contains a list of all available resources [1]. To overcome these barriers and make continued progress toward healthy campus environments, we recommend institutions view mental health through a campus-wide lens, seek commitment from institutions' administrators for campus-level approaches, employ a universal approach to service and program delivery that considers the diverse needs of students, conduct systematic evaluations of interventions and services, and establish a centralized living repository to provide students with resources relevant to the navigation of campus and local services.

4.2. Implications for Policies and Systems

Our review findings reveal the importance of institutional actions, perceptions of a campus, and campus climate for student wellbeing [38,42,46,49,52]. Frameworks such as the American College Health Association's Healthy Campus Framework and the Canadian Association of College and University Student Services' Systemic Approach advocate for a shift beyond individual level interventions toward holistic, systems-level approaches [12,13]. These institutional commitments to mental health often involve policy changes [11]. Systematically considering the health and social impacts of all decisions across campus environments may be accomplished by applying a Health in All Policies (HiAP) approach—a recommendation outlined in the Okanagan Charter [5,73].

The HiAP approach can facilitate institutional transformation by embedding wellbeing in all aspects of the campus, including careful consideration of how policies affect the root causes of health and inequity, otherwise known as the social determinants of health [73]. These can cause a shift in collective thinking for a postsecondary institution's mission, vision, administration, operations, and mandates [5]. A content analysis of mission statements of the top 250 universities worldwide found that "health" was only mentioned in 33 instances relative to "research", which was mentioned 438 times [74], suggesting health is not yet prioritized to the same extent as other strategic orientations in these settings. The HiAP approach considers the whole of the institution, with any realized gains in wellbeing to ultimately increase reputation of the institution through greater productivity [73], and directly support core institutional values of education, research, and student success. Importantly, its use as a policy lever can ensure health is at the top of the list; enable synergistic effects of wellbeing activities across institutional levels; reveal gaps in prevention and intervention initiatives, and correct any conscious and unconscious health inequities that may be present [73].

4.3. Variability in Measures

The studies included in this review relied on self-report (vs. diagnostic measures) and a variety of measures to operationalize wellbeing. Generally, mental health outcomes were assessed using validated measures such as the GAD-7, PHQ-9, K10, and the Mental Health Continuum-Short Form. In contrast, many of the institutional factors across studies were not validated or did not comment on it. The differences in variability of measures made it difficult to compare studies in this review, and future research studies in this

area must use reliable and valid measures such as those that have been previously used and identified [75–77]. There may also be value in exploring and establishing additional standardized measures of institutional factors that influence wellbeing. Alternatively, institutional participation in larger standardized population-level wellbeing and mental health assessments, such as the Canadian Campus Wellbeing Survey, the American College Health Association-National College Health Assessment, and the U-Flourish Survey, can support comparability across institutions and through time [78–80].

4.4. Limitations

This review captured the available published evidence investigating associations between institutional factors on postsecondary student wellbeing in Canada. The search strategy used may not have captured all published literature in this area. However, we attempted to overcome this by including grey literature and handsearching references lists of a few relevant articles. Although the critical appraisal of studies was not conducted, many studies included in this review were cross-sectional, and therefore, are considered to provide low certainty of evidence [32]. This limits not only our ability to comment on within-study methodological limitations, but also to make broader generalizable recommendations. The statistically significant associations observed may be bidirectional or causally explained in the reverse direction, and must be carefully interpreted. Moreover, exposures and outcomes of interest across studies varied considerably, making it challenging to synthesize and compare findings. We encourage future syntheses in this area to continue using narrative synthesis approaches or narrow the focus to fewer mental health exposures and outcomes of interest. Specific to this review, the identified factors were generally based on self-report measures from actively enrolled students, which may introduce selection bias and social desirability bias. Furthermore, most studies had a predominantly high proportion of women participants (vs. men, non-binary, and gender-diverse students), and these findings may need to be replicated in other groups. Individuals suffering from severe mental health challenges or who have dropped out of postsecondary education may not have been captured either. Finally, evidence was lacking from Atlantic and Prairie provinces, the territories, and graduate students. Therefore, the review findings may not be representative of these settings, populations, and outcomes.

4.5. Future Directions

Some knowledge gaps were identified. Regarding populations and settings, there is a need for more research on graduate students, students living off-campus, part-time students, and studies in institutions based out of the Atlantic and Prairie provinces and the territories. Regarding exposures and outcomes, we recommend further investigations of positive mental health outcomes (e.g., flourishing, psychological wellbeing). Additionally, exploring mental health promotion through participatory approaches with local communities and student populations may be beneficial.

Studies seeking to investigate institutional factors on student wellbeing should address some of the reporting gaps identified in this review. This includes considering the use of a theory, framework, or model, and ensuring the validity and reliability of data collection instruments. Additionally, only half of the studies reported a response rate, and those that did had relatively low response rates, introducing concerns of selection bias. Purposeful student-led engagement campaigns could overcome this to some degree, and result in greater response and retention rates [22]. Considering most of the studies included in this review were cross-sectional, the application of longitudinal designs may be valuable in determining temporal changes and whether institutional factors identified in this review are indeed antecedents of student mental wellbeing. Some studies in Canada have successfully used these designs to identify proximal risk factors and potentially modifiable proximal factors that could be used as intervention targets within universities to support student mental health [81,82]. To complement this synthesis and continue applying universal health promotion along with targeted interventions, there is a need for institutions to report

findings that can further optimize models of service delivery (e.g., stepped care model), systematically evaluate efforts, and develop a coalition of institutions pursuing systematic population-level data collection using established instruments (e.g., the Canadian Campus Wellbeing Survey, U-Flourish survey) [79,80]. These approaches can aid in making evidence-informed decisions around which interventions and care pathways are effective, and to scale up data collection efforts.

Lastly, a content analysis of Canadian postsecondary campus mental health practices, initiatives, and frameworks can help evaluate the degree to which wellbeing is integrated, and provide insights to build on existing frameworks. Doing so can ensure best practices are proactively sought, and can highlight which modifiable institutional factors affect campus climate and environments.

5. Conclusions

Student wellness is an institution-wide responsibility. This review focused on the Canadian context to ensure applicability to Canadian educators, administrators, policymakers, and institutions. Based on this synthesis, salient factors such as institutional actions, perceived campus safety, campus climate, campus belonging, and attitudes toward the institution were associated with student wellbeing. This indicates campus culture and student perceptions toward the institution may be worth targeting, alongside individual-level interventions to comprehensively promote mental health across campuses. Our review serves as the first to map institutional factors affecting postsecondary student mental wellbeing in Canada. Although there are some concerns about generalizability, the implications of these findings suggest a need to consider the use of universal health promotion, scale up population-level assessments of established surveys in Canada, and systematically evaluate campus mental health efforts.

Future research should aim to establish temporal associations between the identified factors on mental health through the application of cohort study designs. There is also a need to establish validated measures of institutional-level factors, apply them, and investigate these factors among student populations not sufficiently captured in this review, such as graduate and part-time students.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/psych5030040/s1>, The review protocol, PRISMA checklist, search documentation, review forms, and detailed study characteristics of included studies in this review.

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