

Rapid

Review



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Supporting Mental Health and Wellbeing Among Students in Higher Education

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List of Abbreviations

ACT	Acceptance and Commitment Therapy
ADHD	Attention Deficit Hyperactivity Disorder
AYL	ACTivate Your Life
CAMH	Centre for Addiction and Mental Health
CBT	Cognitive Behavioural Therapy
CICMH	Centre for Innovation in Campus Mental Health
CCG	Clinical Commissioning Groups
CYPMHS	Children and Young People’s Mental Health Service
GBMI	Gender-Based Motivational Interviewing
HBI	Healthy Body Image Program
ISCED	International Standard Classification of Education
LI-CBT	Low-Intensity Cognitive Behaviour Therapy
LIVE Well	Long-Term Investment in Education for Wellness Act
MAC	Mindfulness Acceptance-Commitment
MHIF	Mental Health Innovation Fund
MHST	Mental Health Support Team
MI	Motivational Interviewing
NEDA	National Eating Disorders Association
NHS	National Health Service
OECD	Organization for Economic Co-Operation and Development
OUSA	Ontario Undergraduate Student Alliance
OSMHN	Oxford Student Mental Health
SNAP-Ed	Supplemental Nutrition Assistance Program Education
SUCCEEDS	Students Understanding College Choices: Encouraging & Executing Decisions for Success
WHO	World Health Organization
WNHSS	Welsh Network of Health School Schemes

Introduction and Background

Mental illness affects approximately 20% of the adult population in high-income jurisdictions and carries a significant societal and economic cost (Mental Health Commission of Canada, 2013; OECD/EU, 2018; Steel et al., 2014). The direct and indirect spending associated with mental illness amounted to nearly 3% of the Canadian gross domestic product in 2011 (Hewlett & Moran, 2014; Mental Health Commission of Canada, 2013). Mental health leaves of absence are twice as costly as leaves of absence due to physical illnesses (Mental Health Commission of Canada, 2019a). Since the risk factors for mental illness are wide ranging, (Uher & Zwicker, 2017) improving mental health requires a multi-pronged approach, ranging from evidence-based therapies to public policies that recognize that mental health is a vital part of overall wellbeing (Centers for Disease Control and Prevention, 2018; Wahlbeck, 2015). The World Health Organization (WHO) Mental Health Action Plan (2013) urges governments to consider both a life course perspective to consider mental wellbeing at all life stages, and multisectoral approach to foster collaboration with public and private sectors when designing mental health policies.

The symptoms of mental ill-health predominantly emerge in adolescence and young adulthood (Auerbach et al., 2018; Bibeau, 2015; Ronald C Kessler et al., 2007; Willinsky, 2015), with most lifetime diagnoses made by the age of 25 (Kessler et al., 2005; Mental Health Commission of Canada, 2019b). Though delaying treatment may lead to poorer functional outcomes later in life (McGorry et al., 2011), fewer than 20% of youth with mental health issues receive recommended treatment (Mental Health Commission of Canada, 2019b). With over 60% of young adults in OECD countries entering some form of post-secondary or higher education (such as universities and colleges) (OECD, 2019), fostering collaborations between governments and post-secondary institutions may be key for improving mental health in this population (Ontario College Health Association, 2009) – particularly in light of a growing demand for student mental health services and the increasing complexity of student mental health needs (ACHA National College Health Assessment II, 2016; Auerbach et al., 2018; Coordinating Committee of Vice Presidents Students, 2015; Duffy et al., 2019; Royal College of Psychiatrists, 2011). Improving mental health among students in the post-secondary setting may also have longer-term societal and economic implications, such as increased graduation rates and participation in the workforce (Ng & Padjen, 2019), where the importance of mental illness is being increasingly recognized. For instance, in a recent survey, over 60% of Canadian benefit plan sponsors reported emotional health as their top investment priority for employee wellbeing (Sanofi Canada, 2019).

While there is emerging interest among Canadian provincial and territorial governments in the importance of addressing mental health and wellbeing among students in higher education, there are also promising initiatives internationally such as in the United Kingdom (UK) and Australia (Caldas de Almeida et al., 2017). These initiatives may offer useful lessons for similar efforts in Canada and other high-income jurisdictions. In this rapid review, we performed a scoping review of academic and grey literature to understand (1) how post-secondary institutions support mental health among students, and (2) how governments are working to improve mental health and wellbeing in post-secondary education settings.

Methods

Rapid Scoping Review

We undertook a scoping review of the literature using systematic searching and data collation methods to understand how post-secondary institutions¹ support mental health and wellbeing among students, and how governments support universities in these efforts. We searched multidisciplinary bibliographic research databases for English-language studies published between 2016 and 2019 relating to the following search concepts: (1) government and public policy, (2) mental health, and (3) post-secondary education. We specifically focused on successful programs, defined as those that showed significantly positive and sustained impacts on pre-specified outcomes. A detailed overview of the scoping review methodology, including the electronic database search strategy, study selection process (PRISMA statement), data extraction and synthesis approach, and rapid review limitations, are available in Appendices A-C. A summary of the studies retrieved in the scoping review is available in Appendix D.

Rapid Jurisdictional Review

The review of scholarly literature was supplemented by a targeted scan of grey literature and government websites to identify interventions, policies, programs, and best practices aimed at improving mental health and wellbeing in post-secondary education settings within jurisdictions comparable to Canada. A preliminary scan was performed through government websites and published reports by the Organization for Economic Co-Operation and Development (OECD), the European Union (EU), and the WHO (e.g., the OECD Mental Health Analysis Profiles [MhAPs]; the OECD "Health at a Glance: Europe 2018" report; the OECD Recommendation on Integrated Mental Health, Skills and Work Policy 2015; the EU-Compass for Action on Mental Health and Wellbeing 2017 report; and the WHO Mental Health Atlas 2018) for the following countries: Australia, Bulgaria, Croatia, Czech Republic, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Portugal, Sweden, and the UK.

We selected jurisdictions that have demonstrated collaboration between the government and institutions of higher/post-secondary education (e.g., through resource allocation, frameworks, or mutual strategies, policies, and plans) on mental health promotion and mental illness prevention efforts in higher education settings. The UK (England, Scotland, and Wales) and Australia were selected as they met this criterion. An interactive scan and synthesis of grey literature was performed by two researchers (MK, MR) to gather evidence on UK and Australia government-supported efforts for promoting mental wellbeing in higher education settings. A summary of the interventions identified in the jurisdictional review is available in Appendix E.

¹ Given the variety of jurisdiction-specific terminologies used to denote higher-learning institutions, we use *post-secondary* or *higher education* as interchangeable "catch-all" terms throughout this review. However, when discussing specific studies and programs, we use the original institution-specific terms (e.g., university or college).

Limitations

The reviewed publications focused on student mental health promotion and wellbeing initiatives in post-secondary institutions that may not represent all successful initiatives undertaken in post-secondary settings, as some interventions may target faculty and staff. Accounts of interventions published prior to 2016 were not captured in the scoping review search and publications were limited to English. However, according to a prior comprehensive review by evidence synthesis experts, this use of language restrictions is unlikely to result in systematic biases that would meaningfully alter the interpretation of the findings (Morrison & Canadian Agency for Drugs and Technologies in Health, 2009). The scoping review selection criteria did not specify thresholds for minimum effect size or minimum duration of follow-up to define “successful” interventions; rather, we relied on statistical significance and/or author-reported clinically meaningful differences and trends to identify positive results (included literature did not undergo critical appraisal). Excluded articles that did not report statistically significant results or did not provide follow-up data beyond the end of an intervention may still provide useful insight to understand how post-secondary institutions have been addressing mental health and wellbeing.

A semantic approach to thematic analysis and identification of best practices relies on the assumptions and claims made by each publication’s authors, which we could not confirm empirically. We did not compare impacts between various intervention approaches and elements, and the jurisdictional review was selective and non-systematic. Finally, initiatives aimed at promoting physical health, equity, inclusivity, and social protection, which may also have important implications for student mental health and wellbeing, were not explored.

Analytic Overview

Of the 449 full-text articles screened for eligibility, 62 described a mental health program for post-secondary students in OECD countries. Forty-nine studies were then excluded because they described an intervention that had not yet been evaluated ($n = 7$), or because the intervention of interest did not demonstrate a significant positive ($n = 16$) and sustained ($n = 26$) impact on outcomes (Appendix C). Accordingly, this rapid scoping review identified 15 studies of mental health interventions that showed a significant positive impact on one or more outcomes for at least one month following completion of the intervention.

All studies were conducted outside of Canada, with 11 (73%) from the United States (US), and one each from Australia (Stallman et al., 2016), Finland (Räsänen et al., 2016), Ireland (Mc Sharry & Timmins, 2016), and South Korea (Bang et al., 2017). While a formal critical appraisal was beyond the scope of this review, it is notable that all but three studies featured a parallel comparison group that did not receive the intervention (Fitzsimmons-Craft et al., 2019; Rallis et al., 2017; Vasko et al., 2019), all but one were prospective in nature (Fitzsimmons-Craft et al., 2019), and all but six employed random intervention allocation (Akeman et al., 2019; Bang et al., 2017; Fitzsimmons-Craft et al., 2019; Mc Sharry & Timmins, 2016; Rallis et al., 2017; Vasko et al., 2019), which suggests that the evidence retrieved was generally of higher methodological quality.

The included interventions were all preventive, though they targeted a wide range of aspects of student mental health and wellbeing as displayed in Table 1. Interventions differed in terms of their scale and stage of implementation, with three programs replicated across multiple post-secondary institutions (Akers et al., 2017; Fitzsimmons-Craft et al., 2019; Stice et al., 2017) and 12 single-site programs (Akeman et al., 2019; Bang et al., 2017; Boucher, 2016; Mc Sharry & Timmins, 2016; Rallis et al., 2018; Räsänen et al., 2016; Rohde et al., 2016; Stallman et al., 2016; Syzdek et al., 2016; Turetsky & Sanderson, 2018; Vasko et al., 2019). Notably, all but one (Gross et al., 2018) of the single-site programs were pilots. In the next section, we discuss these interventions in greater detail according to the scale of implementation (i.e., implementation at multiple institutions or single institutions). We also describe a set of salient intervention “best practices” that appear to be common across all programs that have shown a positive impact on outcomes.

Table 1. Aspects of student mental health targeted by interventions

	Mental wellbeing	Eating disorders	Mood & anxiety	Sleep	Stigma	Stress	Substance use	Suicide
Akeman (2019)			✓			✓		
Akers (2017)		✓						
Bang (2017)			✓					
Boucher (2016)					✓			
Fitzsimmons (2019)		✓						
Gross (2018)	✓		✓				✓	
Mc Sharry (2016)	✓							
Rallis (2017)								✓
Räsänen (2016)	✓		✓			✓		
Rohde (2016)			✓					
Stallman (2016)	✓		✓	✓		✓		
Stice (2017)		✓						
Syzdek (2016)			✓		✓			
Turetsky (2018)			✓		✓			
Vasko (2019)			✓				✓	

Interventions Implemented at Multiple Institutions

Three studies evaluated two unique interventions that have been implemented across multiple post-secondary sites in the US. Interestingly, both interventions – Healthy Body Image (Fitzsimmons-Craft et al., 2019) and the Body Project (Akers et al., 2017; Stice et al., 2017) – focused on the prevention of eating disorders. Wider implementation of these programs can be attributed to robust supporting empirical evidence, as well as the involvement of governmental and non-governmental actors.

Role of governments in supporting mental health programs

A pilot randomized-controlled trial of Healthy Body Image (HBI) in two US public university campuses, published in 2014, demonstrated program feasibility (Jones et al., 2014). In April 2013, the preliminary results of this trial caught the interest of the Missouri Eating Disorders Council – a mandated council within the State of Missouri Department of Mental Health, passed into law by the Missouri General Assembly in 2010 to “improve access to treatment, raise awareness, and provide education related to eating disorders” (Fitzsimmons-Craft et al., 2019; Missouri Eating Disorders Council, 2019). The Missouri Eating Disorders Council voted to deploy HBI across all of the state’s 13 public universities, to assess “the potential for this program to help bridge the large treatment gap for eating disorders” (Fitzsimmons-Craft et al., 2019). HBI was subsequently presented to the Council on Public Higher Education in Missouri, of which public university presidents and chancellors are members. Once HBI was approved by a Council vote, it was presented to the university directors of Student Health and Counselling Centers, who enrolled their institutions in the initiative. A local HBI representative, typically a counsellor at the campus health centre, was identified for each implementation site to ensure student safety and promote uptake. The ongoing results of HBI implementation were discussed between the researchers and the Missouri Eating Disorders Council members at monthly meetings. The Missouri Mental Health Foundation, a state-wide

501(c)(3) public non-profit organization, co-sponsored this scale-up effort (Missouri Eating Disorders Association, 2019).

Also in the US but in contrast to HBI, which is a relatively novel intervention, the Body Project is supported by nearly two decades of trial-based evidence demonstrating its effectiveness across various populations, settings, and delivery approaches (National Eating Disorders Association, 2019). As such, the program has long been replicated across over 140 US campuses (National Eating Disorders Association, 2019). In 2012, the program creators formed the Body Project Collaborative to facilitate replication efforts across schools and post-secondary settings nation-wide (The Body Project Collaborative, 2019). The National Eating Disorders Association (NEDA), the largest eating disorders non-profit group in the US and a partner of the Collaborative, participated in a 2018 advocacy effort that led to the introduction of the LIVE Well (Long-Term Investment in Education for Wellness) Act to the US Congressional Committee on Agriculture, Nutrition, and Forestry, aiming to expand the scope of the Supplemental Nutrition Assistance Program Education (SNAP-Ed) federal grant program to include mandated eating disorder preventive education (115th USA Congress, 2018; National Eating Disorders Association, 2018).

Features and outcomes of multi-site interventions

HBI is a web-based eating disorder screening and education program. This evidence-based screening tool is offered to all students, while the education component is risk-stratified based on the screening result. Students determined to be at low risk for eating disorders are offered general health education, while students at high risk and those with eating disorders (other than anorexia nervosa) are offered guided self-help and cognitive behavioural-based strategies to manage symptoms and reduce symptom progression. Students with suspected anorexia are not offered the web-based intervention and are instead referred to in-person resources on campus. Within three years of HBI implementation across all public universities in Missouri, approximately half the students that completed the HBI screening enrolled in their assigned education programs. Although the data for low-risk groups is not yet available, students with subclinical and clinical eating disorders showed a significant reduction in restrictive and binge eating. These outcomes persisted over time, suggesting that prolonged use of HBI led to a greater improvement in symptoms (Fitzsimmons-Craft et al., 2019). While this evaluation was limited by its lack of a comparison group, a large-scale randomized-controlled trial of HBI (ClinicalTrials.Gov: NCT02076464) was completed in November 2019, with results forthcoming.

The Body Project provides young women with a forum to challenge the thin body type ideal through dissonance-based verbal, written, and behavioural exercises (National Eating Disorders Association, 2019). A standard Body Project intervention is delivered across four weekly one-hour in-person group sessions in the university mental health clinic, facilitated by a clinician with training in psychology, counselling, or nutrition. A randomized-controlled trial conducted at eight US universities found that over twice as many individuals receiving the Body Project intervention achieved a clinically meaningful reduction in symptoms that persisted three-years post intervention, compared to the control group receiving educational brochures on eating disorders, (Stice, Butryn, et al., 2013). Achieving a clinically meaningful change in each additional individual was estimated to cost the university \$838 (USD) (Akers et al., 2017). This may represent good value for money, as the annual direct costs of a diagnosed eating disorder (i.e., failure of prevention efforts) per patient have previously been reported to range between \$1,288 to \$8,042 (USD) (Stuhldreher et al., 2012).

Stice et al. (2017) conducted a randomized trial in two public US universities to evaluate the comparative effectiveness of two alternate approaches of delivering the Body Project – a peer-led approach and a web-based approach – against the standard clinician-led model. Peers were recruited from the same university campuses and trained on the Body Project protocols. An unmoderated web-based version of the program (eBody Project) was also developed, including modules, educational activities, and games adapted from the standard version of the program. Previous studies have demonstrated Body Project’s effectiveness when delivered by both undergraduate peer educators (Becker et al., 2012; Halliwell et al., 2015; Stice, Rohde, et al., 2013) and web-based systems (Stice et al., 2012, 2014). Around half of students completed the full program across all conditions, with the largest completion rate in the eBody group (57% vs. 47% in clinician-led and 45% in peer-led groups). All three Body Project approaches had nearly comparable impact on outcomes, such as eating disorder risk factors and symptoms. All intervention arms were also consistently superior at reducing eating disorder risk factors at six months after intervention completion, compared to a non-intervention control. Although a formal economic evaluation was not conducted, alternate intervention delivery methods, such as peer-led or web-based approaches, have the potential to improve reach and reduce costs (Stice et al., 2017).

Interventions Implemented at Single Institutions

Twelve studies reported on the implementation of an intervention at a single post-secondary site. All but one of these (Gross et al., 2018) described pilot programs. These programs appear to have been initiated without government or non-profit support; however, a number of the research and evaluation efforts for these programs were funded by grants from government (Rohde et al., 2016), university (Bang et al., 2017; Rallis et al., 2018; Turetsky & Sanderson, 2018), and non-profit (Akeman et al., 2019; Stallman et al., 2016) organizations. These novel, mostly pilot programs can be broadly categorized into (1) brief didactic psychoeducational interventions, delivered to groups of students in naturalistic settings (e.g., classes and residences) or (2) interventions rooted in therapeutic approaches used in clinical psychology. The former tended to employ a universal approach to prevention, where the target population was unselected, while the latter tended to target increased-risk groups, such as students with subclinical or clinical psychopathology.²

Features and outcomes of psychoeducational interventions

Three studies evaluated a one-time informational intervention in a US university with the aim of educating students on mental health issues and providing resources to enable help-seeking. Boucher (2016) found that an outreach talk on common therapy-related concerns, delivered by trained graduate students in the classroom setting, led to reduced self-stigma and improved intentions and readiness to seek care among undergraduate students at six weeks after the intervention. Turetsky & Sanderson (2018) similarly showed that a 15-minute anti-stigma workshop on misperceptions regarding mental health issues, conducted by trained student health educators in university residence halls, was associated with improved mental health literacy and help-seeking attitudes at the two-month follow-up mark, compared to general education and stress-reduction controls. Rallis et al. (2018) found that an on-campus manualized one-

² Prevention levels are categorized according to Gordon’s (1983) classification system for mental health prevention programs, the details of which are available in Appendix A.

hour suicide gatekeeper training workshop, led by clinical psychology doctoral students, was associated with improved knowledge of suicidal behaviour, ideation, and risk factors at three months' follow-up. The intervention was developed by the university counselling center, modelled after the well-established Campus Connect program.³

Another three studies evaluated multi-session informational programs, typically lasting no more than the duration of a university semester. Mc Sharry & Timmins (2016) assessed the effects of a 32-hour module on healthy lifestyle and psychological wellbeing, delivered as part of a new course in the undergraduate nursing curriculum in an Irish university, titled "Health and Wellbeing." Relative to the control group, participants reported significant improvements in psychological wellbeing scores at the one-year follow-up. Akeman et al. (2019) implemented a four-week resilience program, delivered in first-year US university orientation classes by clinical psychology postdoctoral fellows and doctoral students. The content of the resilience program was created by licensed clinical psychologists, emphasizing the idea of a growth mindset, which encourages students to view challenges and failures as learning opportunities. By the end of the semester, students reported significant improvements in depression symptoms and perceived stress. Finally, Bang et al. (2017) described the effects of a campus forest walking group, which took place during the lunch hour once a week over a six-week period in a South Korean university. This was supplemented by educational brochures on stress management and mental wellbeing, as well as the provision of a physical activity tracker (Fitbit Zip®). Three months after the end of the intervention, students reported significant reductions in depressive symptoms.

Features and outcomes of clinical psychology interventions

Two studies drew on the principles of cognitive behaviour therapy (CBT), a well-established psychological intervention. Rohde et al. (2016) described a six-session CBT group program ("Change Ahead"), delivered by campus clinicians and clinical psychology graduate students to prevent depression among undergraduates with subclinical symptoms in a US university. The intervention pilot was feasible and the Change Ahead group showed a trend towards decreasing self-reported depression ratings at post-intervention and three-month follow-up. Stallman et al. (2016) piloted a low-intensity CBT (LI-CBT) program, facilitated by trained postgraduate health psychology students, in Australian students with mild to moderate distress. LI-CBT was associated with significant reductions in symptoms of depression, anxiety, and stress at two months' follow-up, though these changes were attenuated at subsequent follow-ups at 6-12 months. As only 11% of the eligible students consented to participate in this study, the authors noted that strategies for improving student engagement and retention were needed.

Two studies described interventions related to mindfulness and contemplative practice. Gross et al. (2018) evaluated a group-based Mindfulness-Acceptance-Commitment (MAC) program among female athletes in a US university. At one month after intervention completion, participants showed significantly reduced generalized anxiety symptoms, psychological distress, eating concerns, substance use, and emotional dysregulation. Räsänen et al. (2016) conducted a randomized trial of a seven-week Acceptance-Commitment Therapy (ACT), called "The Student Compass", with Finnish university students who self-reported psychological distress. The program was primarily web-based and self-directed, with two in-

³ A "suicide gatekeeper" training program for university faculty, staff, and students (US): <https://www.sprc.org/resources-programs/campus-connect-suicide-prevention-training-gatekeepers>

person one-on-one feedback meetings with an ACT-trained psychology student. At 12-months follow-up, participants showed reduced symptoms of depression and increased life satisfaction, higher self-esteem, and improved mindfulness skills, compared to the waitlist control group.

Another two studies incorporated motivational interviewing (MI) – a technique derived from counselling practice – to promote behaviour and attitude change. Syzdek et al. (2016) piloted a gender-based motivational interviewing (GBMI) intervention in the US to reduce stigma and enable help-seeking among male university students with subclinical anxiety and depression symptoms. During the two-hour GBMI session, participants completed a self-assessment on help-seeking attitudes and psychopathology and received one-on-one feedback from two trained male graduate students. Two months after the intervention, more participants in the GBMI group reported seeking mental health support from parents (44% of GBMI participants vs. 8% controls). Using a mixed methods case study design, Vasko et al. (2019) found that a four-week one-on-one MI intervention, delivered by a trained on-campus counsellor and supported by the use of a self-monitoring mobile application (“Behavioral Appivation”), was associated with reduced substance use, anxiety, and depression in students with subclinical and clinical ADHD, three months after the intervention.

Summary of Best Practices

Despite the differing objectives and scale of implementation in the interventions identified, a number of best practices emerged for designing and delivering impactful mental health prevention programs for students in post-secondary settings. These practices are described below alongside examples of their application in the reviewed literature.

Use of technology and multi-modal approaches

Of particular salience is the use of technology, including smartphones, wearable technology, and web-based interventions (Bang et al., 2017; Fitzsimmons-Craft et al., 2019; Stallman et al., 2016; Stice et al., 2017; Vasko et al., 2019). For instance, Stice et al. (2017) saw the greatest rates of completion of the Body Project program among those using the web-based delivery method, compared to the in-person peer-led and clinician-led approaches. Räsänen et al. (2016) similarly noted that engagement in an intervention can be enhanced if information is presented in modalities other than text, such as audio narration and videos. Furthermore, interventions using technological modalities may be more cost-effective than those relying on in-person contact alone (Akers et al., 2017; Stice et al., 2017). Nonetheless, technological platforms often played a supplementary role to other intervention modalities, rather than used on their own. This suggests that while technology may improve access and facilitate student engagement, guided mental health support from trained individuals is important to achieving sustained positive outcomes. Indeed, despite favourable outcomes, both Stallman et al. (2016) (LI-CBT program) and Fitzsimmons-Craft et al. (2019) (HBI program) noted that web-based interventions cannot replace clinical care for high-risk individuals, who may need closer monitoring. As noted by Vasko et al. (2019), another challenge of implementing web-based interventions is the need for personnel and resources to troubleshoot technical issues.

Interventions tailored to university setting and student needs

Beyond the convenience of web-based programs described earlier, interventions were delivered within common university student settings, including classrooms (Boucher, 2016; Mc Sharry & Timmins, 2016; Rallis et al., 2018), residence halls (Turetsky & Sanderson, 2018), and hiking trails surrounding a campus (Bang et al., 2017), which represent areas of comfort and familiarity. The length and frequency of the intervention sessions accommodated the busy nature of student life. Many psychoeducational interventions featured a single group session (Boucher, 2016; Rallis et al., 2018; Turetsky & Sanderson, 2018), while others occurred once a week across a low-threshold commitment of four to seven weeks (Akeman et al., 2019; Akers et al., 2017, 2017; Bang et al., 2017; Mc Sharry & Timmins, 2016; Räsänen et al., 2016; Stice et al., 2017; Vasko et al., 2019). Stallman et al. (2016) noted that the number of LI-CBT sessions was not prescribed, but rather decided collaboratively between the facilitators and the students, depending on their needs. Flexible approaches may also enable sustaining intervention effects longitudinally. For instance, following the end of in-person intervention counselling sessions, Vasko et al. (2019) provided participants with the choice of having an additional telephone “booster” session. Overall, strategic planning around intervention timing and frequency during semester peak periods, when more stressors are present, may be necessary.

Several interventions were also tailored to specific student populations. The Body Project, for example, aimed to specifically make space for female students, as they are more likely to experience eating disorder symptoms (Akers et al., 2017; Stice et al., 2017). Syzdek et al. (2016) highlighted the importance of using non-stigmatizing gender-specific cognitive and linguistic strategies in MI interventions to characterize male distress and promote help-seeking for mood and anxiety issues. Gross et al. (2018) adapted the MAC intervention to female student athletes, recognizing the increased stress these students often experience due to the pressure to perform athletically and academically. Fitzsimmons-Craft et al. (2019) employed a risk-stratified approach, offering different alterations of the HBI intervention, depending on each individual’s eating disorder risk profile. Finally, a number of interventions specifically targeted students with subclinical or clinical mental health issues (Räsänen et al., 2016; Rohde et al., 2016; Stallman et al., 2016; Vasko et al., 2019).

Psychoeducation for outreach and mental health promotion

All but one study (Rohde et al., 2016) explicitly mentioned providing mental health education to participants, either as the predominant intervention or as an auxiliary component. These educational components sought to: (1) provide definitions of mental health, wellbeing, and mental illness; (2) train participants to recognize symptoms of mental ill health in themselves and others; and (3) discuss the myths and misconceptions around mental health and help-seeking in order to challenge the stigma associated with mental illness. This baseline psychoeducation was further tailored to target populations or specific outcomes of interest, including stress management and holistic wellbeing (Mc Sharry & Timmins, 2016; Gross et al., 2018), suicide prevention (Rallis et al., 2018), and healthy body image (Stice et al., 2017). In supplement to didactic education, students were often provided with a brochure of campus and community mental health resources (Akeman et al., 2019; Bang et al., 2017; Boucher, 2016; Rallis et al., 2018; Syzdek et al., 2016; Turetsky & Sanderson, 2018).

Practice elements from clinical psychology

Over half the interventions were grounded in clinical psychology approaches, either by directly employing them in intervention delivery or by indirectly using them to inform intervention theory and content. As discussed earlier, these approaches were often combined and modified from their standard clinical use in order to serve a preventive function and meet the specific needs of the student population at hand. Common approaches cited in the retrieved literature included CBT (Fitzsimmons-Craft et al., 2019; Rohde et al., 2016; Stallman et al., 2016), mindfulness (Akeman et al., 2019; Gross et al., 2018; Räsänen et al., 2016), MI (Mc Sharry & Timmins, 2016; Syzdek et al., 2016; Vasko et al., 2019), cognitive dissonance principles (Akers et al., 2017; Rohde et al., 2016; Stice et al., 2017), and behavioural activation (Vasko et al., 2019).

Building capacity and leveraging existing resources

Several studies reported on interventions that appeared to leverage existing university personnel and infrastructure. Over half the studies relied on graduate students and postdoctoral fellows in clinical psychology programs to facilitate the interventions (Akeman et al., 2019; Boucher, 2016; Gross et al., 2018; Rallis et al., 2018; Räsänen et al., 2016; Rohde et al., 2016; Stallman et al., 2016; Syzdek et al., 2016), while others employed trained undergraduate peer educators (Akers et al., 2017; Turetsky & Sanderson, 2018) who are from the student body at large and thus, might make intervention participants feel more at ease. Campus counselling services and mental health centers were also found to be crucial partners. The clinical personnel employed at campus services – typically counsellors and clinical psychologists – often either delivered the interventions themselves or trained graduate students and peer educators to facilitate them (Akers et al., 2017; Rohde et al., 2016; Stice et al., 2017; Vasko et al., 2019). As described previously, many interventions were adapted to serve specific student populations. In a number of studies, campus clinicians were tasked with adapting these interventions and developing protocols (Akeman et al., 2019; Rallis et al., 2018; Vasko et al., 2019). Campus mental health services are also well-equipped to promote the uptake of novel mental health initiatives among students, monitoring the safety of higher-risk students, and serving as the primary contact for external collaborators in mental health-related efforts (Fitzsimmons-Craft et al., 2019).

Jurisdictional Review

United Kingdom

The UK has expressed significant interest in addressing mental health and wellbeing on a population basis. For instance, in 2015, UK became the only jurisdiction in the world to recommend integrating mindfulness-based approaches throughout all sectors of public policy, including primary and secondary education, healthcare, the workplace, and the criminal justice system (The Mindfulness Initiative, 2015). The UK has made a sustained effort in supporting mental health in higher education. Legislation such as the *Special Education Needs and Disability Act (2001)* has compelled institutions to address mental health in the post-secondary setting (Royal College of Psychiatrists, 2011). The UK also established the Quality Assurance Agency for Higher Education (QAA) to audit and review higher education. As of 2001, the *QAA Code of Practice for the Assurance of Academic Quality and Standards in Higher Education* required higher education institutions to make active changes in their capacity to serve those with disabilities, including mental health.

Higher education bodies, such as Universities UK and the UK Healthy Universities Network, have taken a leadership role in the UK to support higher education institutions to meet these requirements. Universities UK is an organization representing the collective voice of 136 universities in England, Scotland, Wales, and Northern Ireland that maintains relationships with political parties and provides evidence to committees to influence policy (Universities U.K., n.d.). The UK Healthy Universities Network is led and funded by the by the University of Central Lancashire and Manchester Metropolitan University, and includes representatives from universities, higher education bodies and public health agencies from across the UK (Healthy Universities, n.d.). The Network's focus is on supporting institutions to identify and address priorities to promote healthy settings and advocate for a whole university approach. The whole university approach was informed by the health promotion frameworks including the Ottawa Charter, the Okanagan Charter for Health Promoting Universities and Colleges (2015), and the Healthy Universities framework (shown in Appendix C). The whole university approach is supported by Universities UK and is central to mental health initiatives in higher education institutions across the UK.

With overarching legislation and complementary frameworks from non-governmental organizations across the UK, countries within the UK have taken specific actions to address mental health in further and higher education settings.⁴ This section describes a selection of initiatives in England, Scotland, and Wales to provide insight into the role of government in supporting mental health in higher education institutions.

⁴ "Further" and "higher education" classifications differ in the UK and Canada. In the UK, colleges and universities are considered International Standard Classification of Education (ISCED) level 3 (upper secondary education) and 4 institutions (post-secondary and non-tertiary education), whereas in Canada, both colleges and universities are ISCED 4 institutions. UK colleges are separate institutions from lower secondary education institutions (ISCED level 2), or high schools in Canada. (UNESCO Institute for Statistics, 2012). Some of the initiatives included in this review are targeted at UK schools and colleges, and colleges and universities.

England

The National Health Service (NHS) England announced the *Five Year Forward View* in 2014 that committed to working towards more equal responses across mental and physical health, aiming to achieve parity by 2020 (Parkin, 2018). Following this in 2015, the Children and Young People's Mental Health and Wellbeing Taskforce produced the *Future in Mind* report that outlines recommended changes to the delivery of child and adolescent mental health services (NHS England & the Department of Health, 2015). Also in 2015, the Mental Health Taskforce was commissioned to produce an independent report, *The Five Year Forward View for Mental Health*, that made a series of recommendations for the non-governmental sector and government to improve mental health outcomes by 2020/2021, including increased access to mental health care, an integrated mental and physical health approach, and promoting good mental health through prevention strategies (Mental Health Taskforce, 2016; Parkin, 2018). To implement many of these recommendations, the government committed £1 billion by 2020/2021, which builds on the existing £280 million invested each year for children and young people's mental health and perinatal care (HM Government, 2017).

Several collaborations and partnerships have emerged like those between the NHS and higher education institutions, including the Oxford Student Mental Health Network described below and others listed in Appendix F. The taskforce recommendations have also led to several initiatives across England that target school and college settings, such as the Mental Health Service Schools and Colleges Link Programme, and Mental Health Leads and Teams.

Oxford Student Mental Health Network

In 2000, the Oxford Mental Health Network (OSMHN) was created to conduct research and development activities to promote and support mental wellbeing for students during their studies or for those entering further or higher education (Oxford Student Mental Health Network, 2017). The Higher Education Council for England funded the OSMHN for three years, which produced multiple reports on the mental health of students in higher education and conducted nine training workshops for various stakeholders (Oxford Student Mental Health Network, 2017). The OSMHN Student Mental Health Guide (2003) is a key resource published by the network that relays information about local treatment and support services for students and staff (Leach, 2003). The 2003 final report of activities revealed that mental health care professionals gained a greater understanding of the needs of students through OSMHN newsletters, website, and the OSMHN Student Mental Health Guide (2003) (Leach, 2003). They also reported that workshops allowed them to share and promote examples of good practice in prevention treatment and support in the field of student mental health.

After the initial three-year project, a steering group decided to maintain the partnership to continue improving communication and further an understanding of student mental health needs. This partnership includes local education institutions (Oxford Brookes University, the University of Oxford, and Oxford and Cherwell Valley College), health service providers, and trusts (Oxford City Primary Care Trust, and Oxfordshire and Buckinghamshire Mental Healthcare NHS Foundation Trust) to focus on student mental health issues in Oxford (Royal College of Psychiatrists, 2011). The partnership continues to provide a program of workshops and training for people who work with students in higher and further education institutions, health services, the voluntary sector and private practice. The workshops provide guidance on student mental health issues and tools to enable staff members to share their experiences and

knowledge. The OSMHN is staffed by a part-time coordinator, but additional funding information or outcome evaluations of the network are not reported after 2003.

Mental Health Service Schools and Colleges Link Programme

The Mental Health Services Schools and Colleges Link Programme (MHSSCLP) brings together education and mental health services under Clinical Commissioning (CCGs)⁵ to forge long-term collaboration with the aim of ensuring timely access to help for children and young people (*New mental health support in schools and colleges and faster access to NHS care*, n.d.). The Link Programme was developed by the Anna Freud National Centre for Children’s and Families (*New mental health support in schools and colleges and faster access to NHS care*, n.d.) in response to the *Future in Mind* report (Day et al., 2017), and is funded by the Department of Education and supported by NHS England. The program educates staff to detect signs of student distress and how to link students to effective support teams. Staff undergo two full-day workshops held six weeks apart delivered by NHS specialist staff (Anna Freud National Centre for Children and Families, n.d.a).

Between 2015-2016, pilot programs were implemented in 22 areas (27 CCGs and 255 colleges and schools) to establish lead contacts with NHS Children and Youth Mental Health Services (CYMHS) and schools (Day et al., 2017). NHS England provided £50,000 of funding per CCG for NHS specialist staff involvement in training (Day et al., 2017) and CCGs were expected to match this funding. NHS England also provided £3,500 per school to cover staff time while attending the workshop. Success during the pilot led to additional workshops for 1,200 schools and colleges where some CCGs secured additional funding to scale up the program.

An independent assessment of the original 255 colleges and schools indicated the pilot program’s success, reporting: (1) “strengthened communication and joint-working between schools and NHS children and young people’s mental health services”; (2) “increased satisfaction with working relationships”; (3) “improved understanding of mental health services and referral routes”; (4) “improved knowledge and awareness of mental health issues among school lead contacts”; and, (5) “improved timeliness and appropriateness of referrals” (Anna Freud National Centre for Children and Families, n.d.b; Day et al., 2017). As a result, the program was scaled up to over 3,000 schools and colleges in 2017-2019.

Senior Mental Health Leads & Mental Health Support Teams

In 2017, the Department of Health and Department of Education produced the *Transforming Children and Young People’s Mental Health Provision* Green Paper, which introduced three initiatives to “support local areas to adopt new collaborative approaches to provide children and young people with support to tackle early signs of mental health issues” (Department of Health & Department for Education, 2017). These included, (1) incentivizing schools and colleges to identify a Designated Senior Lead for Mental Health; (2) funding Mental Health Support Teams (MHSTs); and (3) a trial for a four-week waiting time for access to

⁵ Clinical Commissioning Groups (CCGs) are clinically led statutory NHS bodies responsible for the planning and commissioning of health care services for their local area. CCGs are membership bodies, with local GP practices as the members, led by an elected governing body comprising GPs, other clinicians, and lay members. They are responsible for approximately two thirds of the total NHS England budget (NHS Clinical Commissioners, 2019).

mental health specialists for children and young people. The first two initiatives are intended to work together, as Mental Health Leads would be the primary point of contact for MHSTs.

The Senior Mental Health Leads project was piloted and deemed successful by strengthening communication and joint working arrangements between schools and mental health services (Department of Health & Department for Education, 2017). As well, they reported specific improvements in understanding of referral routes, improved knowledge and awareness of mental health issues among school leads, and improved timeliness and appropriateness of referrals. The NHS intends to fund the cost of training programs up to £15- 20 million each year from 2019 until all schools and colleges have trained a lead (Department of Health & Department for Education, 2017).

MHSTs are currently being implemented in a phased approach, with the first expected to be operational by December 2019 (The British Psychological Society, 2019). The MHST will consist of a team manager, a supervisor, four Education Mental Health Providers, and administrative staff that delivers evidence-based psychological interventions in or close to schools or colleges (The British Psychological Society, 2019). Leads and MHSTs will then work together to achieve a whole-school approach (Day et al., 2017). MHSTs are funded by CCGs at £360,000 per annum per team, with additional funding for higher cost areas (The British Psychological Society, 2019). Additional funding for training includes an additional £9.3 million in July 2019 to support the education of staff (The British Psychological Society, 2019). The NHS confirmed that 123 MHST will start developing in 2020 and they expect to have MHSTs rolled out across 20%-25% of England by 2022-2023 (House of Commons Committee of Public Accounts, 2018).

Scotland

The *Children and Young People (Scotland) Act 2014* includes key parts of the Getting it Right for Every Child (GIRFEC) approach, which has been the national strategy for improving outcomes and supporting the wellbeing of children and young people since 2006 (Scottish Government, 2018). More recently, the Scottish government introduced the *Mental Health Strategy 2017-2027* to “improve prevention and early intervention, service accessibility, the physical wellbeing of people with mental health problems, and rights, information use and planning” (Scottish Government, 2017). Addressing mental health within higher education settings was listed as an action item, specifically to further develop the “Think Positive” project, led by the National Union of Students (NUS) to ensure consistent support for students across Scotland. The 2018 *Programme for Government* then announced new investment of about £20 million over four years to provide more than 80 new mental health counsellors for further and higher education institutions (Scottish Funding Council, 2018). Think Positive and the addition of mental health counsellors are described below in more detail as examples of government support in Scotland.

Think Positive

Think Positive is the National Union of Students (NUS) mental health project that aims to support students experiencing mental ill-health, reduce mental health-related stigma and discrimination, and promote wellbeing within higher and further education (Think Positive, n.d.). The Student Mental Health Agreement (SMHA) is the core activity of Think Positive, which formalizes the partnership and commitment of student associations to jointly address mental health issues (Think Positive, n.d.). This initiative encourages institution staff to review their mental health policies and staff training, and consider improvements to mental health care service access for students. Five key areas of focus include a review

of mental health work to date, looking at joint priorities and goals, agreed upon actions, tracking progress, and conducting evaluations. The Scottish Funding Council includes Think Positive in their Outcome Agreement Guidance to institutions.

The Scottish Government announced £251,530 of funding for NUS Scotland in March 2018 to support the SMHA project (Scottish Government, 2019). An additional £36,000 was provided for 2019 to hire a full-time officer to expand student mental health agreements and ultimately support the Think Positive program. A record number of institutions signed up to participate in the project from 2017-2018, resulting in 25 institutions benefiting from the SMHA agreements created through the program. The additional funding is intended to help increase this number.

Mental Health Counsellors

The funding announcement for hiring 80 new mental health counsellors for colleges and universities across Scotland over four years was outlined in the Scottish Government's Programme for Government *Delivering for today, investing for tomorrow: The Government's programme for Scotland*. In addition to the 4-year £20 million investment, institutions will receive more than £3.6 million in 2019 to support the implementation of counsellors and an additional £100,000 has been allocated to the Scottish Funding Council to support the initiative over the next two years (Scottish Government, 2019) and monitor its impact (Scottish Funding Council, 2018).

The initiative is still in its initial phases as research is being conducted to find how many student counsellors are currently employed in colleges and universities to establish baselines and the amount of currently unmet demand for student counsellors (Scottish Funding Council, 2018). As well, new terms in the University-Government agreements ("University Outcome Agreement Guidance") requires all institutions to have explicitly stated mental health strategies and policies for staff and students and promote the involvement of Scotland's NUS Think Positive campaign as a prerequisite for this funding. The strategy must outline the investment on mental health, details about support services available to staff and students, an explanation of collaboration with other further and higher education institutions, and impact measurements for their mental health supports (Scottish Funding Council, 2018). A recent news article published in September 2019 reported that NUS Scotland has called on the Scottish Government to fulfill its promise of establishing 80 new professional counsellors (Bell, 2019), indicating that the additional counsellors have yet to be integrated in colleges and schools.

Wales

National wellbeing policies and strategies, such as *The Social Services and Wellbeing Act (Wales) 2014* and the 10-year mental wellbeing strategy *Together for Mental Health (2012)*, highlight the importance of preventive, evidence-based and multisectoral interventions (The Welsh NHS Confederation, 2017) like stress control, mindfulness, and Acceptance and Commitment Therapy (ACT) programs (National Psychological Therapies Management Committee, 2017). Being less resource-intensive and reaching a large audience, these interventions may also ameliorate capacity for other mental health programs or clinical support (National Psychological Therapies Management Committee, 2017).

Specific to the university context, Welsh Government groups have established a context-specific framework that encompasses mental wellbeing and supports programming through funding. Recently,

the Welsh Government announced £2 million in new funding for institution-wide initiatives allocated through the Higher Education Funding Council for Wales (Public Health Network CYMRU, 2019).

Healthy and Sustainable Higher Education/Further Education Framework

The Welsh Network of Health School Schemes (WNHSS) launched in 1999 to encourage the development of local healthy school schemes within a national framework and has been implemented across Wales since 2000 (Public Health Network Cymru, n.d.). Each local scheme is responsible for the development of health promotion in schools within their area and are accredited by the Welsh Government. In 2015, the WNHSS was extended into higher education and further education (HE/FE) settings to develop and implement a “whole university” approach to health, wellbeing and sustainability (Public Health Wales, 2019).

The framework is grounded by the principles of the *Well-being of Future Generations (Wales) Act 2015* and works in harmony with the UK Healthy Universities Network. The HE/FE framework encompasses six health topics and four aspects of college and university life. Health topics include: (1) mental and emotional health and wellbeing, (2) physical activity, (3) healthy and sustainable food, (4) substance use and misuse, (5) personal and sexual health and relationships, and (6) sustainable environments. Aspects of college and university life include (1) governance, leadership, and management, (2) facilities, environment, and service provision, (3) community and communication, and (4) academic, personal, social, and professional development (NHS Wales, 2019). The HE/FE framework document sets out criteria for institutions to complete a self-assessment and identify which health topics and aspects of life and work to further focus on (Public Health Wales, 2019) and the main task of the Healthy Universities and Colleges network group will be to implement the framework across institutions.

ACTivate Your Life

ACTivate Your Life (AYL) is an example of a low resource, early intervention program with adoption in the university setting. Developed by Professor Neil Frude and started in 2012, AYL is a four-week group psychoeducation course that aims to help individuals become more psychologically flexible by dealing with a range of emotional issues, including anxiety, stress, lack of motivation, depression, and self-confidence. The course uses some of the fundamental ideas and basic therapeutic strategies of ACT presented by trained NHS health professionals and staff. AYL is applicable to everyone and has been adapted to specific audiences, including AYL-At University, AYL-After Stroke, AYL-Affected by Cancer, AYL-Power and Control, and more. Approximately 8,000 individuals have participated in the course delivered by five of seven health boards (Aneurin Bevan Health Board, Cardiff and Vale University Health Board, Hywel Dda University Health Board, Powys Teaching Health Board, and Swansea Bay Health Board,⁶). In the university setting, AYL was piloted at Aberystwyth University in 2017 (Aberystwyth University, 2017) and the AYL-At University version has been used in Exeter University, Cardiff University, Cardiff Metropolitan University, and Swansea University, and next year at the University of South Wales (N. Frude, personal communication, November 29, 2019).

Evaluations are not integrated or universal across health boards, but evaluations conducted have demonstrated high effect sizes and positive testimonials from course participants (Aneurin Bevan

⁶ formerly Abertawe Bro Morgannwg University (ABMU) Health Board.

University Health Board, 2019; Tenovus Cancer Care, 2019). An analysis of AYL delivered within the former Abertawe Bro Morgannwg University Health Board indicated that participants' scores across depression, anxiety, self-esteem, life satisfaction, mindfulness, self-efficacy, and psychological flexibility showed highly significant improvements (Cartwright & Hooper, 2017).

Australia

Until recently, there has been limited attention paid to mental health in higher education settings in Australia despite its leadership in youth mental health policy. Mental health investment from federal, state and territory governments in educational settings has historically targeted students and teachers in primary and secondary education systems (Orygen, 2017).

Limited research and national data⁷ about the nature, prevalence and experience of mental ill-health among Australian university students, and a growing need to address mental wellness in these settings, contributed to two notable publications: *The Wicked Problem of University Student Mental Health* (Veness, 2016), which provides recommendations for action based on international examples; and *Under the Radar: The mental health of Australian university students*, which was created by the National Centre of Excellence in Youth Mental Health (Orygen) in 2017. The *Under the Radar* report suggests that lacking government action “has impacted on the capacity for both university and the mental health sectors to effectively respond to the needs of this group.” Some universities have either developed, or are developing, independent institutional mental health policies with limited resources and without national guidelines (Orygen, 2017), resulting in few developing a whole-of-institution⁸ response (Browne et al., 2017). With the high demand for campus counselling and disability services, universities and third-parties have also developed programs to respond to mental health issues on campus, like awareness raising and anti-stigma programs, mental health and mindfulness training, using online portals, and peer-based support programs (Browne et al., 2017).

Since then, the Australian Government announced an additional \$110 million investment for child and youth mental health in 2018, including *Orygen* National Centre of Excellence in Youth Mental Health and *headspace* National Youth Mental Health Foundation (Parliament of Australia, 2018). Funding to Orygen will contribute to establishing a national University Mental Health Framework, described below. As well, the Medical Research Future Fund⁹ is providing \$125 million over 10 years from 2018-19 for the *Million Minds Mental Health Research Mission* to foster innovation in mental health access, prevention, diagnosis, treatment, and recovery (Department of Health, 2019). The Enhancing Student Wellbeing Project and *headspace* are also provided as examples of initiatives that contribute to university student wellbeing.

⁷ The National Child and Adolescent Mental Health and Wellbeing survey only collects data from young people under 17 (Orygen, 2017).

⁸ The “whole-of-institution” approach is used interchangeably with “whole university” approach.

⁹ The Medical Research Future Fund is a \$20 billion long-term investment supporting Australian health and medical research (Department of Health, 2019).

The Australian University Mental Health Framework

The Australian University Mental Health Framework brings together all relevant stakeholders in order to effectively address the problem of student mental health. Stakeholder consultations are underway, and the framework is expected to be completed in the summer of 2020. Universities Australia, the voice of Australia's Universities, is among the many stakeholders involved with consultations for framework development (Universities Australia, 2018). Expected outcomes of the framework include improved care and access to mental health services, better identification, integration and coordination of support services, co-creation of learning environments conducive to good mental health, improved data collection, evaluation and adaptation across all stages of mental health and ill-health, a reduced percentage of students leaving and considering early course exit due to mental ill-health, and an increased number of students accessing interventions early (Orygen, n.d.).

Enhancing Student Wellbeing Project

The Enhancing Student Wellbeing Project offers various resources for university educators to build capacity for creating teaching and learning environments that enhance student mental wellbeing (Enhancing Student Wellbeing, n.d.). The three main projects from the group include a framework for developing a whole-of-institution approach to enhancing student wellbeing, online professional development modules for academic teachers, and a national symposium that was held in 2016 on student mental wellbeing.

The *Framework for Enhancing Student Wellbeing* was developed in partnership between Melbourne University, Queensland University of Technology and Latrobe University as a whole-institution policy response. The framework utilizes notable blueprints for health promotion such as the Ottawa Charter for Health Promotion, Healthy Universities in the UK and Mindmatters.¹⁰ Higher education researchers, mental health experts, institutional leaders, and academic and professional staff from 13 universities were consulted for feedback and development (Enhancing Student Wellbeing, 2016). The Royal Melbourne Institute of Technology (RMIT) adopted this and appointed a project manager and student mental wellbeing initiatives to implement the framework over three years.

Headspace

Headspace, Australia's National Youth Mental Health Foundation, aims to promote and support early intervention for young people with mental and substance use disorders by improving access and service cohesion through a holistic approach (headspace, 2019). Headspace is comprised of centres (a one-stop-shop to access support for mental health, physical health, substance-use, work, and studies), schools (support and partnership with education and health sectors), vocational services (study and work programs), eheadspace (national online and phone support service), a national telehealth service (provides access to psychiatrists via video consultations), early psychosis program, and numerous campaigns (headspace, n.d). Although a headspace centre is located on the University of Canberra campus, these programs are intended for the wider community of youth aged 12-25 years. The principal source of funding is the Commonwealth of Australia through the Department of Health (headspace, 2019), and they also have numerous corporate partnerships that may fund new programs or program expansion.

¹⁰ Mindmatters is a nation-wide initiative focused specifically on mental health in Australian secondary schools.

A recently published headspace centre impact evaluation reports that the majority of young people had positive outcomes from their time at headspace and attributed positive outcomes to their headspace experience. Youth also showed a significant reduction in levels of psychological distress and improved quality of life, reduced impact of their mental health on their lives, increased confidence, and improved social and vocational functioning (headspace, 2019). The success of headspace programs has resulted in continued and expanded funding from the government.

Conclusions

Summary of Principal Findings

Student mental health is a growing concern among post-secondary institutions across OECD jurisdictions. In this rapid review we sought to understand (1) what post-secondary institutions are doing to improve and promote student wellbeing and prevent mental ill-health, including emerging best practices, and (2) how governments can support post-secondary institutions in these efforts. This review identified 15 recent scholarly studies of mental health interventions across post-secondary institutions in the US, Australia, Finland, and South Korea that showed a significant and sustained positive impact, and explored publicly available information on promising initiatives in the UK and Australia. The majority of these reviewed programs focused on common student mental health concerns, such as anxiety and mood disorders, or employed a holistic view of mental health and wellbeing.

We observed that efforts tended to be initiated and led by institutions with limited evidence of government involvement at the early stages. Local government-mandated special councils and task forces on population mental health were, however, instrumental in scaling up and disseminating promising evidence-supported interventions beyond their pilot sites by engaging higher-level education and government officials (e.g., university chancellors, federal government decision-makers) and providing funding for wider implementation. Non-profit organizations with a special interest in mental health often co-funded these efforts and helped bring promising pilot interventions to the government agenda.

Governments also developed overarching strategies, policies, and frameworks that outlined responsibilities, aligned priorities, and defined standards for student mental health promotion efforts across stakeholders; facilitated partnerships within post-secondary institutions (“networks”), to enable collaboration and knowledge sharing, and between post-secondary institutions and community-based services, to leverage clinical and case-management expertise; and supported routine monitoring of mental health and wellbeing outcomes to evaluate the performance of policies and programs.

Emerging Recommendations

We highlight nine emerging practices common to programs that have shown promise and impact. Universities and governments may consider these practices when implementing interventions to effectively support student mental health:

- 1. Whole-university approach:** The goal of mental health promotion and wellbeing should be an explicit component of all university activities, including institutional “policies, actions, and even physical space” (Ng & Padjen, 2019), to align cross-departmental priorities, reduce duplication, and improve outcomes at multiple levels (individual, group, campus, community, society).
- 2. Standards and evaluation:** Given the fragmented and pilot-driven landscape of mental health initiatives in universities, performance standards may help align best practices. Frameworks developed in consultation with stakeholders, including governments, university officials, students, and non-profit organizations may help outline outcomes of mutual interest. Embedded

ongoing evaluation is also needed to determine the long-term impact of promising interventions.¹¹

3. **Use of technology and multi-modal approaches:** The use of computer and mobile technologies can improve access and student engagement, increase uptake, and potentially be cost-effective. In higher-risk groups, technologies should supplement, as individualized case management and clinical supervision remain central.
4. **Interventions tailored to university setting:** To bolster student recruitment and retention in mental health initiatives, intervention design should accommodate the realities of student life (e.g., embedding interventions in classrooms and residence halls, flexibility in frequency and timing of sessions) and student body diversity (e.g., recognizing the unique challenges faced by first-year students, first-generation students, and those from socially marginalized backgrounds).
5. **Risk-stratified intervention approaches:** Stratifying interventions by risk level may present the optimal match between resources and need – low-resource universal approaches may be effective for preventive and health promotion efforts, while higher-resource targeted approaches may be warranted for students with subclinical or diagnosed mental health issues.
6. **Psychoeducation for outreach and mental health promotion:** Brief didactic psychoeducational intervention components may help improve student mental health literacy, teach students to recognize warning symptoms in themselves and their peers, challenge mental health stigma, and promote campus resources to enable help-seeking.
7. **Practice elements from clinical psychology:** Adapting clinical psychology practice elements (e.g., CBT, mindfulness, MI, cognitive dissonance, and behavioural activation) appears to be effective for preventive purposes in both healthy and subclinical/clinical student populations.
8. **Building capacity and leveraging existing university resources:** In resource-strained contexts, students (e.g., undergraduate peer educators, clinical psychology doctoral candidates) can be trained to deliver intervention protocols. On-campus mental health and counselling services are essential in developing tailored interventions, training student facilitators, and monitoring intervention delivery and ensuring student safety.
9. **Forming external partnerships:** Networks of post-secondary institutions may enable knowledge-sharing and collaborative efforts towards establishing best practices. Pursuing partnerships with community-based health and social services, well-equipped with the infrastructure and clinical expertise to manage complex cases, may help universities provide streamlined access for higher-risk students requiring care, as well as enable long-term follow-up after degree completion.

It is of note that in the reviewed literature, the nine identified practices were implemented in tandem, suggesting that adopting a single component may be insufficient for achieving positive impacts on student mental health and wellbeing. For instance, risk-stratified approaches may involve universal psychoeducational interventions in lower-risk and non-clinical student populations, and clinical psychology practice elements in higher-risk subclinical and clinical student populations. Interventions may be embedded in naturalistic university settings and delivered by computer and mobile technology or

¹¹ Studies that were not evaluative and that did not demonstrate positive outcomes beyond intervention end (n = 49) were not discussed in the analytic overview.

trained peers, with engagement from on-campus health and counselling services to develop intervention protocols, train peers, and monitor outcomes. Highest-risk individuals could be connected with community-based partners for additional support.

Canadian Context and Future Directions

Overall, there is a paucity of comprehensive policies in Canadian post-secondary settings to support student mental health and wellbeing. The 2016 Canadian National College Health Assessment, which surveyed post-secondary students across 41 institutions nation-wide, found that fragmented services, limited funding, and high-resource needs were cited among the top priority concerns (ACHA National College Health Assessment II, 2016). A 2017 survey of 180 publicly funded Canadian post-secondary institutions found that only half had campus-wide mental health initiatives, with less than a quarter having undergone evaluation to determine whether they were meeting objectives, and a little over a quarter having policies in place for collecting and sharing mental health data (De Somma et al., 2017). Furthermore, enhancing health promotion and outreach programs, particularly those delivered by peers, developing mechanisms for students to self-identify as needing mental health support, and implementing formal policies enabling community referrals were identified as areas of particular interest and need (Jaworska et al., 2016).

Among Canadian provinces, Alberta and Ontario appear to have most progressed towards addressing post-secondary student mental health. In 2016, Alberta established a multidisciplinary Advisory Panel on Post-Secondary Mental Health, though its impact is unclear (De Somma et al., 2017; Government of Alberta, 2016). With funding from the Mental Health Innovation Fund (MHIF), in 2013, Ontario established the Centre for Innovation in Campus Mental Health (CICMH), mandated to serve “as a repository of best, promising, and emerging practices,” enabling knowledge-sharing through partnerships between Ontario post-secondary institutions (De Somma et al., 2017; Ng & Padjen, 2019). The centre has since received extended funding from the Ontario Ministry of Training, Colleges, and Universities (Ng & Padjen, 2019).

Recently, the CICMH repository outlined “Stepped Care” as a promising approach for organizing mental health services in post-secondary institutions. Originating from the UK primary care setting, Stepped Care is an evidence-based risk-stratified system “of delivering and monitoring mental health treatment so that the most effective, yet least resource intensive treatment, is delivered first, only ‘stepping up’ to intensive/specialist services as required and depending on the level of patient distress or need” (Aherne, 2013; Centre for Innovation in Campus Mental Health, 2020; Von Korff & Tiemens, 2000). While Stepped Care has not yet been evaluated in the post-secondary setting, Canadian universities, such as Memorial University (Newfoundland) and the University of New Brunswick (New Brunswick), have expressed interest. Following the recent independent Presidential and Provostial Task Force on Student Mental Health report (University of Toronto, 2019), the University of Toronto (Ontario) announced in January 2020 its intention to work toward implementing this model as well (Vendeville, 2020). The university also announced a new partnership with the Centre for Addiction and Mental Health (CAMH), a large psychiatric teaching hospital, to, among other aims, create care pathways between campus-based mental health services and CAMH and to provide experiential learning opportunities for students in clinical disciplines (Vendeville, 2020).

Our findings regarding best practices in international contexts are in line with the recent university-led efforts in Ontario. The MHIF fund and the CICMH repository may provide avenues for government actors to more actively support university-led efforts. Similar to the Missouri Eating Disorders Council in the US and the Healthy Universities Network in the UK, the CICMH may help secure funding for pilot interventions, scale up promising interventions across multiple universities, and support their ongoing evaluation to understand long-term impacts and elucidate best practices. The anticipated shift to performance-based funding in Ontario in 2020, which would tie the public share of university funding to achievement of outcomes related to economic impact and innovation (Ministry of Finance, 2019), may also provide an opportunity to improve university accountability in addressing student mental health (Sorensen, 2019). While selection of outcomes and performance standards has been subject to debate (The Canadian Press, 2019), representatives of student groups, such as the Ontario Undergraduate Student Alliance (OUSA), have suggested taking into account university programming related to student experience, including availability of mental health resources (Gerrits, 2019). Similar ideas emerged from the 2015 Ontario Ministry of Training, Colleges and Universities' open consultations on university funding reform with university representatives, faculty, and students, where student mental health programming was seen as conducive to student success but was lacking in resources and support (Ministry of Training, Colleges and Universities, 2015).

Beyond optimizing university-led efforts through government support, comprehensive mental health strategies may be necessary to ensure the wellbeing of young adults prior to entering post-secondary institutions and upon entering the workforce. In 2011, the Ontario Ministry of Health and Long-Term Care launched a 10-year provincial mental health and addictions strategy, *Open Minds, Healthy Minds*, aimed at providing timely, high-quality, integrated, and person-centered mental health services. Though the strategy included plans to implement early detection and referral protocols in primary and secondary schools, as well as to scale up workplace stress reduction and counselling services (MOHLTC, 2011), similar efforts in post-secondary settings were not specified. A wider-reaching plan was unveiled in the UK in 2015, as it became the first jurisdiction globally to aim to integrate mindfulness-based practices throughout all sectors of public policy, including primary and secondary education, healthcare, the workplace, and the criminal justice system (The Mindfulness Initiative, 2015). Formally including post-secondary institutions in these efforts is important given the significant risk of mental illness in young adults (Ontario College Health Association, 2009). Comprehensive whole-of-government approaches may hold promise, as addressing mental health across all public sectors reflects both a life course and health-in-all perspective (Pan American Health Organization, 2016; Tonelli et al., 2020).

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Appendix A: Detailed Scoping Review Methodology

Rapid Scoping Review

We followed the steps outlined by the methodological framework for scoping reviews originally articulated by Arksey and O'Malley (2005) and expanded by Levac, Colquhoun, and O'Brien (2010). After developing our research question (step 1), we identified the relevant studies using a rigorous electronic database search strategy (step 2), performed study selection against the eligibility criteria (step 3), charted the data (step 4), and collated, summarized, and reported the results (step 5), as discussed below. We adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Extension for Scoping Reviews (PRISMA-ScR) reporting guidelines (Tricco et al., 2018).

Information sources

Published studies were identified by searching MEDLINE (Ovid), PsycINFO (Ovid), and ProQuest using a combination of database-specific syntax (e.g. Medical Subject Headings, MeSH) and text-words related to the following concepts: (1) government and public policy, (2) mental health, and (3) post-secondary education. The following limits were applied to the search strings: publication year 2016-2019, English-language, and human subjects. The database search was first developed in Medline and subsequently translated into other database-specific syntax. All final electronic database searches were conducted and exported on November 13, 2019. The full electronic database search strategy is available in Appendix B. To ensure literature saturation, the database search was supplemented by handsearching reference lists of the included studies and snowballing techniques.

Study selection process

Records were imported from each electronic database into a web-based systematic review management software, Covidence (www.covidence.org) to remove duplicate citations and facilitate screening. Citations were divided among six reviewers (DB, HM, MK, MR, MMV, SN) for title and abstract screening. The titles and abstracts of citations whose eligibility was uncertain (rated "maybe") were passed to full-text review. Full-text articles were then reviewed in duplicate by a pair of independent reviewers (two of DB, HM, MMV, SN). Disagreements regarding exclusion reasons were resolved through tie-breaking by one of three team members (DB, HM, MR). As recommended by the Cochrane Collaboration Handbook for Systematic Reviews of Interventions (Higgins JPT, Green S, 2011), disagreements on study eligibility (< 20% of the screened sample) were discussed with the study team and eligibility decisions were made by consensus.

Studies were excluded if they met at least one of the following criteria: (1) the study did not describe or evaluate an intervention, policy, or program; (2) the intervention, policy, or program was unrelated to the goal of promoting mental health and wellbeing; (3) the target population of the intervention did not include post-secondary students and the intervention setting did not include post-secondary institutions; (4) the study jurisdiction was not part of the Organization for Economic Cooperation and Development (OECD); (5) the study did not present a complete evaluation; (6) the study did not report a significant

positive intervention effect on at least one pre-specified outcome; (7) the study did not report a sustained effect on at least one pre-specified outcome, defined as a significant positive effect that persisted for any length of follow-up time, after the intervention has been completed; (8) the publication type was a book or a conference abstract; (9) the full-text of the source was not accessible through the University of Toronto library or could not be located.

No restrictions were placed on study design, meaning that qualitative, quantitative, and mixed methods studies were eligible provided they met the criteria above. We also did not exclude literature reviews, although following the selection procedures described above, no literature reviews were included. We also included unpublished thesis dissertations to capture recent interventions, whose evaluations may not have yet been published in peer-reviewed journals. The detailed selection process is presented in the PRISMA flow diagram in Appendix C.

Data extraction and synthesis

Data extraction was completed by four reviewers (DB, HM, MMV, SN). Data items included the description of the intervention, policy, or program of interest; associated funding, implementation and governance mechanisms; intervention jurisdiction or setting; study design and methodology; target population characteristics; and intervention impacts on outcomes. The detailed information on interventions identified is available in Appendix D.

Two researchers (DB, HM) collated and reviewed thoroughly the extracted data, prior to beginning thematic analysis. Data were charted and grouped according to the most salient intervention features, including implementation stage, prevention level, intervention focus, practice elements used, and delivery processes.

- *Implementation stage* was determined based on the number of post-secondary sites delivering the intervention (one vs. ≥ 2) and whether the intervention was described by the authors to be experimental or a pilot.
- *Prevention level* was categorized according to Gordon's (1983) classification system for disease prevention (universal vs. selective vs. indicated), which has been adapted for use with preventive mental health interventions (Institute of Medicine, 1994). Universal programs are offered to the general population, regardless of risk level; selective programs are offered to a subset of the population at increased risk of the condition; and indicated programs are offered to subclinical or clinical population subgroups to prevent further symptom progression.
- *Intervention focus* was categorized according to the mental health problem area addressed by the intervention, as specified in the objectives, hypotheses, or intended outcomes of the study.
- *Practice elements* embedded in the interventions were identified under the guidance of the PracticeWise Clinical Coding System – a classification system for evidence-based mental health protocols in children and youth (PracticeWise, 2012). We adapted the PracticeWise items similar to prior studies on preventive programs in youths (Boustani et al., 2015; Chorpita & Daleiden, 2009; Rith-Najarian et al., 2019).
- *Delivery processes* were categorized according to the modes of administering the intervention, including in a group (e.g., workshop), individually (e.g., one-on-one counselling), self-administered (e.g., self-help resources), administered by peers (e.g., trained peer educators), and administered using technology (e.g., web-based modules).

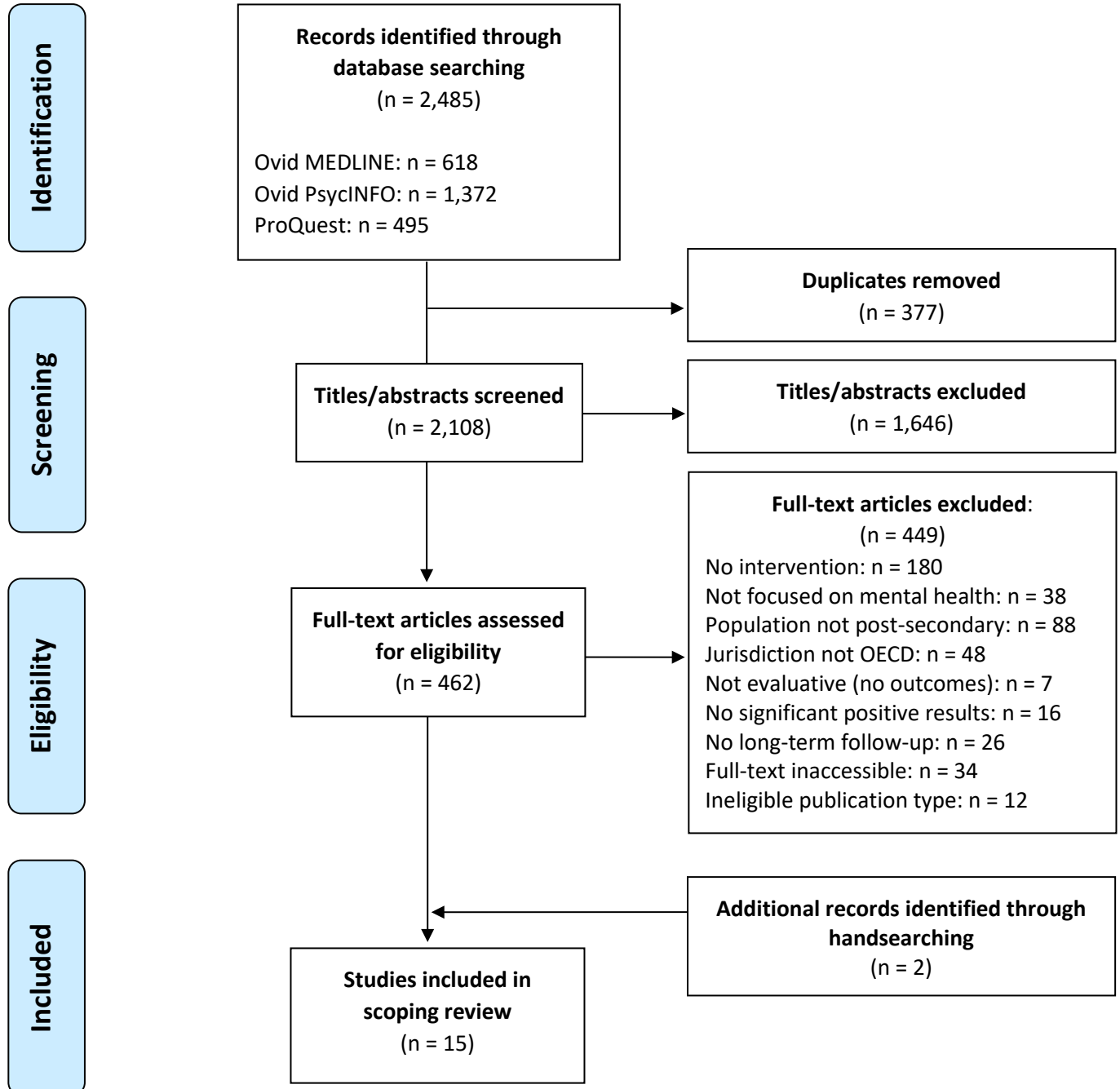
The researchers then grouped intervention features into “best practices” based on whether they appeared to be conducive to positive outcomes, as stated by study authors. The identified best practices were consolidated following discussion with the study team (DB, HM, MR, SA).

Appendix B: Electronic Database Search Strategy

SEARCH	SYNTAX	RESULTS
Ovid MEDLINE (n = 618)	<ol style="list-style-type: none"> 1. ((legislat* or policy or policies or law or laws or legal* or govern* or "public sector" or "private sector" or ministr* or program* or interven* or initiat* or act or promot* or prevent*) adj5 ((mental* or psych*) adj2 (wellbeing or well-being or "well being" or wellness or health* or fitness or ill or illness* or condition* or symptom* or disease* or diagnos*))).tw,kf. 2. exp Government/ or exp Government Programs/ or exp Policy/ or exp Public Policy/ or exp Public Health/ 3. exp Mental Health/ or exp Mental Disorders/ or exp Social Problems/ 4. exp Universities/ 5. (universit* or colleg* or ((post secondar* or post-secondar* or postsecondar* or undergrad* or under grad* or under-grad* or grad or grads or graduate or graduates or postgrad* or post grad* or post-grad* or tertiary or profession* or vocation* or occupat* or high*) adj2 (school* or education* or learn* or training or trainings or trained or institut* or student* or trainee*))).tw,kf 6. 2 and 3 7. 1 or 6 8. 4 or 5 9. 7 and 8 10. limit 9 to (English language and humans and yr="2016-Current") 	<p>25,010</p> <p>356,492</p> <p>1,444,344</p> <p>39,115</p> <p>567,037</p> <p>36,682</p> <p>60,303</p> <p>577,682</p> <p>3,180</p> <p>618</p>
Ovid PsycINFO (n = 1,372)	<ol style="list-style-type: none"> 1. ((legislat* or policy or policies or law or laws or legal* or govern* or "public sector" or "private sector" or ministr* or program* or interven* or initiat* or act or promot* or prevent*) adj5 ((mental or psych*) adj2 (wellbeing or well-being or "well being" or wellness or health* or fitness or ill or illness* or condition* or symptom* or disease* or diagnos*))).ti,ab 2. exp public sector/ or exp policy making/ or exp public health/ or exp health promotion/ or exp prevention/ 3. exp mental health/ or exp well being/ or exp mental disorders/ 4. exp mental health services/ or exp mental health programs/ or exp mental health program evaluation/ 5. exp colleges/ or exp higher education/ 6. (universit* or colleg* or ((post secondar* or post-secondar* or postsecondar* or undergrad* or under grad* or under-grad* or grad or grads or graduate or graduates or postgrad* or post grad* or post-grad* or tertiary or profession* or vocation* or occupat* or high*) adj2 (school* or education* or learn* or training or trainings or trained or institut* or student* or trainee*))).ti,ab. 7. 2 and 3 8. 1 or 4 or 7 9. 5 or 6 10. 8 and 9 11. limit 10 to (English language and humans and yr="2016-Current") 	<p>31,905</p> <p>184,331</p> <p>909,760</p> <p>50,846</p> <p>67,268</p> <p>418,265</p> <p>33,570</p> <p>100,854</p> <p>441,384</p> <p>8,511</p> <p>1,372</p>
ProQuest (n = 495)	((ab((legislat* OR policy OR policies OR law OR laws OR legal* OR govern* OR "public sector" OR "private sector" OR ministr* OR program* OR interven* OR initiat* OR act OR promot* OR prevent*) AND ((mental* OR psych*) NEAR/2 (wellbeing OR well-being OR "well being" OR wellness OR health* OR fitness OR ill OR illness* OR condition* OR symptom* OR disease* OR diagnos*))) AND ab(universit* OR colleg* OR ("post secondary" OR post-secondar* OR postsecondar* OR undergrad* OR "under grad" OR "under graduate" OR "under graduates" OR under-grad* OR grad OR grads OR graduate OR graduates OR postgrad* OR "post grad" OR "post graduate" OR "post graduates" OR post-grad* OR tertiary OR profession* OR vocation* OR occupat* OR high*) NEAR/2	495

(school* OR education* OR learn* OR training OR trainings OR trained OR institut* OR student* OR trainee*)) AND stype.exact("Standards & Practice Guidelines" OR "Encyclopedias & Reference Works" OR "Government & Official Publications" OR "Reports" OR "Working Papers" OR "Scholarly Journals") AND at.exact("Book Chapter" OR "Research Topic" OR "Letter To The Editor" OR "Annual Report" OR "Dissertation/Thesis" OR "Government & Official Document" OR "Working Paper/Pre-Print" OR "Literature Review" OR "Correction/Retraction" OR "Editorial" OR "Conference Paper" OR "Book" OR "Conference" OR "Technical Report" OR "Evidence Based Healthcare" OR "Report" OR "Statistics/Data Report" OR "Review" OR "Case Study" OR "Conference Proceeding" OR "Country Report" OR "Essay" OR "Article") AND la.exact("English")

Appendix C: PRISMA Study Selection Flowchart



Adapted from: Moher, D., Liberati, A., Tetzlaff, J. & Altman, D.G., The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Medicine* 6(7): e1000097. doi:10.1371/journal.pmed1000097

Appendix D: Summary of the Review Literature

Author/Year	Country	Study design and period	No. of sites	Target population	Intervention and comparison group	Summary of key findings
Akeman et al., 2019	US	Pragmatic trial (non-randomized) Enrollment period: Cohort 1: 09/2016-11/2016 Cohort 2: 09/2017-11/2017	1	First-year undergraduate students of at least 18 years old with USA citizenship (n= 364)	<i>Resilience program</i> : Four 50-minute weekly sessions including information and practice on resilience components such as value-driven and goal-oriented behavior, mindfulness practice, and cognitive restructuring strategies to implement growth mindset responses to college-related challenges and stressors. Comparison: Students received an "orientation-as-usual" session. Students were assessed at pre- and post- intervention, and at semester-end.	Decreased depression at the end of semester ($\beta = -2.50$, $p = 0.006$). A significant group (training vs. no training) by time (pre-, post-, semester-end) interaction was also observed ($F = 3.94$, $p = 0.020$). Significant improvements were identified for perceived stress at both post-training ($\beta = -1.88$, $p = 0.011$) and semester-end ($\beta = -1.86$, $p = 0.013$). The perception of stress increased at both post-training ($\beta = -1.88$, $p = 0.011$) and semester-end ($\beta = -1.86$, $p = 0.013$).
Akers et al., 2017	US	Randomized control trial (RCT) Enrollment period: 2009 - 2011	8	Young female students and university staff with body image concerns (n= 408)	<i>The Body Project</i> : Four weekly 1-hour group meetings led by clinicians. Comparison: Educational brochure. Participants received two mailed brochures: APA Help Center's three-page guide to "Eating Disorders" and a one-page "Ten Steps to Positive Body Image" brochure from the National Eating Disorders Association. Participants completed assessments at 1-, 2-, and 3-year follow-ups.	Meaningful difference in eating disorder symptoms (using DSM-IV criteria) between baseline and final assessment in 14.9% of participants in intervention vs 6.7% of participants in control ($\chi^2 (1, N= 360) = 6.285$, $p < 0.05$), which persisted through follow-up. On average, each additional person achieving a clinically meaningful change costs \$838. Using the lower and upper staff salary estimates, the cost per person with a meaningful improvement would be \$356–818.
Bang et al., 2017	South Korea	Quasi-experimental Study period: 2014 - 2015	1	Graduate and undergraduate students (n= 118)	<i>Campus forest-walking program</i> : Six weekly forest-walks (40 minutes). Including text messages, leaflets and a	Increase of physical activity ($F = 5.91$, $p = 0.003$, $ES = 0.25$), healthy nutrition ($F = 3.64$, $p = 0.028$, $ES = 0.19$), stress management ($F = 3.32$, $p = 0.038$, $ES = 0.18$), and spiritual growth ($F = 3.14$, $p = 0.045$, $ES = 0.18$).

Author/Year	Country	Study design and period	No. of sites	Target population	Intervention and comparison group	Summary of key findings
					<p>lecture to encourage walking. Students tracked their physical activity.</p> <p>Comparison: Participants did not receive leaflets, lectures, and did not track their activity.</p>	<p>Decrease of depression ($F= 3.15$, $p= 0.045$, $ES= 0.18$) in the experimental group after the intervention compared to the control group.</p> <p>The changes were sustained at 3 months follow-up.</p>
Boucher, 2016	US	RCT	1	College students (n= 156)	<p><i>Psychoeducational outreach-talk</i>: Didactic talk (one session) on mitigating fears about therapy to normalize mental health treatment seeking behaviour.</p> <p>Comparison: Participants received a handout about the student services offered on campus, including mental health and contacts.</p>	<p>Higher effect of the intervention on attitudes, self-stigma, and intentions and readiness to seek care, among participants with higher levels of psychological symptoms; results sustained at 6-week follow-up.</p> <p>The intervention could be easily adaptable for use on other campuses.</p>
Fitzsimmons-Craft, 2019	US	Cross-sectional Study period: 2013 - 2016	13	University students 18+ years of age (Y1: n = 323; Y2: n = 622; Y3: n = 1,509)	<p><i>Healthy Body Image (HBI) program</i>: Free internet-based strategy. HBI identified individuals at low risk for, high risk for, or with a clinical/subclinical eating disorder, and offered online interventions or referral to in-person care to address students' risk/clinical status.</p>	<p>3-year results since program launch: participants showed decreased restrictive eating ($B= -1.14$, $t= -6.00$, $p< 0.001$) and binge eating ($B= -0.74$, $t= -4.32$, $p< 0.001$) for students with a clinical/subclinical eating disorder. Reports of vomiting and diet pill/laxative use were low.</p>
Gross et al., 2016	US	RCT	1	Female student athletes (n= 18)	<p><i>Mindfulness-Acceptance-Commitment (MAC)</i>: Seven weekly 1-hour sessions of a mindfulness exercise that provided participants with experiential exposure to key concepts discussed during the intervention.</p> <p>Comparison: Sessions involving use of imagery, positive self-talk, relaxation, arousal control procedures and goal setting. Developed in cognitive-behavioural tradition.</p>	<p>The intervention group reduced substance use, hostility, generalized anxiety, eating concerns, and psychological distress over time compared to the no-intervention group. Increased psychological flexibility from post-intervention to one-month follow-up. MAC participants also evidenced improved sport performance from pre-intervention to post-intervention.</p>

Author/Year	Country	Study design and period	No. of sites	Target population	Intervention and comparison group	Summary of key findings
Mc Sharry & Timmins, 2016	Republic of Ireland	Quasi-experimental Study period: January - April 2012	1	First year undergraduate nursing and home economics students (n= 110)	<p><i>Health and well-being teaching module:</i> A course module providing theoretical knowledge on physical activity, healthy eating, and psychological well-being. Students were guided to achieving health goal.</p> <p>Comparison: Students did not take the Health and Well-being module.</p> <p>Data were collected at enrolment, after three months, and after one year.</p>	Improvement in psychological well-being scores in the intervention group between pre and post intervention ($p = .019$); results were attenuated slightly at one-year follow-up in the intervention group, but significantly in the comparison group.
Rallis et al., 2017	US	Quasi-experimental	1	Undergraduate and graduate students of at least 18 years of age, with no prior completion of a suicide gatekeeper training. (n= 231)	<p><i>Gatekeeper training:</i> One-hour of gatekeeper training, focused on suicide psychoeducation, how to ask students about suicide and how to respond, and on how and where to make referrals for professional help. Training included role-playing. A manual was provided with a summary of all the information provided in the training as well as a conversation and referral guide.</p>	<p>Increased declarative and perceived knowledge, by 40.4% and 43.4% respectively, of suicide facts during the intervention, maintained 3 months after the intervention.</p> <p>Increased number of referrals, from baseline to 3 months of follow-up. The number of participants who reported making at least one referral increased from 11.8% (n = 21) to 24.2% (n = 43), $p = 0.001$.</p>
Räsänen et al., 2016	Finland	RCT Study period: 2012 - 2013	1	University students of at least 18 years old, reporting some form of psychological distress and were not receiving therapy or with suicidal ideation. (n= 68)	<p><i>The Student Compass:</i> A seven-week online Acceptance and Commitment Therapy (iACT) intervention included 2 face-to-face and a five-week online program offering coping tools. Students received individualized feedback and completed a weekly journal.</p> <p>Comparison: Participants were placed on a waiting list for seven weeks before they were offered access to the Student Compass.</p> <p>Both groups were measured before and after the intervention.</p>	Increased self-esteem, satisfaction with life, and mindfulness skills; as well as reduced symptoms of stress and depression among participants in the iACT group. The results were maintained at the 12-month follow-up.

Author/Year	Country	Study design and period	No. of sites	Target population	Intervention and comparison group	Summary of key findings
Rohde et al., 2016	US	RCT Study period: 2013 - 2014	1	College students with 20 points or more in the Center for Epidemiologic Studies-Depression Scale and without previous diagnosis with major depressive disorder. (n= 59)	<p><i>Change Ahead</i>: Cognitive-behavioral group prevention program consisting on 6 weekly sessions to encourage students to try something new, and to commit increasing positive cognitions. Home practice assignments were included.</p> <p>Comparison: Participants received an educational brochure describing major depressive disorder symptoms and treatment as well as referral information.</p> <p>Participants were assessed at pretest, post-test, 6-, 12-, 18-, and 24-month post-intervention follow-ups.</p>	Post-test reductions in depression symptoms by self-report measure represented medium-large magnitude effects ($d = 0.69$). Incidence of major depression onset at 3-month follow-up was 4% for Change Ahead participants versus 13% in comparison group (though this pilot and feasibility study was underpowered to detect statistically significant differences was not statistically significant).
Stallman et al., 2016	Australia	RCT Study period: 2013 - 2014	1	University students with a score of at least 16 on the Kessler screening measure and not be currently receiving treatment for a mental health condition. (n= 107)	<p><i>Low-Intensity Cognitive Behaviour Therapy (LI-CBT)</i>: Students had a biopsychosocial assessment of their needs. They were encouraged to conduct low intensity treatments such as behavioural activation, medication support, and sleep hygiene. Students were linked to CBT-based online programs for functional and emotional concerns. Students were informed about university-based programs.</p> <p>Comparison: Participants received a personalized email regarding counselling and academic workshops available at the university.</p> <p>Variables were assessed at two, six, and 12 months.</p>	Reduced depression and anxiety among participants in LI-CBT compared with control at 2 months after the intervention.
Stice et al., 2017	US	RCT	2	Female undergraduate and graduate students and university staff (n= 680)	<p><i>The Body Project</i>: Four weekly 1-hour group sessions with 5 – 9 participants. Three modes of project delivery:</p>	Clinician-led group participants had greater reductions in all the outcomes (Thin Ideal Internalization, Body Dissatisfaction, Negative Affect, Eating Disorder Symptoms

Author/Year	Country	Study design and period	No. of sites	Target population	Intervention and comparison group	Summary of key findings
					<p>clinician-delivered, internet-delivered, and peer-delivered.</p> <p>Comparison: Educational video</p> <p>Measures were collected at pretest, post-test (4-weeks later), and at 6, 12, 24, and 36-month follow-ups.</p>	<p>and Diagnoses) by post-test and 6-month follow-up compared to the control. Peer-led group participants showed reductions of all outcomes by post-test. eBody Project participants showed significantly greater reductions in all the outcomes compared to the control.</p> <p>Peer-led or eBody interventions could be implemented on campuses as cost-saving strategies.</p>
Syzdek et al., 2016	US	RCT	1	College men with a score of at least 30 on the Anxiety and Depression subscale of the DUKE Health Profile, and without history of professional help seeking in the past 2 years (n= 35)	<p><i>Gender-based motivational interviewing (GBMI)</i>: A single 2-hour session of computerized assessment of help-seeking behaviors and psychopathology and provided feedback interviews.</p> <p>Comparison: Participants completed the assessment but did not receive feedback</p> <p>All participants received a referral list for mental health treatment available at the university and in the community.</p> <p>Measures were taken one and two months after the baseline assessment.</p>	<p>Increase in seeking help from parents, as 44% of men increased their use of parents for help during follow-up (2 months) as compared with 8% in the control. There was a small to medium effect of GBMI on professional and nonprofessional help seeking. GBMI was accepted and considered a credible and satisfactory intervention by participants.</p>
Turetsky & Sanderson, 2018	US	RCT	1	First-year and upper-year undergraduate students (n=520)	<p><i>Intervention to improve attitudes about mental health</i>: 15-minute lecture-based intervention focused on the prevalence of mental health issues and help-seeking behavior on campus, and on how norm misperception may affect these. A list of mental health resources available on campus was provided.</p> <p>Comparison: Two control groups, 1) a lecture with general education to increase help seeking attitudes in mental</p>	<p>Increased participants' perception, in the social norms intervention, of campus mental health help-seeking and suicide ideation prevalence both immediately and 2 months after the interventions. Increased perception of depression prevalence on campus among students in the social norms and general education intervention groups.</p>

Author/Year	Country	Study design and period	No. of sites	Target population	Intervention and comparison group	Summary of key findings
					health, and 2) a lecture with a stress-reduction approach Measures were taken before, immediately after, and 2 months after each intervention.	
Vasko et al., 2019	US	Mixed methods	1	College student between 18 and 24 years old with at least three ADHD symptoms on the Barkley Adult ADHD Rating Scale, and an elevated alcohol use from an identification test.	<i>The SUCCEEDS program</i> : Four weekly sessions and one telephone "booster session." Sessions content includes psychoeducation and personalized ADHD symptom feedback, decisional balance and personalized drinking consequences feedback, behavioural activation, and values. Measurements conducted at baseline, immediately after the intervention, and at 1- and 3-month follow-up.	Reduced number of alcohol intake per week, some participants maintained their behaviour at the 3-month follow-up. Some of the academic behavioral problems were also improved for some participants.

Appendix E. Summary of the Jurisdictional Review

Table E1. NHS and higher education institution partnerships in England

Partnership	Description
Universities in Leeds and Leeds Primary Care Trust	Partnership that provides senior health improvement specialist to coordinate with universities and a self-help clinic which offers drop-in appointments at the student counselling centre
Oxford Student Mental Health Network (OSMHN)	Partnership between universities in Oxford, Mental Healthcare NHS Trust and Oxford City Primary Care Trust to improve communication about student mental health needs
Cambridge and Anglia Ruskin Universities: Network to Promote liaison between universities and the NHS	Network of university and NHS personnel to discuss mental health initiatives and raise awareness of mental health topics
University of East London's partnership with the Newham Improving Access to Psychological Therapies service	Partnership to provide cognitive-behavioural therapy directly to University of East London students
University of Bath's work with CMHT to liaison with local services	Psychiatrist works with local CMHT to ensure students can access services that are not available at the University

(Royal College of Psychiatrists, 2011)

Table E2. England

Intervention	Intervention features	Setting & target population	Associated policies & funding sources	Key results/Findings
Mental Health Services Schools and Colleges Link Programme	<p>National initiative led by the Anna Freud National Centre for Children and Families that brings together education and mental health services under Clinical Commissioning Groups (CCGs) to forge long-term collaboration.¹</p> <p>The program aims to ensure that children and young people can get the help they need in a timely manner.²</p>	Schools and colleges across England ²	<p><i>Future in Mind</i> report, 2015³</p> <p><i>Children's and adolescents' mental health and CAMHS: Government Response to the Committee's Third Report of Session 2014-15</i> to improve child and adolescent mental health⁴</p> <p>Funding provided by NHS England and CCGs:³</p> <ul style="list-style-type: none"> • NHS England made funding of £50,000 available per CCG to cover NHS capacity to release specialist staff to take part and CCGs were expected to match-this funding • NHS England also funded £3,500 school to backfill staff time • Some CCGs secured additional funding to scale up program 	<p>Pilot from 2015-16 successfully ran in 255 schools and now over 3000 schools, colleges and mental health professionals are taking part between 2017-19²</p> <p>Independent evaluation found that the program²:</p> <ul style="list-style-type: none"> • strengthened communication and joint working between schools and NHS children and young people's mental health services; • increased satisfaction with working relationships; • improved understanding of mental health services and referral routes, and knowledge and awareness of mental health issues among school lead contacts; and • improved timeliness and appropriateness of referrals
Senior Mental Health Leads & Mental Health Support Teams (MHST)	<p>Senior Mental Health Leads and MHST work together to enhance student wellbeing.</p> <p>Senior Mental Health Leads incentivize and support schools and colleges to identify and train a senior mental health lead.⁵ MHST provides early mental health and emotional wellbeing interventions and support school staff achieve wellbeing goals.⁶</p> <p>Led by NHS England and NHS Improvement⁶</p>	Schools and colleges in England ⁵	<p><i>Transforming Children and Young People's Mental Health Provision Green Paper</i>, 2017</p> <p>Funding provided by NHS England⁷</p> <p>Senior Mental Health Leads:</p> <ul style="list-style-type: none"> • Covers cost of training programs up to £15- 20 million each year from 2019 until all schools and colleges have trained a lead⁵ <p>MHST Funding:</p> <ul style="list-style-type: none"> • Current funding set at £360,000 per annum per team, with additional funding for higher cost areas⁸ 	<p>Results from the Senior Mental Health Leads pilot reports⁵:</p> <ul style="list-style-type: none"> • Success in strengthening communication and joint working arrangements between schools and mental health services; and • Improvements in understanding of referral routes, improved knowledge and awareness of mental health issues among school leads and improved timeliness and appropriateness of referrals. <p>The first MHST are being launched in 25 trailblazer areas with implementation at the end of 2019.⁶ An additional 57 sites confirmed to start developing 123 MHST for 2020.⁶</p>

			<ul style="list-style-type: none"> • Additional £9.3 million in funding announced in July 2019 for training and educating staff⁸ 	<p>It is expected that MHSTs will be rolled out across 20-25% of England schools and colleges by 2020-2023⁷ and support approx. 470,000 children and young people.⁸ It is expected that this will reduce the need for more specialist services.⁷</p>
<p>Oxford Student Mental Health Network (OSMHN)</p>	<p>Partnership between local education institutions and health service providers¹⁰</p> <p>Aims to improve understanding of student mental health needs within the local education and healthcare sectors.⁹</p> <p>Provides workshops for staff on issues relating to student mental health, providing them with guidance on student mental health issues and tools to enable staff members to share their experiences and knowledge.¹⁰</p>	<p>Partnership includes Oxford Brookes University, the University of Oxford, Oxford and Cherwell Valley College, Oxford City Primary Care Trust and Oxfordshire and Buckinghamshire Mental Healthcare NHS Foundation Trust⁹</p> <p>Staff who work with students in higher and further education institutions, health services, the voluntary sector and private practice¹⁰</p>	<p>Funding provided by the Higher Education Funding Council for England¹⁰</p>	<p>Information about local treatment and support services made available to students and staff in the printed OSMHN Student Mental Health Guide (2003)¹¹</p> <p>Mental health care professionals gained a greater understanding of the needs of students through OSMHN newsletter, website and OSMHN Student Mental Health Guide (2003).¹¹</p> <p>Network was used to share and promote examples of good practice in prevention treatment and support in the field of student mental health¹¹</p> <p>OSMHN held nine workshops over the first three years of the project.¹¹</p>

¹NHS UK, n.d.; ²Anna Freud National Centre for Children and Families, n.d.; ³Day, et al., 2017); ⁴House of Commons Health Committee, 2015; ⁵Department of Health & Department for Education, 2017; ⁶NHS UK, n.d.; ⁷House of Commons Committee of Public Accounts, 2018; ⁸The British Psychological Society, 2019; ⁹Royal College of Psychiatrists, 2011; ¹⁰Oxford Student Mental Health Network, 2017; ¹¹Leach, 2003

Abbreviations: Child and Adolescent Mental Health Services (CAMHS)

Table E3. Scotland

Intervention	Intervention features	Setting & target population	Associated policies & funding sources	Key results/Findings
Mental Health Counsellors	Aim to improve mental health and wellbeing for further and higher education students ¹	Students at colleges and universities in Scotland ²	<p>Expectations of Minister for Further Education, Higher Education and Science, 2018²</p> <p>Scottish Government's Programme for Government, <i>Delivering for today, Investing for Tomorrow: the Government's Programme for Scotland</i>, 2018²</p> <p>Funding provided by the Government of Scotland:</p> <ul style="list-style-type: none"> • £20 million initial investment¹ • Institutions will receive more than £3.6 million this year¹ • An additional £100,000 has been allocated to the Scottish Funding Council to support implementation in the first two years¹ 	No information available
Think Positive	<p>The National Union of Students (NUS) student mental health project^{3,4}</p> <p>Aims to find ways to support students experiencing mental illness, tackle stigma and discrimination and promote wellbeing in colleges and universities ³</p> <p>Main project is called Student Mental Health Agreements which brings student associations and their institutions together in a formal agreement to work jointly on mental health issues ³</p>	Higher education institutions and student associations ³	<p>Outcome Agreement Guidance</p> <p>Funding provided by the Government of Scotland:</p> <ul style="list-style-type: none"> • £251,530 funding announced in March 2018 to support Mental Health Agreements¹ • £36,000 in additional funding in 2019 for an additional full-time officer to expand student mental health agreements to support the Think positive campaign¹ 	25 institutions benefiting from mental health agreement funding ¹

¹Scottish Government, 2019b; ²Scottish Funding Council, 2018; ³thinkpositive.scot, NUS Scotland; ⁴Scottish Government, n.d.

Table E4. Wales

Intervention	Intervention features	Setting & target population	Associated policies & funding sources	Key results/Findings
Healthy and Sustainable Higher Education/ Further Education Framework	Extension of the Welsh Network of Health School Schemes to establish a national 'healthy' institution framework in higher and further education settings. ^{1,2}	Higher and further education institutions	<i>Welsh Network of Health School Schemes, 1999</i> <i>Well-being of Future Generations (Wales) Act, 2015</i>	Information not available.
ACTivate Your Life (AYL)	<p>ACT-based psychoeducation course (4-week, 2-hr sessions) that aims to help individuals deal with a range of emotional issues incl: anxiety, stress, lack of motivation, depression, and self-confidence.³</p> <p>The course is delivered to groups by trained presenters (mental health professionals and others) with many versions, including AYL-At University.³</p> <p>AYL-At University runs at Exeter University, Cardiff University, Cardiff Metropolitan University, and Swansea University, and next year also in the University of South Wales. The standard version runs at Aberystwyth University.</p>	<p>Standard AYL course: general population</p> <p>AYL-At University: University students</p>	Funded and delivered by NHS Wales through Health Boards	<p>Evaluation from 12 AYL courses delivered across the ABMU Health Board showed significant changes in participant scores across measured domains, including depression, anxiety, self-esteem, and general life satisfaction.² Significant changes were also found on process measures of mindfulness-based self-efficacy and psychological flexibility. Concludes that brief psychoeducation ACT course may be useful in helping people in need of early psychological intervention.⁴</p> <p>Evaluation from HEIs not available.</p>

¹NHS Wales, 2019; ²Public Health Wales, n.d.; ³Frude, 2018; ⁴Cartwright & Hooper, 2017

Table E5. Australia

Intervention	Intervention features	Setting & target population	Associated policies & funding sources	Key results/Findings
The Australian University Mental Health Framework	<p>Framework to provide guidelines and standards for Universities to support the creation of learning environments that are conducive to good mental health and wellbeing.¹</p> <p>Developed by Orygen, the National Centre of Excellence in Youth Mental Health with consultation from various stakeholders. The framework is expected to be implemented in 2020.¹</p>	Universities in Australia	Supported and funded by the Australian Government as part of its measure of prioritizing mental and preventive health.	<p>Expected outcomes¹:</p> <ul style="list-style-type: none"> • Improved care and access • Better identification, integration and coordination of support services • Co-creation of learning environments conducive to good mental health • Improved data collection, evaluation and adaptation across all stages of mental health and ill-health • A reduced percentage of students leaving and considering early course exit due to mental ill-health; and • An increased number of students accessing interventions early.
Enhancing Student Wellbeing Project	<p>Aims to build the capacity of academic educators to design curriculum and create teaching and learning environments that enhance student mental wellbeing.²</p> <p>Established the 'Framework for Enhancing Student Mental Wellbeing' for developing a whole-of-university approach. Also developed online professional development modules for academic teachers and held a national student mental wellbeing symposium in 2016.^{2,3}</p>	University academic educators	<p>Framework builds on the outcomes of the <i>National Summit on the Mental Health of Tertiary Students (2011)</i>.</p> <p>Funding provided by the Australian Government Department of Education and Training.⁴</p>	
Headspace	<p>Headspace, Australia's National Youth Mental Health Foundation, aims to promote and support early intervention for young people with mental and substance use disorders by improving access and service cohesion.⁵</p>	Young people aged 12-25 years	<p>Funding provided by the Australian Government (\$54M).</p> <p>Of the 12 corporate partnerships, some provide funding for new programs and program expansion.⁶</p>	<p>Headspace centre impact evaluation published 2019 reported that the majority of young people had positive outcomes from their time at headspace and attributed these to their headspace experience.⁵</p>

Delivered via headspace centres, national telehealth service, eheadspace, headspace vocational services, headspace schools, headspace early psychosis.⁵

Main outcomes include significant reduction in levels of psychological distress and improving quality of life, reduced impact of their mental health on their lives, building confidence, and improved social and vocational functioning.⁵

¹Orygen, n.d.; ²Enhancing Student Wellbeing, n.d.; ³Enhancing Student Wellbeing, 2016; ⁴University of Melbourne, n.d.; ⁵headspace, 2019; ⁶headspace, n.d.

Appendix F: The Healthy Universities Framework

The Healthy Universities framework was developed in the UK with support from the Higher Education Funding Council of England in response to growing interest to develop a more holistic and strategic whole university approach (Dooris et al., 2010). The framework was informed by wider research on healthy settings and underwent consultation with network members to define a healthy university as one that “aspires to create a learning environment and organizational culture that enhances the health, wellbeing and sustainability of its community and enables people to achieve their full potential” (Dooris et al., 2010). Healthy Universities describe many potential benefits of applying a whole university approach, or healthy settings approach, ranging from core business priorities to long term impacts on the wider community (Dooris et al., 2010).

An adapted model of the Healthy Universities framework is presented in Figure 1. Their simplified model conceptualizes the application of a whole university approach as the underpinning values (e.g. partnership, participation and equity) come together with higher education and public health drivers to inform action across three focus areas. The UK Healthy Universities Network also created a toolkit to support institutions wishing to adopt and/or embed a whole system Healthy University Approach. Four sections include a self-review tool, template presentations, guidance packages and case studies.

Figure 1. Healthy Universities Framework for Action

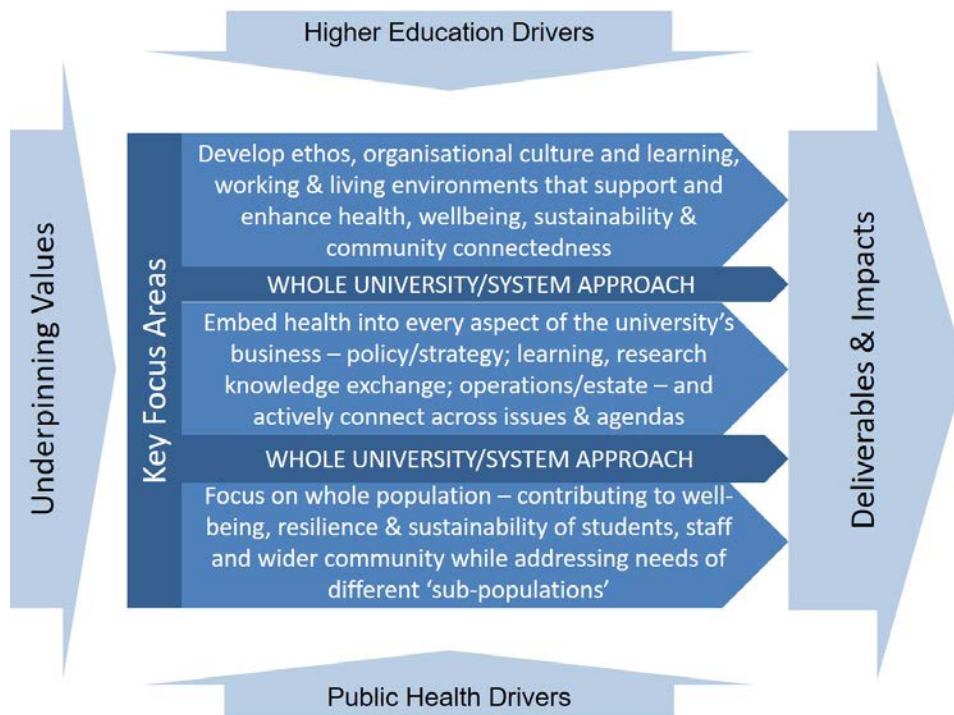


Figure provided by UK Healthy Universities



NORTH AMERICAN
OBSERVATORY
on Health Systems and Policies

The North American Observatory on Health Systems and Policies (NAO) is a collaborative partnership of interested researchers, health organizations, and governments promoting evidence-informed health system policy decision-making. Due to the high degree of health system decentralization in the United States and Canada, the NAO is committed to focusing attention on comparing health systems and policies at the provincial and state level in federations.