

**An Exploration of Post-Secondary Students' Use of
an Online Pledge Program to Improve Wellbeing**

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FOREWORD

This document will observe the singular form of the pronoun “they” as accepted by Merriam-Webster Dictionary and the Publication Manual of the American Psychological Society, 7th edition. It does so out of respect for people of all genders.

Brock University acknowledges the land on which we gather is the traditional territory of the Haudenosaunee and Anishinaabe peoples, many of whom continue to live and work here today.

ABSTRACT

BACKGROUND: Increasing numbers of post-secondary students report that their stress is so overwhelming it inhibits their academic achievement and impacts their health. On campus, traditional, clinical paradigms for managing mental health by treating individuals already experiencing breakdowns in their ability to cope are no longer keeping pace with need. Adding more accessible, non-clinical interventions that focus on prevention and build individual, collective, and institutional well-being have the potential to enhance students' capacity for managing significant stressors. This study explores university students' participation in a new online wellness intervention that uses theory-informed, evidence-based pledges to build coping, caring, and connecting practices. **METHODS:** Between September 2020 and June 2021, in response to promotional campaigns for the intervention, 966 unique visitors accessed the intervention (website) 2,124 times. 114 individuals completed the brief, researcher-designed online survey assessing demographic characteristics, academic standing, substance use behaviours, and which one of the nine pledges they selected; 89 met eligibility criteria of being Brock students and were included in the study. **RESULTS:** The final sample consisted of 86.5% female-identifying participants, with an average age of 21.5 years. 21.3% were first-year students. 48.3% reported an average grade between 65-79%; none reported an average grade less than 65%. Past-month alcohol and cannabis consumption was lower than what might be expected in typical post-secondary populations. 69.7% made a pledge that could help themselves cope with their stress (with most choosing to use positive affirmations or intentionally spend time in nature). 16.9% pledged to commit an action that showed others they cared. 13.5% made a pledge that could help make their institution a better place to be. All pledges were selected at least once. Pledge choice was not associated with demographic, academic or substance use characteristics.

CONCLUSIONS: This small, preliminary study suggests this online pledge initiative should be further investigated with larger, more diverse samples as a promising avenue to build students' capacity to cope with stress and form caring and supportive connections on campus. It offers ideas for feasible and low-cost structural changes institutions can make to support the wellbeing of all students.

Keywords: Student, Post-secondary, Stress, Wellbeing, Pledge

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*"We are like dwarfs sitting on the shoulders of giants.
We see more, and things that are more distant than they did,
not because our sight is superior or because we are taller than they,
but because they raise us up, and by their great stature add to ours."*

-John of Salisbury
(Dartmouth Geisel School of Medicine, 2021).

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1.0 INTRODUCTION

Students often experience heightened stress as they matriculate into the post-secondary environment. During this exciting and potentially tumultuous time, emerging adults ages 18-29 experience a host of changes while adapting and assimilating into their new physical environments, social networks, and academic responsibilities (Auerbach et al., 2018). Without the stable life structure of adulthood, emerging adults may experience significant instability that can be worsened by being physically distanced from their pre-existing support network (Auerbach et al., 2018). Stress throughout this transition period can be exacerbated by feelings of self-doubt or inadequacy, engaging with new people or the need to develop new skills to overcome academic challenges and social pressures.

The effects of their stressful experience can manifest in a variety of physical and psychological presentations. Irrespective of the specific presentation of stress in the individual, it can cause students to be unwell. If students are unwell for any reason, physical or psychological, they may be unable to reach their full academic potential. Of the 55,284 Canadian post-secondary students responded to the American College Health Association National College Health Assessment (ACHA-NCHA) Spring 2019 survey, 42% stated that within the last 12 months they felt that stress affected their academics and 60.9% rated their stress as 'more than average' or 'tremendous'(American College Health Association, 2019b). High levels of stress can contribute to school attrition which can have life-long negative effects on students, institutions, and our economy,

Post-secondary health centres can be a nexus between students and medical, social, and psychosocial resources. These facilities have the potential to improve the health, academic performance, and, most importantly, the overall well-being of students. While there is a panoply of support available through these centers, services commonly offered include those that raise awareness, programming tailored towards priority subpopulations, wellness checks as well as various types of counselling and pharmacotherapeutic interventions (Center for Innovation in Campus Mental Health, 2020).

Students are seeking support from campus health centers at increasing rates. An analysis of 5 years of data from 86 campus counselling centers found that while enrollment was growing at a rate of 6%, the demand for services increased by 30% (Xiao et al., 2017). In addition to an increase in requests for service, campus health centers are seeing an increase in the number of students who have a history of threat-to-self; a subset of students known to require 20-30% more mental health services than those without such history (Center for Collegiate Mental Health, 2020). Ultimately, this could be further exhausting an already heavily loaded system because, despite this growing demand, counselling centers have not experienced a proportionate increase in resources, resulting in a significant unmet need for services (Auerbach et al., 2018; Xiao et al., 2017).

Adding more and varied service providers may be difficult due to logistic and budgetary concerns. Efforts to offset the demand for service have led to the development of resources that can serve large groups of students, including group counselling sessions, peer-to-peer service, and electronic resources.

To help meet needs in a way that is supportive, financially responsible and accessible to all students, many institutions have turned to online resources. Some online supports have proven to be successful. For example, internet-based cognitive behavioural therapy has been shown to be as effective as face-to-face treatments (Andersson et al., 2014). However, while online support that focuses on treatment can be beneficial in some instances, a more promising avenue for mental health care may be with population-based interventions that aim to build and strengthen individuals' coping skills and evolve a supportive campus culture, thus mitigating the effects of stress before they become overwhelming.

Arxer and Murphy (2019) offer a more thorough understanding of the role of campus culture and community in individual-level skill-building in their 2019 work, *Community-Based Health Interventions in an Institutional Context*. They posit that organizations are often erroneously thought to be the sole source of health services and argue that it is the mutual participation of both the community and the organization that ultimately creates health. For them, individual skill development and community-building can not be viewed as mutually exclusive.

Individual skill- and campus-community-building are interconnected and symbiotic. An example of this is found in the relationship between campus culture toward mental health and students' mental health help-seeking behaviour. Chen et al. (2016) found that campus culture was directly related to help-seeking behaviour, a perceived positive mental health culture is positively correlated with students' mental health help-seeking behaviour. Positive peer and community attitudes toward mental health bred positive behaviours in students. The use of peers or other

community members (as individuals or as a whole) to influence others and teach either vicariously or directly is a longstanding tradition in care.

The concept of social support from peers or the community provides a foundation for both well-established and emerging health interventions. Studies indicate that peer support in traditional drug and alcohol addiction programs (such as Alcoholics Anonymous) can improve relationships with care providers and social supports, increase treatment retention, reduce relapse rates and increase satisfaction with programming (Pagano et al., 2011; Tracy & Wallace, 2016). More recent interventions such as Jack.org¹, rely heavily on members to share their lived experiences in a way that builds social connections and helps prevent others from realizing the same fate (Jack.org, 2019).

Making peer-to-peer connections can result in positive emotions for both the person initiating the connection and for the person receiving it. These positive emotions can increase the individuals' range of thought-action repertoires. This broadened mindset allows students to discard autonomic urges and encourages them to pursue a greater breadth of novel experiences in the areas such as creativity, flexibility, efficiency, social bonding and openness to information (Fredrickson, 2004; Fredrickson et al., 2000). This may result in increased intellectual, social, physical, and psychological resources that can be utilized to overcome future challenges (Fredrickson, 2004). These new personal resources may result in a more resilient individual who

¹ Jack.org is a youth-led mental health movement that, in 2019 saw its 2,800 youth advocates support more than 170,000 individuals in person and 30 million people via its online resources.

can enhance the culture's intellectual, social, physical, and psychological resources through participation in the community.

To genuinely impact the health of the entire student body, campus-based interventions must be effective for individual users; but they must also be accessible and acceptable to all students and create an environment (campus culture) that supports student mental health. Therefore, making resources widely available stands to improve campus culture by building stronger social connections among students, creating opportunities for students to support one another, and generally enhancing collective capacity for positive mental health.

This thesis represents the initial step in what is expected to be an ongoing exploration of the uptake and impact of a unique, student-driven mental health promotion initiative that is designed to reduce distress and potentially increase resilience among individual students and the campus collective. This study focuses on the intervention's online "pledge" component. This component invites individuals to fulfill a personally-selected, 2-week, "coping," "caring," or "connecting" pledge to support their own and/or others' good mental health. The purpose of this study is to examine the characteristics of students who make a pledge. Knowing that large scale interventions can lose their ability to target priority populations, this study seeks to understand more about the students using the pledge system and how they are using it. This will help to determine if this approach engages students who may individually or collectively benefit from taking the positive actions that comprise the pledges.

2.0 LITERATURE REVIEW

2.1 Enhancing Health on Campus

2.1.1 The Post-secondary Population

The long-term benefits of post-secondary education can not be understated. Burwell (2017) identifies college education as essential to social mobility. This is evidenced by the benefits bestowed upon those who have completed higher education. With a successful post-secondary education comes increased employment prospects, higher earning potential, better health and life expectancies, and an increase in overall happiness—the long-term benefits of higher education are vast and undeniable (Doyle & Skinner, 2017). Having a well-educated population also serves to advance our country as a whole. Our ageing population creates an increased demand for skills and knowledge, making post-secondary education vital to Canada’s prosperous future (Statistics Canada, 2017).

2.1.2 Diversity

Today, post-secondary campuses offer their students an exciting mix of cultures and experiences where higher than ever rates of Canadians receive accreditation. In the 2016 Canadian census, 54% of Canadians reported having attended College or University, representing a more than 5% increase from 48.3% in 2006 (Statistics Canada, 2017).

The overall number of students enrolled in Canadian institutions has been increasing steadily, with 2,116,002 learners enrolled in 2017/2018, compared to only 1,709,451 in the 2005/2006

academic year (Statistics Canada, n.d.-a). There are also notable increases in the number of high-risk and diverse populations attending post-secondary institutions.

In 2016, 40.7% of women aged 35-34 held a bachelor's or advanced degree, an increase of 7.8% from 2006 (Statistics Canada, 2017). The number of Aboriginal People (a population that is less likely than other Canadians to have any post-secondary education) who held a college diploma rose by 4.3% from 2006 to 2016. The number of Aboriginal People who held a bachelor (or higher) degree rose by 3.2% during the same period (Statistics Canada, 2017). In 2016, 20.4% of single mothers ages 25-64 held a bachelor's degree or higher, up 5.7% from 2006. Nearly one-third (31.5%) of refugees upgraded their education after becoming permanent residents of Canada (Statistics Canada, 2017). This is particularly noteworthy as projections indicate that immigrants could account for 30% of Canada's population by the year 2036 (Morency et al., 2017).

Often housing multiple faculties or areas of study, campuses can attract learners and educators from across the lifespan. In the 2017/2018 academic year, 1,721,906 students enrolled in Canadian post-secondary institutions were under the age of 29, with 509,001 of these being under the age of 20 (Statistics Canada, n.d.-b).

Overall, campuses are sites of tremendous diversity with potential for positive integration and sharing as well as damaging hostility and marginalization. Offering a wide range of supports that ensure all students—regardless of their backgrounds and circumstances—can thrive on campus is vital. Our individual and collective futures rely on the institution's ability to adequately

support, guide and mentor post-secondary students as they attempt to fulfill their personal and professional goals.

2.1.3 Student Health

2.1.3.1 Defining Health

Health, or lack thereof, can affect every aspect of our lives—and the lives of those around us.

Good health can be liberating, and poor health can be confining, yet both remain subjective.

Despite biochemical markers, averages, and what is considered “normal” functioning, people diagnosed with severe mental or physical ailments can lead very productive, fulfilling, and well-rounded lives.

The opposite can also be observed, where those with no discernible physical or biological challenges can experience the same effects or identify as someone who is unwell. If a student believes that they are healthy, then the focus should be on health maintenance and promoting future health and well-being. Whereas if a student believes that they are unhealthy for any reason, physical or mental, then they are, in fact, unhealthy. Health and education are reciprocal and interconnected (Ontario College Health Association, 2009), as such, if students feel that they are unhealthy or unwell for any reason, they are less likely to excel in their academics, social endeavours, or other pursuits and more likely to experience stress.

2.1.3.2 Health and Stress

Of great concern are the numbers of Canadian students who report feeling unhealthy and/or unwell due to extreme stress and difficulty coping. In the ACHA-NCHA II Spring 2019 survey, the Canadian cohort of post-secondary students responded with 60.9% rating their stress as “more than average” or “tremendous,” 88.2% feeling overwhelmed with all they had to do, 69.6% feeling very lonely, and 63.6% feeling things were hopeless within the last 12 months. In the same group, 51.6% felt so depressed that it was difficult to function, and 68.9% felt overwhelming anxiety (American College Health Association, 2019a). These numbers represent increases in almost all the mentioned variables over the 2016 ACHA-NCHA II Canadian Reference Group findings (American College Health Association, 2016). This suggests that students are becoming increasingly stressed and unwell.

When students experience stress, it can lead to physical symptoms. Studies show that an increase in the number of stressful events a student experiences can exacerbate the physical symptoms they may be experiencing (Wilks, 2008). Physical discomfort or illness can result in decreased academic performance due to poor attendance, difficulty with focus or attention to tasks and challenges in motivating oneself to complete responsibilities. This can perpetuate the cycle of increased academic stress, maladaptive coping mechanisms and declining health status (Wilks, 2008). Left untreated, symptoms often increase in severity and frequency, ultimately becoming increasingly resistant to treatment (Lipson et al., 2016).

In addition to producing physical symptoms, stress, particularly academic stress, can produce psychological and psychosocial effects. A 2017 systematic literature review by Riberio et al.

identified that “psychological suffering is inherent in academic life” (p. 75). Academic stress is defined as the result of increased academic demands and insufficient skills or coping mechanisms to meet these demands; it is widespread in the post-secondary population (Wilks, 2008). Of the Canadian students who responded to the ACHA-NCHA Spring 2019 survey, 59.5% felt that within the last 12 months, their academics were “traumatic” or “very difficult to handle” (American College Health Association, 2019a). Academic stress may be experienced more intensely by international students than domestic students (Williams et al., 2018).

This type of stress can be particularly detrimental to students as they view themselves as having little control over their situation. These feelings of loss of control can contribute to their psychological distress (Huang et al., 2020). This distress can make it difficult or nearly impossible to succeed in their endeavours. Students who require but do not receive accommodations are less likely to graduate, which may affect future employment, and in turn, health (Gotlib et al., 2019). It would behoove the institution to support learners in their pursuit of individual-level skills and coping mechanisms to help mitigate the cumulative effects of stress.

2.1.3.3 Health and Personal Circumstances

Personal demographics and determinants of health may make some students more likely to experience stress and ill-health than others. Some students identify as part of a population known to experience more adversity and subsequent stress. International students, members of the LGBTQ community, graduate students, students of colour, first-generation students, and students who grew up in foster care are believed to be at higher risk for mental health challenges as a result of racism, acculturation, prejudice or low-socioeconomic status (National Council on

Disability, 2017). To date, prevention efforts focusing on providing social support, reducing stress and encouraging self-care have been considered best practice when targeting those at higher risk for mental health challenges (Jaworska et al., 2016).

Poor health, particularly poor mental health, can be detrimental to academic achievement. When mental health is poor, it can inhibit the core mission of learning and negatively impact participation and performance in academics (Burwell, 2017; Gulliver et al., 2019). The negative impacts of poor mental health can be relatively small, such as a penalty for late submission, or they can be (subjectively) calamitous, such as being unable to complete a course, semester, or an entire post-secondary program.

2.1.4 Why the Post-secondary Population is Important to Reach

2.1.4.1 Overview

The Ontario College Health Association identifies post-secondary students as a “unique and critical population” for mental health interventions (2009, p. 5). Embarking on a journey that will define their life course, students are subject to extraordinary opportunities and stressors. Many have left the comfort, support, and familiarity of their homes to pursue their academic and professional dreams. Often full of energy and eager to experience the zeitgeist of post-secondary life, students may find themselves poorly equipped to handle the stress, pressure and expectations placed upon them, resulting in increased distress (Ontario College Health Association, 2009). Pressures may be exacerbated by difficulty adapting to new social cultures, the responsibility of maintaining their own household or employment status while studying, or

the physical and emotional distance between them and “home” (Ontario College Health Association, 2009).

While these pressures and challenges can be overwhelming, they can also be mitigated. Students’ ability to successfully overcome difficult or harmful situations they might encounter as they transition into and progress through university depends on their own skills and characteristics, relationships with others, and the campus’s overall culture. Resilience to these challenges is built when individuals undergo and overcome an experience that presents a risk or threat of a negative outcome (Windle, 2011). By accepting the inherent vulnerability that comes with immersing themselves in a new, unknown and potentially turbulent environment, students have initiated a series of events that can ultimately cultivate resilience.

Resilience is defined as “the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma” (Windle, 2011, p. 152). Identified as a factor contributing to general wellness and mental health, it includes the individuals’ assets, resources and environments that can contribute to the manifestation of strength that allows an individual to recover from disruption (Windle, 2011). More generally known as the capacity to ‘bounce back’ and overcome adversity, this trait was once believed to be fixed. Now, it is considered to be a dynamic process that can vary across the life course (Windle, 2011).

Knowing that capacity for resilience is modifiable and that students are primed for learning and development, it stands to reason that post-secondary institutions may be well poised to support and help develop students’ capacity for resilience. This is particularly relevant when considering that the stress and pressure of attending a post-secondary institution may serve as a springboard

for the development of resilience—starting with small improvements in students’ ability to successfully navigate minor setbacks and challenges, and advancing toward to more significant gains in the personal resources students can bring to bear in situations of adversity and trauma. Like other life competencies, resilience grows progressively through increasingly difficult challenges.

This gives rise to the opportunity for the campus culture to support the development of personal resilience. By creating a campus with a sense of community and belonging, students have a network to support them as they work through the challenges they will inevitably face (Burwell, 2017). Interventions on campus can build resilience in a way that is kind, supportive and respectful of diversity.

2.1.4.2 Capacity for Individual and Collective Resilience

2.1.4.2.1 Individuals. Every student who arrives on campus brings with them a unique collection of attitudes and experiences. Some individuals have a natural propensity for resilience, while others must work to develop resilience-enhancing skills. For some, the customs, ideas and social behaviours of a post-secondary campus can add depth and richness to the educational experience, but for others, it can be intimidating and isolating.

International students, immigrants, or those studying in a language that is not native to them may have trouble coping with the challenges of university (Ontario College Health Association, 2009; Williams et al., 2018). They may find that new cultural attitudes and ideas conflict with their previous schemas. A pertinent example of this internal conflict is attitudes toward mental health.

Students who come from a background where mental illness was neither acknowledged nor accepted may experience considerable angst if they perceive a shortcoming in their mental health. They may isolate themselves to hide their “weakness.” To develop the capacity to cope, these students may need individual supports and an accommodating campus culture that allows them to experience new ways of understanding mental health in a comfortable, safe and non-judgemental manner.

2.1.4.2.2 Social Connections. Social support can mitigate the negative consequences of stress (Wilks, 2008). For example, when informational support (support focused on individual problem-solving, such as advice or information) from family and close friends is increased, the association between academic stress and depression decreased (MacGeorge et al., 2005). This stress reduction is attributed to the encouragement of functional coping behaviour (such as encouraging the student to study or submit assignments), brought about by the support (MacGeorge et al., 2005). In a study of 8,847 college students, 89% of those who received care did so due to their peers’ influence (Wolitzky-Taylor et al., 2020). This demonstrates the positive impact that social connections can have on a student who is experiencing academic stress.

These social connections may be significant for first-year students or those who are new to the campus. Many incoming students are away from their homes and established social networks for the first time, compounding the overwhelming experience of pursuing a post-secondary degree. “Students who have support networks to turn to are better able to work through their challenges and stress” (Burwell, 2017, p. 176). A sense of belonging can be paramount as it can help offset feelings and effects of loneliness and depression (Burwell, 2017).

2.1.4.2.3 Community / Campus Culture. Campus culture is deeply embedded and enduring. It emphasizes an organization's unique characteristics and offers meaning to its members; it is not easily altered and can often only be changed by catastrophic events or through intensive, sustained efforts (Peterson & Spencer, 1990). Campus culture affects students, and students can affect campus culture.

The way campus culture is perceived has been linked to various student behaviours, including alcohol consumption and intellectual development (Chen et al., 2016). Anecdotal evidence and shared stories become both the source and the sequelae of school norms and associated expectations of how students (should) behave. For example, whether accurate or not, Queen's University is known as a party school where students expect, and are expected to, drink heavily (Hughes, 2018; Underwood, 2018). Mount Saint Vincent, on the other hand, is known as a racially diverse school, with a well-established Afrocentric Support Group and an Aboriginal Student Centre, each with hired co-ordinators to oversee mentorship, academic counselling and social events (Education News Canada, 2020; McDonald & Ward, 2017; The College of Mount Saint Vincent, 2019). These norms and the structures that support them influence the student population.

Attitudes and values of staff, faculty and students create the campus culture and make vital contributions to the wellness of the student body as a whole. A school that is physically and emotionally safe and supportive encourages students to build their autonomy, take reasonable risks, learn from their mistakes, and grow – not only as scholars but as individuals and members of a healthy, productive society.

The impact of campus health and wellness support on students' ability to manage stress can be profound. For students who come from an unsupportive environment, the campus may be their preferred setting for improving their health and well-being. In some cases, if these students are sent away from campus, their risk of negative outcomes may increase (Morris et al., 2019). A recent survey found that an average of 62.3% of students who accessed services at a college counselling center claimed that the support they received helped them stay in school (Leviness et al., 2019). This underscores the importance of offering campus-level supports to students. For some, it makes the difference between a successful academic career and abandonment of educational pursuits.

2.1.5 On-Campus Mental Health Services

Against this backdrop, many universities are working diligently to provide individual care that builds students' resilience to the possibility of experiencing overwhelming levels of stress. Unfortunately, when a student seeks treatment for their mental health, they may meet several barriers.

2.1.5.1 Barriers to Accessing Service

Systemic barriers are evident within the structure of campus healthcare services. Many campus medical facilities have limits on the number of therapy sessions allowed per academic year. While these numbers vary, a study of 15 campuses found that seven campuses had limits of between 4 to 16 sessions per year (Eisenberg & Chung, 2012). By imposing restrictions on the

number of counselling sessions a student can access, their care may be truncated, resulting in deleterious effects on their physical health and overall well-being.

Many campus mental health interventions focus on treatments for the most commonly experienced mental health concerns, including anxiety and depression. Services are most likely to be directed to subpopulations such as LGBTQ, first-year and international students, emphasizing social support, stress reduction and self-care (Jaworska et al., 2016). Many campuses focus on “standard” interventions for these conditions, including group counselling, cognitive behavioural therapy, and psychopharmacological treatments (Francis & Horn, 2017). While these interventions aim to meet some specifically-identified students’ needs, they may, by nature of being so targeted, exclude students who could benefit from the services but who do not have a formal diagnosis or perceive themselves as part of the identified group.

Language barriers can impede help-seeking. Low English-language proficiency can create immense anxiety, particularly for students who excelled in academics in their native language (Williams et al., 2018). Lower linguistic proficiency can also become an impediment to making social connections, leading to increased isolation and failure to adjust to new cultures and surroundings (Chalunsooth & Schneller, 2011). Students who are less familiar with the language in which instruction or counselling services are offered may find themselves frustrated or unable to convey their thoughts and feelings without the appropriate vocabulary (Koçak, 2010). They may also experience the unique pressure of being responsible for translating for others in various situations (Williams et al., 2018). These enhanced challenges relating to language can be distressing and alienating for students.

Stigma is an all-too-common reason for failing to seek mental health treatment (Gawlik et al., 2018). Defined as “a mark of shame or discredit,” stigma can be present at structural, interpersonal and intrapersonal levels (Merriam-Webster, n.d.; Ungar et al., 2016). Structural stigma is presented through laws and policies (Ungar et al., 2016). It is strongly related to public stigma and refers to the stereotypes and prejudices held by members of a group or community (Eisenberg et al., 2009). Intrapersonal stigma, also known as self-stigma, occurs when individuals identify with a stigmatized group and their feelings of prejudice are directed towards the self (Eisenberg et al., 2009).

Despite the source of the stigma, and whether it is actual or perceived, it can be detrimental to health-seeking behaviours. Higher self-stigma is associated with lower help-seeking in adults and adolescents; some studies have also found a positive correlation between higher levels of perceived stigma and premature termination of treatment (Eisenberg et al., 2009). This is particularly pertinent for racial and ethnic minority students who may have higher stigma relating to mental health and higher attrition rates in treatment (Eisenberg & Chung, 2012).

2.1.5.2 Strategies to Reduce Barriers

To combat the growing mental health concerns on campus, many post-secondary institutions now strive to increase student resilience and ability to cope with stressors in an “upstream,” preventative manner. Top health officials, including Sylvia Matthews Burwell, former U.S. Secretary of Health and Human Services, states, “..no longer can [universities] consider students’ mental health to be outside their area of responsibility ... that responsibility has broadened to

include increasing students' resiliency" (Burwell, 2017, p. 150). Burwell continues, "Resiliency is about decreasing students' sense of overwhelming stress while fostering their growing autonomy to tackle life's challenges." Her statements emphasize that institutions are responsible for improving resilience to stressors by providing proactive care.

Indeed, campus mental health services are becoming a selling feature as post-secondary institutions strive to meet the rising demand for mental health support. Accessibility and quality of mental health services have become a feature ranked by students and published nationally (Maclean's, 2019). Some reports suggest that students are enrolling in post-secondary classes to access their chosen institution's mental health services (Center for Innovation in Campus Mental Health, 2020). In the ACHA-NCHA Spring 2020 survey, 30.1% of the students stated they received mental health or psychological services within the last 12 months. Of those, over half (53.6%) accessed services provided by their campus counselling or health center (American College Health Association, 2020). This can translate to approximately 15% of an institution's population seeking mental health support through their campus services.

Campus-based interventions that build individual, collective, and institutional resilience have potential to enhance students' capacity for managing hardships or significant stressors (Sibley et al., 2019). As such, institutions are increasingly considering or implementing innovative, problem-solving paradigms that strive to prevent suffering by enhancing the student population's individual and collective resilience. Being a campus that supports mental health and resilience demands new ways of thinking about mental health and delivering services.

2.1.6 e-Interventions for Mental Health

2.1.6.1 Online Interventions Reduce Barriers and Expand Reach

While the traditional paradigm for managing students' mental health has been clinical (aimed at treating students who have already experienced a breakdown in their ability to cope), there is value in adding more accessible, non-clinical interventions that focus on prevention and capacity development (Wolitzky-Taylor et al., 2019). Online interventions offer a way to do this. More specifically, to support post-secondary students' health, online resources can be directed towards prevention while emphasizing the importance of community and acknowledging that stress is a natural part of life (Burwell, 2017). Resources and prevention initiatives can focus on providing social support, encouraging self-care and reducing stress (Jaworska et al., 2016). The addition of population-based interventions can help improve the health and well-being of the campus as a whole by developing a supportive community, reducing sources of unproductive stress, and reducing widespread stressors that can result in unmanageable stress for individuals (Brownson et al., 2016). By creating environments that help students learn to manage obstacles and adversity, institutions help students cope with and overcome stressful events as they arise. By extension, this can lead to greater individual academic achievement, higher satisfaction and standings, and improved mental well-being and overall better health (Brownson et al., 2016).

There is another benefit to providing highly accessible, non-clinical, online resources. For some students, especially those who feel trepidatious about seeking help in conventional therapeutic settings, access to such services could be preferable. These students benefit from online resources that allow for access to materials from a preferred location at a time and pace that suits their comfort level. Online interventions can also be an appealing means of support for students

in alternative program deliveries, such as remote learners or those in experiential learning situations where students face time pressures and other demands presented by their academic commitments.

The familiar nature of the online landscape may serve emerging adults well when it comes to support. Research shows that individuals often seek informal help in place of more formal or professional service when faced with mental health concerns (Levin et al., 2018; Ryan et al., 2010). Furthermore, because internet-based interventions can reduce barriers to care, including cost, access, and privacy concerns (Ray et al., 2019), these electronic tools have the ability to reach remote or otherwise hard-to-access populations, including post-secondary students. Indeed, Ryan et al. (2010) found that university students expressed an intention to utilize online resources that increased with the severity of the distress they were experiencing, with 39.1%, 49.4% and 57.7% of low, moderate, and severely distressed students stating that they would use an online program to support well being. Overall, there seems to be both a need for online services and a desire among post-secondary students to use them.

2.1.6.2 Open Online Interventions

Online interventions have the potential to improve mental health by influencing protective behaviour (Ray et al., 2019). Those known as “closed services”—which are closely guided and monitored by a health professional and require a screening process and diagnostic interview to enter—may be more suitable for more severe conditions or those that require more support or attention of the facilitator (Andersson et al., 2013). In contrast, “open access” programs are generally automated with less direct oversight from a therapist or health professional. Also known as unguided programs, they generally reach larger groups at low cost (Andersson et al.,

2013) and can be used to improve and expand individuals' capacity to remain healthy, avoid escalation of unhealthy behaviours that contribute to poor mental health, and seek appropriate help for more severe problems.

Internet-based interventions have also been found to enhance health behaviour change and assist with health promotion activities, including reducing alcohol intake and increasing mindfulness and physical activity (Ray et al., 2019). Though they are not entirely free from challenges, these interventions show great promise for current and future health promotion interventions and programs.

Inspired by the increasing number of Massive Open Online Courses (MOOCs) offered by colleges, universities and other institutions, Massive Open Online Interventions (MOOIs) have been introduced in healthcare. Described as a novel way to deliver behavioural health services, these MOOIs are digital interventions that can be used a limitless number of times. Accordingly, MOOIs can help an almost infinite number of people and be made available to anyone with a computer who wishes to participate (Muñoz et al., 2016). This is in stark contrast to the consumable time of face-to-face practitioners, who, upon spending time with a client, can never re-use that time with another client. Moreover, the client can utilize these MOOI resources in a time, space, and geographic location that is comfortable for them, without sacrificing the therapeutic effectiveness of the intervention (Muñoz et al., 2016).

These types of interventions have been used with great success around the world. The San Francisco Stop Smoking Site was a MOOI that, within 30 months, reached a total of 292,978 visitors from 168 countries at the cost of \$200,000 – less than \$1 per participant (Muñoz et al.,

2016). Currently, in Canada, each \$1 invested in online psychological services could yield between \$1.78 to \$3.15 in savings to the clinical healthcare system, making the potential financial benefits of a MOOI compelling (Vasiliadis et al., 2017).

Of course, cost-effectiveness cannot be the only indicator of success. MOOIs must also be effective at achieving individual and population behaviour change goals. In this regard, the San Francisco Stop Smoking intervention saw 3,479 people (1% of all enrollees) quit smoking at follow-up. Quit rates using traditional smoking cessation interventions, such as a nicotine patch or group programs, typically yield quit rates 14-22% and 24-27%, respectively (Muñoz et al., 2016). However, because traditional interventions reach so few smokers compared to a MOOI, the overall population impact is much less than the MOOI.² For a health professional who invests an average of eight hours of face-to-face time into a client's quit attempt to yield a total of 3,497 successful quit attempts would take approximately 69.6 years of full-time practice. The MOOI achieved this number of quitters in just 2.5 years, illustrating the MOOI's success and reach (Muñoz et al., 2016).

Moodgym is another example of a successful MOOI. This free, online program is designed to help users manage symptoms of depression and anxiety. It is the product of more than 15 years

² Population impact refers to the proportion of a given population that benefits from an intervention. Thus, population impact depends on both the "efficacy" of the intervention (how well it works) and its "reach" (the number of people who use the intervention). This means population impact can be increased by making the intervention more efficacious or by increasing the number of people who use it. Clinical interventions tend to have high efficacy but very low reach. Population interventions, such as MOOIs, tend to have low efficacy, but a much higher reach. The high reach compensates for the low efficacy, and may result in a greater population impact than a more efficacious clinical intervention.

of research and design by the Center for Mental Health Research at The Australian National University and is currently used by over a million people worldwide (Moodgym, n.d.; Walk Along, n.d.). A meta-analysis of 12 studies revealed that Moodgym was effective at its goal of reducing depression and anxiety symptoms but also had the secondary effects of reducing hazardous alcohol consumption, reducing risk of suicide in high-risk populations and improving general mental well-being in users (Farrer et al., 2012; Guille et al., 2015; Powell et al., 2012). These findings suggest that the benefits of online interventions might extend far beyond their intended use.

Technology can give rise to resources that can support large, diverse populations to engage in behaviours that are personally and collectively health-enhancing. As such, it may be possible to support students' mental health and capacity for resilience using a MOOI-type intervention that engages students in actions that can improve to their ability to cope with stress, build social connections and help them contribute to their campus community. Research suggests that asking for commitments or pledges to a certain behaviour can help improve adherence to change. This is explored in the next section.

2.2 Pledges and Commitment Contracts

2.2.1 Understanding Pledges

Pledges have been used throughout history to influence health and behaviour. The 19th-century temperance movement required men to pledge abstinence from alcohol publicly. The Chinese “Revolution of 1911” saw parents pledging to refrain from foot-binding and forbidding their sons from marrying foot-bound women (Laverack, 2018). In present day, individual,

professional, and corporate pledges are used to influence behaviour in areas such as smoking cessation, chronic illness, and environmental stewardship (Koessler, 2019; Laverack, 2018). In the United States, reciting the Pledge of Allegiance to their country's flag is part of the daily routine for public school students in 46 states and government officials in the House of Representatives and Senate (Crawford, 2015). Recently, as part of the effort to combat the spread of the COVID-19 virus, the Ontario Hospital Association launched a social media campaign asking Ontarians to pledge to wear a face mask, maintain physical distance, avoid gatherings, and wash their hands (Ontario Hospital Association, 2020). Pledges are rooted in our history and culture and are present in our everyday lives.

Bosch-Capblanch et al., (2007), and Coupe et al., (2019), offer these perspectives on pledges. Pledges are a type of “commitment device” used to help individuals commit to a behaviour or outcome. They are an arrangement made with oneself, a medical practitioner, or carer. They can be written or verbal and can take on various forms, including oral agreement, pledge, or behavioural contract.

Pledges can be sorted into two broad, but distinct categories: hard and soft commitments (Coupe et al., 2019). Hard commitments have “real economic penalties for failure, or rewards for success” (p. 2). An example of a hard commitment is a contingency contract. This is an explicit agreement whereby a particular reward is promised, contingent upon the delivery of a predetermined behaviour (Bosch-Capblabch et al., 2007). These contracts often involve a person depositing a meaningful sum of money that is returned upon attaining the agreed-upon goal. Of course, requiring the individual to rally the finances needed for a deposit may prove prohibitive

for those with fewer socioeconomic means. Issues of equity and ethics—particularly for these populations—are also of concern. It may be that financially disadvantaged populations are better served by interventions that offer funds in exchange for goal attainment, as in the case of contest prizes for example. Even here though, numerous logistical, social, and ethical questions arise (e.g., what constitutes successful fulfillment of a pledge; are financial rewards coercive; etc.). Thus, even this approach may be both financially unsustainable and unethical (Coupe et al., 2019).

Soft commitments are free from any tangible reward or incentive. Instead, these commitments rely on the social pressure experienced to bring about change. Soft commitments have shown encouraging, positive results, particularly in the areas of behaviour change. In fact, in some cases, soft commitments have been shown to have longer-lasting effects than hard commitments (Coupe et al., 2019).

Both written and oral commitments have been proven to be effective at supporting behaviour change (McKenzie-Mohr, n.d.). The level of success varies depending on the setting and method of the decree. A written commitment appears to be more effective than a verbal one, and a pledge made in public is more effective than one made in private. Public commitments not only increase the tendency for an individual to engage in the behaviour to which they committed, but—by their public, visible nature—they also have an increased capacity to challenge or create social norms and foster diffusion of new ideas or behaviours (McKenzie-Mohr, 2020).

When considering pledges in the context of a population-based intervention, it lends itself well to a MOOI-style delivery which can mimic the support of a care provider without needing their direct oversight since MOOI's do not require extensive education or training to deliver (Bosch-Capblanch et al., 2007). This type of intervention can be effective for large swaths of people (Muñoz et al., 2016) without requiring the enormous cost of content development and creation of a human-machine interface. This suggests that pledges may be ideally suited for a population-oriented, online intervention, and that is less expensive easier to implement than other more complex interventions (Bosch-Capblanch et al., 2007).

2.2.2 How Pledges Work

2.2.2.1 Individual Change

Pledges are a commitment or promise to do something. Vanberg (2008) proposes that pledges are effective because promises trigger an individual's internal desire to act in a manner that is consistent with their words. He noted that the behaviour of a person who made a promise was consistent with their commitment when they interacted with the person who was the subject of the promise. Vanberg speculated that this may be done to avoid feelings of guilt that result from failing to meet others' expectations. As such, the theory of guilt aversion may contribute to efficacy and adherence to the pledge.

On the topic of guilt, it is essential to note that the pledges are most effective when obtained freely and without duress; commitments made voluntarily are more likely to result in the

promised behaviour occurring. Pledges seem to work best for behaviour that people are already interested in engaging in (McKenzie-Mohr, 2020).

In their review of 30 trials involving nearly 4,700 participants, observed that commitment devices such as pledges have been gainfully applied in areas of behaviour change related to substance use and addiction, weight loss, breast self-exams, and joint-protection to guard against arthritis (Bosch-Capblanch et al., 2007). In 15 of the 30 studies reviewed, at least one outcome showed a statistically significant improvement in behaviour in the group that employed a commitment device. The authors conclude that pledges can effectively support health behaviour change under certain conditions.

These results are promising, although admittedly weak. Indeed, limited success in 50% of studies reviewed may not be enough to incite the adoption of an intervention. On the other hand, the population impact of an intervention depends not just on its efficacy to alter individual behaviour, but on how many individuals can be reached by (and engaged in) the intervention. Given that pledges are categorically simple, cost-effective, and profoundly easy-to-use they can reach a very large proportion of the population. It becomes almost illogical and potentially a disservice to *not* employ them in behaviour change work occurring at the population level. At the very least, a commitment device should be considered a realistic, affordable, and actionable tool that can induce or improve desired behavioural outcomes in individuals.

2.2.2.2 Public/Organizational Change

Pledges are not uncommon in academia. Many institutions expect students to commit to a pledge or honour code to encourage academic integrity. A study of more than 4,000 students on 31 campuses found that schools who employed an honour code experienced a student-reported academic dishonesty rate of 54% compared to 71% on campuses without such codes (McCabe & Pavela, 2010). Moreover, when examining repeat occurrences of academic dishonesty, institutions with honour codes found that only 7% of students reported multiple offences of academic dishonesty compared to 14% at institutions without codes (McCabe & Pavela, 2010). There is evidence to suggest that honour codes may have a positive effect on associated behaviours, even when they are not explicitly outlined in the code. In a study of the non-medical use of prescription drugs in academic settings, it was noted that even though the use of such substances was not explicitly forbidden in the academic honour code, students were less likely to use substances if they perceived that it would violate the code (Reisinger et al., 2016).

In addition to achieving a reduction in academic dishonesty, by employing honour codes, institutions are communicating that academic integrity is a core value and that students must play an active role towards achieving the institution's goal (McCabe & Pavela, 2010). This shared vision and responsibility may inspire a student to act with integrity on an individual level to contribute to a positive culture at the institutional levels, thereby espousing feelings of belonging and connectedness.

Overall, it would appear that pledges made by individuals can have an effect on both individual and collective experiences. The pledge influences individual behaviour by encouraging actions

that are consistent with the commitment. This individual, in turn, affects the entire campus culture by way of participation in the community. A community that is made up of individuals who working to improve their individual skills can create a supportive environment that encourages and reinforces individual-level behaviour change.

2.2.2.3 Theoretical Construction of Pledges

2.2.2.3.1 Overview. Pledges are all about behaviour change. The Social Cognitive Theory (SCT) speaks to the constructs that underlie individual and collective behaviour change. Through its fundamental focus on reciprocal determinism, agency, and self-efficacy, the theory offers insight into how individual behaviour change both influences and is influenced by the physical, social, and political environment of the individual. In this regard, the SCT speaks to whether and how pledges might be used to influence not just individual but also collective knowledge, skills, self-efficacy, and behaviour.

2.2.2.3.2 Origin and Key Concepts. Albert Bandura developed the SCT as part of a more extensive theory, known as Social Learning Theory (LaMorte, 2019). The SCT states that, in addition to merely responding to the information received from their environment, an individual also seeks to understand and interpret this information. Until this theory, the role of individual cognition and volition were largely ignored when assessing behaviour. In a departure from the limited stimulus-response view of human behaviour, the SCT considers reciprocal determinism, the interaction of behavioural, cognitive, and environmental factors. In addition, the SCT also accounts for personal agency and goal realization.

Below, the SCT is explored based on a number of sources ((Bandura, 1989, 1998; Crothers et al., 2020; Lunenburg, 2011; Zimmerman, 2010)). Specific constructs reviewed include: reciprocal determinism, agency, and self-efficacy. These are explored in the context of how the theory supports the use of pledges as a behaviour change intervention.

Reciprocal determinism addresses the way three factors interact: an individual's *behaviour*, the physical and social *environment*, and an individual's *personal characteristics* (including their cognitions, values, knowledge, etc.). When individuals receive information from their environment, they may adjust their behaviour based on personal characteristics such as what they have learned from their previous experiences. In this interaction, individuals interpret their environment instead of simply responding to it. By the same token, individuals can make decisions to act upon and alter their environment rather than simply responding to it.

Agency is what allows an individual to take charge of their own functioning, development, and behaviour. It allows an individual to adapt, both internally and externally, to their circumstances, and thus form behavioural intentions. Individuals can set goals for themselves based on anticipated outcomes and figure out what actions they must take to achieve those goals.

According to the SCT, there are four specific functions through which human agency is exercised: self-observation, self-evaluation, self-reaction, and self-efficacy. Through self-observation, an individual monitors their actions to determine whether and how well they are achieving their goals. Strongly connected to self-observation is self-evaluation. This occurs when an individual compares their current situation against their desired goal. If a goal is too vague it

can be challenging for an individual to gauge their progress. It is important, therefore, to establish clearly defined goals with realistic timelines. These have a greater chance of being realized, and ultimately contribute to an individuals' sense of agency.

Self-reaction emerges from self-evaluation; it is the individual's reaction to their own performance. Regardless of whether their reaction is positive or negative, it can be personally growth-enhancing. When an individual is pleased with their performance, it can reinforce their intention and motivation to engage in the behaviour. Once they have achieved their goal, particularly if that goal was challenging, self-efficacy increases and they may choose to take on a more difficult task. If an individual is unhappy with their performance, they may choose to rally their resources and work harder to achieve the goal, or they may reconsider and lower their goal expectations. Sometimes, individuals give up. If they feel especially unsuccessful they may not try again. This speaks to the importance of setting realistic, reasonably-achievable goals.

Self-reaction, self-observation and self-evaluation may contribute to a person's desire to make changes in their life or lifestyle. Specifically, these functions of human agency could contribute to a desire to make changes to improve health and/or wellness.

Self-efficacy is an individual's assessment of their ability to overcome a challenge or obstacle. When individuals are confident in their abilities to overcome adversity they are more likely to attempt to do so. However, the opposite is also implied; when an individual has little belief that they will be successful, they are less likely to take on a challenge. Since an individual often only performs tasks when they know they will be successful, self-efficacy impacts what behaviours an

individual will engage in. Without sufficient confidence in their ability to successfully achieve desired results, an individual may be reluctant to initiate action at all.

Besides influencing whether an individual will initiate a task, self-efficacy also determines how long they will persevere when faced with obstacles. When an individual feels confident in their abilities, they are more likely to mobilize and sustain greater effort than if they feel incapable. Self-efficacy and judgement about one's self-efficacy are based on performance outcomes (previous positive and negative experiences), vicarious experiences (learning vicariously through the positive or negative experiences of others), physiological feedback (physical sensations experienced in the body), and verbal persuasion (encouragement or discouragement about an individual's performance or ability to perform a task).

2.2.2.3.3 Application of SCT Constructs to Pledges. Pledges reflect the reciprocal determinant and agentic concepts of the SCT. By making a pledge, individuals assume agency over their behaviours; they commit to a course of action that alters their own personal characteristics and impacts the social environment in which they exist. Pledges can present individuals with opportunities to gain personal knowledge and skills—for example, how to manage distress and overcome adversity. Pledges can call for actions that positively alter the individual's social environment—for example, by inspiring them to reach out to and connect with others. Pledges that are clear and time-limited facilitate individuals' ability to self-monitor and assess their actual progress against their desired goal. Likewise, pledges that balance challenge against achievability, such that accomplishing a pledge instills a sense of mastery and self-efficacy, spur

the individual to take on bigger challenges and thus continue to build their skills and self-efficacy in that area of functioning.

2.3 Summary

The impact of campus health and wellness support on students' ability to manage stress and build capacity for resilience can be profound. As universities work to provide supportive care, there is growing recognition that a promising avenue for mental health care may lie with population-based interventions that not only build and strengthen individuals' coping skills, but also contribute to a supportive campus culture, thus mitigating the effects of stress before they become overwhelming. In this context, many institutions have turned to online resources; MOOIs among them. Using MOOI-type interventions to support students' mental health and capacity for resilience can engage students in actions that improve their ability to cope with stress. The accessibility of MOOIs enables widespread use and creates the potential for all members of the campus community to become engaged in positive change. Asking for commitments or pledges to engage in a health-enhancing behaviour can help improve individuals' capacity for change and promote development of social connections that contribute to a positive campus culture.

Being a campus that supports mental health and resiliency does not translate to being a campus that is free from challenges, conflict or even failure. It is not sufficient to simply remove obstacles and then suggest that students have overcome them. Instead, institutions must create an environment that supports students as they develop the skills needed to overcome challenges in

their post-secondary lives and beyond. “Social systems that cultivate generalizable competencies create opportunity structures, provide aidful resources and allow room for self-directedness increase the chances that people will realize what they wish to become” (Bandura, 1989, p.75). By supporting all students’ mental, physical and emotional growth, campuses can promote the development of the skills needed to overcome the challenges, conflicts, and failures present in everyday life.

2.4 Purpose

2.4.1 Underpinnings of Study

Based on the need for non-clinical mental health supports that can help forestall post-secondary students’ susceptibility to more serious mental health troubles, an evidence-informed, theory-based initiative called CopeCareConnect was developed at Brock University.

CopeCareConnect is a mental health promotion initiative designed to foster a campus culture that reduces distress and increases resilience among all campus citizens, especially students (*CopeCareConnect*, 2020). Designed for students by students, CopeCareConnect ran on the Brock University campus from 2014 until 2017, garnering accolades and a provincial award for its innovative approach to student mental health.

With the onset of the COVID-19 pandemic in 2020, considering obvious needs for mental health supports on post-secondary campuses, the decision was made to restore the initiative. The initiative strongly supports Brock’s strategic priority to offer all students a transformational and accessible university experience that produces engaged citizens who are resilient, involved,

career-ready and versatile. Likewise, it helps to bolster Brock's national first-place standing for provision of university mental health services (Maclean's, 2019). Even so, it is eminently generalizable to other institutional settings and can serve a broad swath of the young adult population. The generalizability of the intervention makes it worthy of investigation in order to generate knowledge that might be used in other settings.

At its core, CopeCareConnect delivers age-tailored, empirically-tested digital and print resources to students primarily through partnerships with Health Services, residences and active, campus-wide outreach. Each semester, students in an upper-level Health Sciences (Bachelor of Public Health) course implement dynamic, tailored, campus-wide campaigns that motivate all members of the Brock University community to access CopeCareConnect.

Pertinent to the current study a user-friendly website, CopeCareConnect.ca, is a key feature of the broader initiative. See Appendix B. Student-oriented information and links to on- and off-campus programs and services that support physical and mental health are available. More crucially, the website offers a unique, action-oriented pledge system that invites visitors to choose a 2-week coping, caring, or connecting pledge in support of their own and/or others' good mental health.

Nine evidence-informed pledges are included in the CopeCareConnect intervention. The pledges align with the intervention's three tenets—coping, caring, and connecting—with three pledges developed for each tenet. Each of CopeCareConnect's nine pledges is based on evidence of its potential for improving personal, interpersonal, or collective skills. The pledges deliberately operationalize theoretical constructs from the Social Cognitive Theory.

2.4.2 Purpose Statement

At this stage in the development of CopeCareConnect, it is important to know more about who is using the pledge system, how they are using it, and whether the potential exists for such an initiative to reach students who might individually or collectively benefit from taking the positive actions that comprise the pledges.

The purpose of this study is to investigate which pledges are selected most frequently and by whom. Specifically, it examines the characteristics of students according to which pledge they make. Knowing that large scale interventions can lose their ability to target priority populations, this study seeks to understand if this campus-wide approach reaches the highest-risk populations while still engaging the entire student body.

2.4.3 Research Questions

These specific research questions are addressed:

1. Of the visitors to the site: (a) how many access the pledge system? and (b) how many make a pledge?
2. Of the nine pledges: (a) how frequently is each individual pledge selected? (b) how frequently is each type of pledge (i.e., coping, caring, connecting) selected?

3. What are the demographic (age gender), academic (year of study, standing), and behavioural characteristics (use of alcohol, nicotine, cannabis, other recreational drugs, prescribed medication for mental health concerns) of students who make a coping pledge, a caring pledge, a connecting pledge?
4. Are there differences among students who select the different types of pledges—i.e., coping, caring, connecting?
5. Is there congruence between the constructed categorization of the pledge (as a coping, caring, or connecting pledge) and students' stated reason for selecting it—i.e., to better cope, to show they care, to enhance connections?

3.0 METHODOLOGY

3.1 Ethical Clearance

This study has been reviewed and received clearance from Brock University's Research Ethics Board (file #19-318). The Certificate of Ethics Clearance is provided in Appendix A. To secure ethical clearance, issues of online survey, data security, personal and social risks to participants and issues of power were addressed.

The study survey is hosted on the CopeCareConnect website and is managed by a Canadian company located in Waterloo, Ontario. The site uses state-of-the-art encryption and firewalls. No commercial or out-of-country survey tools are used in this study. All information collected is treated as confidential and kept under password protection. When results of the study are reported, only aggregate data is used, individual-level data is never disclosed.

Visitors arrive at the CopeCareConnect pledge website voluntarily, in response to a social marketing campaign. Participation in the study is completely voluntary and not mandatory to complete a pledge. All pledgers complete the same survey, but only those who offer informed consent are included in the study.

Acknowledging that some students who make a pledge may feel especially vulnerable, all survey questions are clearly marked with a '*Prefer not to answer*' option. This allows participants to skip any questions that they do not feel comfortable answering. To support all those who visit the site, regardless of whether they make a pledge and/or agree to participate in the study,

information for many on- and off-campus resources and mental health support services are provided.

3.2 Pledges

Nine evidence-informed, theory-based pledges comprise the CopeCareConnect pledge intervention. Based on evidence of its potential for improving personal, interpersonal, or collective skills, the pledges deliberately operationalize theoretical constructs from the Social Cognitive Theory.

For each of the intervention's three tenets—coping, caring, and connecting—three pledges were developed in line with scientific literature related to student distress, mental health and resilience, and with attention to behaviour change principles spelled out in the SCT. Based on expert input and extensive experience with a highly successful behaviour change initiative for young adults, it was determined that each pledge should be paired with supplemental information about how the behaviour enhances coping, caring or connecting. Thus, for example, the coping pledge, *Twice a week, I will spend 10 minutes in a natural outdoor setting*, is based on research suggesting natural environments can improve mood state, well-being and capacity for health (Bratman et al., 2019; Van Den Bosch & Ode Sang, 2017; White et al., 2018)

The pledges were refined by a paid team of adult and young adult experts but were not specifically focus-tested with the target audience. Results of this study (and data being gathered in other settings) are expected to provide ideas about whether and how to further refine the pledges. Table 1 shows the nine pledges, their associated tenet, and the information offered to prospective pledgers on the CopeCareConnect website.

Table 1*Pledges and Associated Empirical Evidence*

Tenet	Pledge	Empirical Evidence
Cope	<p>...each day, I will write down 1 positive thing about myself.</p> <p>...within the next 24 hours I will register for a workshop offered within the next 2 weeks.</p> <p>...twice a week, I will spend 10 minutes in a natural outdoor setting.</p>	<p>People who identify positive qualities about themselves are happier.</p> <p>Students who focus on the process of learning tend to achieve higher test scores than those who just work to get good grades. A→Z Learning Services offers free workshops about essay-writing, group work, studying for exams, and more.</p> <p>Spending a few minutes outside can decrease blood pressure, reduce risk of diabetes and heart disease, while improving mood and sleep patterns.</p>
Care	<p>...I will not post altered photos on my social media.</p> <p>...once a day, during a face-to-face conversation with another person, I will resist using my phone.</p> <p>...I will learn more about suicide prevention & add the Good 2 Talk helpline number to my phone contacts.</p>	<p>To gain attention and followers, people post things on social media that are false, photoshopped or exaggerated. This can cause feelings of guilt, inadequacy and jealousy that are damaging to mental health.</p> <p>Phubbing is snubbing someone by using your phone during a face-to-face conversation. Phubbing can make people feel unappreciated. It reduces healthy, real-life connections.</p> <p>When people are hurting, their behaviour can change. It's important to notice and to ask "are you okay?" Listen to them. Share a crisis line phone number. It could save a life.</p>
Connect	<p>...twice a week, I will introduce myself to someone new and ask them about their field of study.</p>	<p>Brock has a diverse student population. Meeting new people and learning more about them can build relationships and strengthen connections in the Brock community.</p>

Tenet	Pledge	Empirical Evidence
...I will avoid using words that stigmatize mental illness and share this thought with 2+ people.	...in at least 1 conversation per day, I will totally resist sharing statements one person has said about another	Using words like “crazy”, “nuts” or “loco” can make people who live with mental illness feel excluded, isolated, distressed or weak. It can prevent people from sharing their experiences and seeking help. People spend 65-90% of their conversations gossiping. Gossip can undermine the health and well-being of everyone involved.

3.3 Participants

Participants in this study are individuals who visit the CopeCareConnect website, click “*Make a Pledge,*” indicate “*I’m making a pledge; DO use my answers for the study*” and answer “*Yes*” to “*I attend Brock University.*”

3.4 Measures

3.4.1 Survey Questions

Survey questions are described below. It should be noted that the option “*Prefer not to answer*” was offered for all questions to allow participants to skip questions while maintaining active-entry of data for each survey item. These responses are treated as missing data. The survey is presented in Appendix C.

3.4.1.1 Demographic Characteristics

Participants indicate their age and gender identity (*female; male; intersex – female; intersex – male; intersex, do not identify as either female or male; trans – female to male; trans – male to female; trans, do not identify as totally female or male; Two-Spirit; another gender or do not know*).

3.4.1.2 Academic Characteristics

Participants indicate their year of study as 1st, 2nd-5th, or graduate student. They report their “approximate overall average” (*below 50%; 50-64%; 65-79%; and above 80%*).

3.4.1.3 Behaviour

Participants report how often in the past month they: consumed alcohol, vaped nicotine, smoked cigarettes, used cannabis, used other recreational drugs, and took prescribed medication for mental health concerns. They categorize their use of each substance as: *not at all, once or twice altogether, some days each week, or every day or almost every day*.

The measures of vaping, smoking, recreational drug use and prescription medication use are dichotomized such that respondents are scored as no past-month use, or past-month use. Items referring to alcohol and cannabis are trichotomized such that participants are grouped as no past-month use, less-than-daily past-month use, or daily past-month use.

3.4.1.4 Pledge Selection and Reason

From the list of nine pledges, participants indicate the one they plan to do. They also indicate on a 7-point Likert scale how strongly they agree or disagree with each of the following statements: *“I picked this pledge to help me cope with things in my life,” “I picked this pledge to show others I care about them,”* and *“I picked this pledge to make my institution a better place to be.”* Higher scores represent greater agreement.

3.5 Procedures

Participants are recruited through social marketing activities. While the CopeCareConnect website is available year-round, at least twice a year, undergraduate Public Health students implement a 3-week social marketing campaign to intensively promote the CopeCareConnect initiative and drive students to the website and pledge system.

Website visitors who choose to make a pledge do so by clicking a button to open the registration form (i.e., the survey). At this point, pledgers are offered the option of entering or declining to enter the study. A full description of the study is presented to ensure consent decisions are informed. Consenting volunteers complete and submit the survey.

3.6 Analytic Plan

3.6.1 Data Input and Cleaning

All data are collected using an online survey completed by the participant. These data are automatically downloaded into a database. Because no skips are permitted in the survey, data were generally complete and clean. Frequencies were used to check for possible entry errors for age. “Prefer not to answer” responses were treated as missing.

3.6.2 Software

Data were analyzed using IBM SPSS Version 26.

3.6.3 Analyses to Describe Sample

Frequencies were run to generate a description of the sample which included the participants’ average age, and the percentage of students in each gender, year of study, and academic standing. For each behaviour, consuming alcohol, smoking, vaping, using cannabis, recreational drugs or mental health medications, the percent of participants’ past-month frequency of use was determined.

3.6.4 Analyses to Address Research Questions

3.6.4.1 Research Question 1. Of the visitors to the site: (a) how many access the pledge system? and (b) how many make a pledge?

The number of visitors who accessed the CopeCareConnect.ca website was determined using reports from Google Analytics. The number and percent of visitors who accessed the pledge page and who made pledges were calculated using Google Analytics and pledge data.

3.6.4.2 Research Question 2. Of the nine pledges: (a) how frequently is each individual pledge selected? (b) how frequently is each type of pledge (i.e., coping, caring, connecting) selected?

Frequencies were conducted to obtain the number and percent of respondents making each of the nine pledges were determined. Pledges were grouped according to each tenet (coping, caring, connecting), and the number and percent of respondents in of each group were obtained.

3.6.4.3 Research Questions 3 and 4. What are the demographic, academic, and behavioural characteristics of students who make a coping pledge, a caring pledge, a connecting pledge? and, Are there differences among students who select the different types of pledges?

Research questions 3 and 4 were answered using a multinomial logistic regression. Multinomial logistic regression is used to determine whether responses to predictor variables are associated with the category respondents chose the variable of interest. In the current study, respondents are in one of three categories based on whether they made a coping, caring or connecting pledge. The predictor variables were: age (entered as a continuous variable), gender, year of study,

academic standing, and substance use behaviours. Thus, the multinomial regression analysis was used to determine whether those characteristics of participants are associated with whether they pledged to cope, to care, or to connect.

While multinomial logistic regression analysis makes few assumptions about the type and distribution of the data, there are some. These include: independence of observations; mutually exclusive and exhaustive categories of the dependent variable; absence of multicollinearity among predictors; linearity; and absence of outliers. All assumptions were checked prior to performing the analysis.

Although the logistic regression was run as planned, due to the small sample size, the decision was made to use crosstabulations to explore bivariate relationships between the demographic, academic, and behavioural characteristics of students and their choice of a coping, or caring, or connecting pledge.

3.6.4.4 Research Question 5. Is there congruence between the constructed categorization of the pledge (as a coping, caring, or connecting pledge) and students' stated reason for selecting it—i.e., to better cope, to show they care, to enhance connections?

Three separate repeated measure ANOVA tests were conducted. First, for just participants who picked coping pledges, a repeated measures ANOVA was used to test for mean differences across the three items measuring the participant's reasons for choosing their pledge: "*to help me cope with things in my life,*" "*to show others I care about them,*" or "*to make my institution a better place to be.*" Second, the same analysis was conducted for just participants who selected

caring pledges. And finally, the analysis was done for just participants who selected connecting pledges.

Assumptions associated with this statistical procedure include: interval level of measurement and normal distribution of the dependent variables, and absence of outliers and sphericity. All assumptions were checked prior to performing the analyses.

4.0 RESULTS

4.1 Sample Recruited

A total of 93 respondents consented to participate in the study. Most (84.9%) identified as female; 14.0% identified as male; and 1.1% identified as another gender. Among the 79 who reported their age, the average was 21.7 ($SD = 5.0$), with a range of 16 to 44 years.

In response to the question '*I attend Brock University*,' 96.8% said yes, 2.2% said no, and 1.1% did not respond. Most respondents (75.3%) identified as second, third- or fourth-year students; 20.5% identified as first year; and 2.2% stated they were not currently a student. Among the 93 respondents, 49.5% reported their average as '*65-79%*'; 43.0% stated their average was '*greater than 80%*'; and 7.5% did not respond.

Frequencies of use of alcohol, nicotine products, cannabis, recreational drugs, and prescribed medication for mental health concerns are reported in Table 2.

4.2 Steps to Generate Final Sample

4.2.1 Data Cleaning

Prior to analysis, a visual scan of frequencies outputs for all variables suggested that minimal data were missing, and missing scores occurred non-systematically. Therefore, where a score was missing for a categorical variable, the decision was made to apply a general rule of

Table 2*Past-Month Substance Use Behaviours of All Respondents (N = 93)*

Frequency of use in past 30 days	Substance											
	Alcohol		Cigarettes		Vape		Cannabis		Recreational drugs		Medication prescribed for mental health concerns ^a	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Not at all	49	52.7	90	96.8	83	89.2	72	77.4	92	98.9	80	86.0
Once or twice	27	29.0	1	1.1	1	1.1	9	9.7	1	1.1	1	1.1
Some days	15	16.1	0	0.0	2	2.2	4	4.3	0	0.0	0	0.0
Every day or almost every day	2	2.2	2	2.2	7	7.5	8	8.6	0	0.0	9	9.7

^a1 respondent did not answer.

substituting the modal response of all respondents. The mean response was substituted where data were missing for a continuous variable. Missing cases, modes and means for demographic, academic and behavioural characteristics, are reported above and in Table 2. Missing scores were also observed for the variables used to assess-respondents' reasons for selecting their pledge (*I picked this pledge to help me cope, ...to show I care, ...to connects with others*). Missing data for the 2, 6 and 2 cases (respectively) were replaced with sample means of 6.3, 4.8, and 5.1 (respectively).

4.2.2 Applying Exclusions

Of the 93 respondents who participated in the study, the two people who responded 'No' to 'I attend Brock University,' the one who did not respond, and the person who identified as another gender³ were not retained, leaving a final sample of 89 Brock University students.

4.3 Final Sample: Characteristics and Behaviours

Of the 89 Brock University students retained in the final sample, 86.5% identified as female. Their average age was 21.5 (SD = 4.3). The youngest was 16 years old, and the oldest was 38. Of these, 21.0% identified as a first-year student, 75.3% identified as either a second-, third- or fourth-year student, and 2.2% of the final sample were graduate students. Almost half, (48.3%)

³ To protect the identity of the person who selected that they identify as a gender other than male or female, their specific response is not disclosed, and their data are not included in the final sample.

of the final sample of Brock University students stated that their average grade was between 65-79% and 44.9% stated that their average was 80.0% or above.

Frequency data for the use of alcohol, nicotine products, cannabis, recreational drugs, and prescribed mental health medication are reported in Table 3.

4.4 Answers to Research Questions

4.4.1 Research Question 1

To answer the questions, *Of the visitors to the site: (a) how many access the pledge system? and (b) how many make a pledge?* Data captured by Google Analytics were used.

During the study period (September 2020 to June 2021), a total of 966 unique visitors accessed the website, CopeCareConnect.ca, a total of 2,124 times. The interactive page, where visitors register their pledge, was accessed a total of 170 times. Of these, 114 (67.1%) submitted a pledge form.

Users visited the website an average of 2.18 times, stayed on the site an average of 2.12 minutes, and viewed an average of 1.52 pages. While on the site, visitors accessed the homepage, where the pledges are listed, a total of 2,494 times. The higher number of page views, compared to the number of website visits can be attributed to visitors using the ‘back’ button on their browser to return to the homepage after navigating away, or the homepage being refreshed or reloaded once a visitor was already on the site.

Table 3*Past-Month Substance Use Behaviours of Final Sample (N=89)*

Frequency of use in past 30 days	Substance											
	Alcohol		Cigarettes		Vape		Cannabis		Recreational drugs		Medication prescribed for mental health concerns ^a	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Not at all	47	52.8	87	97.8	80	89.9	69	77.5	88	98.9	76	85.4
Once or twice	25	28.1	1	1.1	1	1.1	9	10.1	1	1.1	1	1.1
Some days	15	16.9	0	0.0	2	2.2	3	3.4	0	0.0	2	2.2
Every day or almost every day	2	2.2	1	1.1	6	6.7	8	9.0	0	0.0	9	10.1

^a1 participant did not answer this item.

4.4.2 Research Question 2

To answer the questions, *Of the nine pledges: (a) how frequently is each individual pledge selected? and (b) how frequently is each type of pledge (i.e., coping, caring, connecting) selected?* frequency analyses were conducted. Results are displayed in Table 4. Most of the 89 participants (69.7%) selected a coping pledge; 16.9% selected a caring pledge; and 13.5% a connecting pledge.

4.4.3 Research Question 3

To determine *What are the demographic, academic, and behavioural characteristics of students who make a coping pledge, a caring pledge, a connecting pledge?* frequency analyses were run. Table 5 shows the demographic and academic characteristics of students according to whether they made a coping, or caring, or connecting pledge. Table 6 shows the frequency of health-related behaviours of students according to whether they made a coping, or caring, or connecting pledge.

4.4.4 Research Question 4

Research question 4 asked: *Are there differences among students who select the different types of pledges?* A multinomial logistic regression was conducted to model the relationship between the demographic, academic, and behavioural predictor variables and pledge selection (coping, caring, or connecting).

Table 4*Frequency of CopeCareConnect Pledges Selected by Students*

Tenet	Pledge	<i>n</i>	%
Cope	...each day, I will write down 1 positive thing about myself.	34	38.2
Cope	...twice a week, I will spend 10 minutes in a natural outdoor setting.	26	29.2
Care	...once a day, during a face-to-face conversation with another person, I will resist using my phone.	10	11.2
Connect	...in at least 1 conversation per day, I will totally resist sharing statements one person has said about another	5	5.6
Connect	...I will avoid using words that stigmatize mental illness and share this thought with 2+ people.	5	5.6
Care	...I will not post altered photos on my social media.	3	3.4
Connect	...twice a week, I will introduce myself to someone new and ask them about their field of study.	2	2.2
Cope	...within the next 24 hours I will register for a workshop offered within the next 2 weeks.	2	2.2
Care	...I will learn more about suicide prevention & add the Good 2 Talk helpline number to my phone contacts.	2	2.2

Table 5

Demographic and Academic Characteristics of Students Grouped According to the Type of Pledge They Selected

Variable	Type of pledge selected					
	Cope		Care		Connect	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
Male-identifying	7	11.3	3	20.0	2	16.7
Female-identifying	55	88.7	12	80.0	10	83.3
Year of study						
1 st year	11	17.7	3	20.0	5	41.7
2 nd , 3 rd , 4 th year	49	79.0	11	73.3	7	58.3
Graduate student	2	3.2	1	6.7	0	0.0
Average grade						
< 50%	0	0.0	0	0.0	0	0.0
50 - 64%	0	0.0	0	0.0	0	0.0
65 - 79%	37	59.7	6	40.0	6	50.0
> 80%	25	40.3	9	60.0	6	50.0

Table 6

Past-month Substance Use Behaviours of Students Grouped According to the Type of Pledge They Selected

Variable	Type of pledge selected					
	Cope (<i>N</i> = 62)		Care (<i>N</i> = 15)		Connect (<i>N</i> = 12)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Alcohol						
Not at all	35	56.5	7	46.7	5	41.7
Once or twice	18	29.0	2	13.3	5	41.7
Some days each week	9	14.5	5	33.3	1	8.3
Daily or almost every day	0	0.0	1	6.7	1	8.3
Cigarettes						
Not at all	61	98.4	15	100	11	91.7
Once or twice	1	1.6	0	0.0	0	0.0
Some days each week	0	0.0	0	0.0	0	0.0
Daily or almost every day	0	0.0	0	0.0	1	8.3
Vape						
Not at all	56	90.3	13	86.7	11	91.7
Once or twice	1	1.6	0	0.0	0	0.0
Some days each week	1	1.6	1	6.7	0	0.0
Daily or almost every day	4	6.5	1	6.7	1	8.3

Variable	Type of pledge selected					
	Cope (<i>N</i> = 62)		Care (<i>N</i> = 15)		Connect (<i>N</i> = 12)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Cannabis						
Not at all	48	77.4	12	80.0	9	75.0
Once or twice	6	9.7	1	6.7	2	16.7
Some days each week	3	4.8	0	0.0	0	0.0
Daily or almost every day	5	8.1	2	13.3	1	8.3
Recreational drugs						
Not at all	61	98.4	15	100	12	100
Once or twice	1	1.6	0	0.0	0	0.0
Some days each week	0	0.0	0	0.0	0	0.0
Daily or almost every day	0	0.0	0	0.0	0	0.0
Prescribed medications						
Not at all	52	83.9	14	93.3	11	91.7
Once or twice	1	1.6	0	0.0	0	0.0
Some days each week	2	3.2	0	0.0	0	0.0
Daily or almost every day	7	11.3	1	6.7	1	8.3

With the exception of age, which was continuous, all predictors were either dichotomous due to respondents' selection of answers (i.e., gender and academic standing) or operationally dichotomized in order to ensure sufficient *n*'s per cell for analyses (i.e., year of study, alcohol use, nicotine use, cannabis use, recreational drug use, and use of medication prescribed for mental health). The dichotomization procedures are explained below.

With respect to measures of academic characteristics, year of study was dichotomized into "First year" and "Higher." For the variable assessing academic standing, all responses fell into either the "65-79%" or the "80% or higher" option with no students selecting "50-64%" or "below 50%" so no additional re-categorization was required.

All measures of past-month substance use were dichotomized to represent use or no use.

Trichotomization into three categories representing no use, less-than-daily use, and daily use was considered based on literature suggesting possible differences in personal and health characteristics and outcomes of individuals who use alcohol, cannabis, and other recreational drugs substances at these frequencies. However, due to the very small numbers of respondents reporting daily use of alcohol, cannabis and recreational drugs, responses were collapsed into two categories: use and no use. Measures of cigarette smoking and vaping were combined into a single measure of nicotine use on the premise that cigarettes and vaping are both nicotine-delivery devices. Respondents reporting past-month use of either (or both) of these nicotine delivery systems were categorized as having used nicotine in the past month.

The addition of the predictors to the model that contained only the intercept did not improve the fit between the model and the data, and the overall model did not reach significance $\chi^2(16, N = 89) = 14.74, p = .54$. These findings are presented in Table 7.

Given that there were no significant findings in the multinomial logistic regression, a series of crosstabulations were performed to probe for any potential bivariate associations. No significant associations were observed. Tables are reported in Appendix D.

4.4.5 Research Question 5

The final research question asked, *Is there congruence between the constructed categorization of the pledge (as a coping, caring, or connecting pledge) and students' stated reason for selecting it—i.e., to better cope, to show they care, to enhance connections?*

To determine whether there was a statistically significant difference between the constructed category of the pledge and the students' reason for selecting the pledge, three separate one-way repeated measures ANOVA were conducted. The first was conducted using data from those who chose coping pledges, the second with the data from those who chose a connecting pledge, and the last was conducted with data collected from those who made a connecting pledge.

The data for those who picked a coping pledge had no outliers and were normally distributed as assessed by boxplot and Shapiro-Wilk test. Assumption of sphericity was violated as determined by Mauchly's test of sphericity. The overall F test with Greenhouse-Geisser correction applied (for this violation) was significant, $F(1.63, 99.63) = 58.37, p = .00$. Post-hoc comparisons with

Bonferroni corrections showed each mean was significantly different from each other. See Figure 1.

The data collected from those who made a caring pledge held no outliers and was normally distributed as revealed by a boxplot and Shapiro-Wilk test. The assumption of sphericity was met as assessed by Mauchly's test of sphericity. However, the mean scores were not significantly different from the mean scores for caring or connecting, $F(2, 28) = 1.61, p = .22$. See Figure 2.

The data collected from those who selected a connecting pledge was free from outliers and was normally distributed as assessed by a boxplot and Shapiro-Wilk. The assumption of sphericity was violated as determined by Mauchly's test of sphericity, so the Greenhouse-Geisser correction was applied to the F-test. The overall F test was found to be non-significant, $F(1.36, 15) = 1.29, p = .29$, and it was determined that there were no significant differences in means, compared to those for coping or caring. See Figure 3.

Table 7

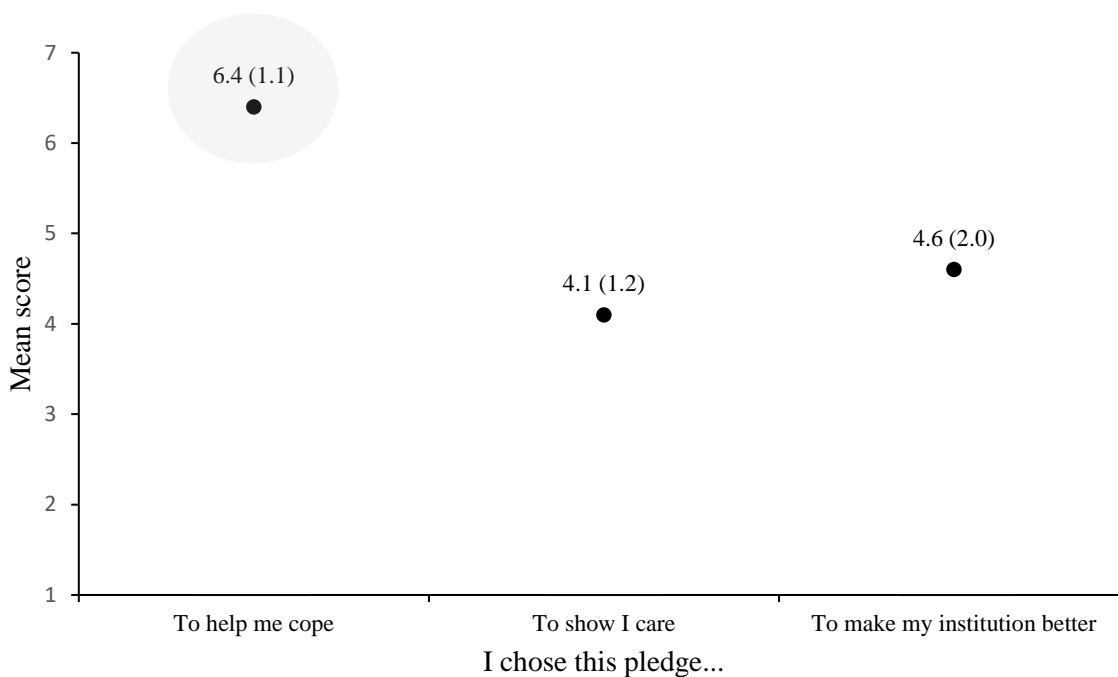
Multinomial Logistic Regression Model Predicting Likelihood of Selecting Caring or Connecting (vs Coping) Pledge Across Demographic, Academic and Behavioural Characteristics of Students in the Study

	Exp (B) ^a	Wald	95% Confidence Interval	
			LL	UL
Care				
Age	1.08	1.05	.93	1.25
Gender (Male; Ref = Female)	0.48	0.79	.10	2.42
Year (1 st ; Ref = Higher)	1.52	0.21	.25	9.08
Grade (65-79%; Ref = >80%)	0.44	1.59	.12	1.58
Alcohol (Use; Ref = No use)	0.71	0.21	.16	3.12
Nicotine (Use; Ref = No use)	0.50	0.46	.70	3.66
Cannabis (Use; Ref = No use)	1.14	0.02	.23	5.68
Medication (Use; Ref = No use)	4.59	1.51	.41	52.00
Connect				
Age	1.03	0.08	.85	1.24
Gender (Male; Ref = Female)	0.30	1.40	.04	2.21
Year (1 st ; Ref = Higher)	14.40	5.62	1.59	130.66
Grade (65-79%; Ref = >80%)	1.18	0.05	.26	5.41
Alcohol (Use; Ref = No use)	0.18	2.77	.02	1.36
Nicotine (Use; Ref = No use)	0.81	0.35	.09	7.46
Cannabis (Use; Ref = No use)	0.97	0.00	.16	5.78
Medication (Use; Ref = No use)	7.13	1.68	.37	139.60

Note. The reference category is Cope. ^aThis is equivalent to the adjusted odds ratio.

Figure 1

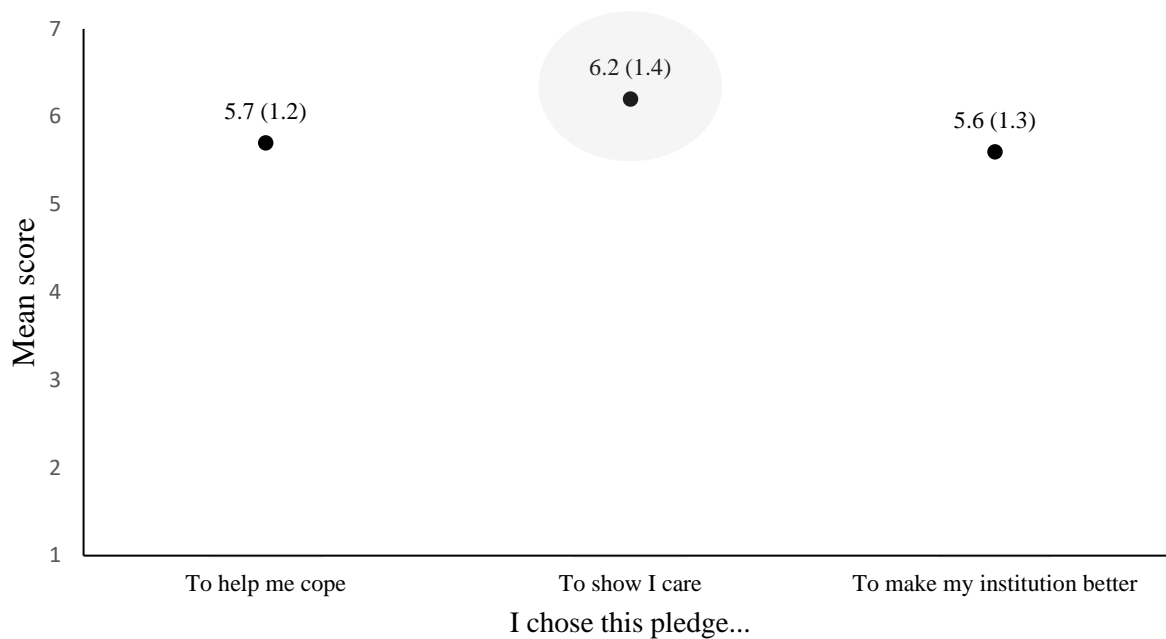
Respondents Who Selected a Coping Pledge Report Why They Did So



Note. For each item, participants rated agreement on a 7-point Likert scale (1=*strongly disagree*; 7=*strongly agree*). Shading shows item expected to have highest score. $F(1.63, 99.63) = 58.37, p = .00$.

Figure 2

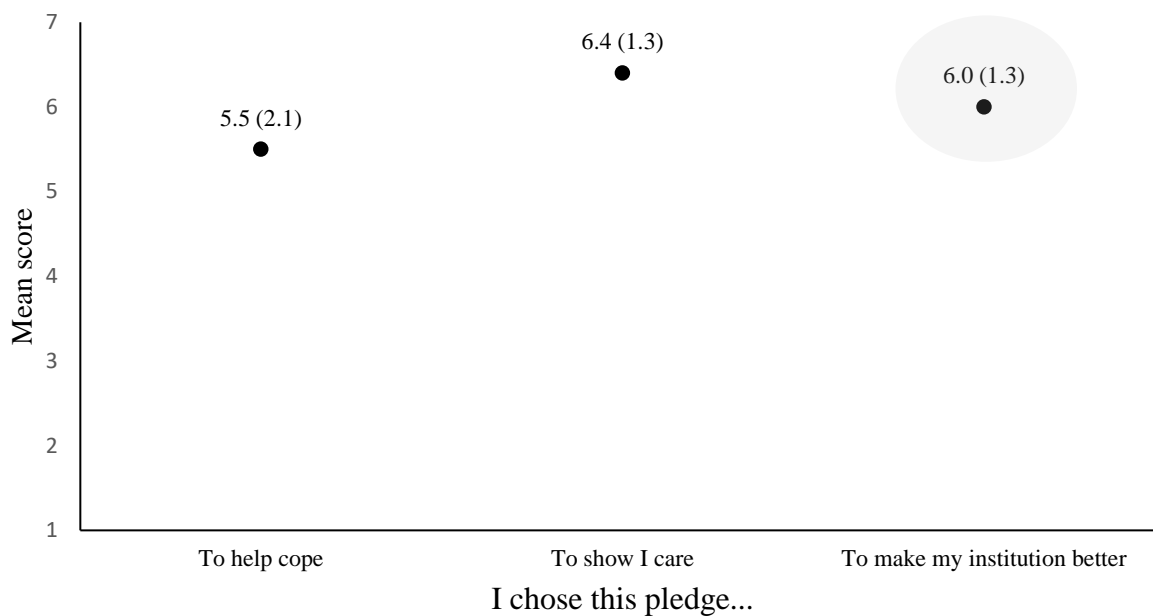
Respondents Who Selected a Caring Pledge Report Why They Did So



Note. For each item, participants rated agreement on a 7-point Likert scale (1=*strongly disagree*; 7=*strongly agree*). Shading shows item expected to have highest score.
 $F(2, 28) = 1.61, p = .22$.

Figure 3

Respondents Who Selected a Connecting Pledge Report Why They Did So



Note. For each item, participants rated agreement on a 7-point Likert scale (1=*strongly disagree*; 7=*strongly agree*). Shading shows item expected to have highest score. $F(1.36, 15) = 1.29, p = .29$.

5.0 DISCUSSION

Traditionally, campus mental health supports have been aimed at treating those students who have already experienced a breakdown in coping. This approach can create situations where students do not receive help until they have reached extreme levels of stress and are failing to cope with it. In response to this possibility, upstream approaches are being widely introduced with the aim of producing protective effects that can prevent students' stress from reaching debilitating levels and encourage them to build skills that can help them pursue academic achievements, social endeavours and life and career goals.

One way institutions are tailoring these upstream approaches to large numbers of students is through population-based MOOI-style (massive open online) interventions. These large, non-clinical programs have the potential to help students cultivate the skills needed to mitigate stress *before* stress levels become so debilitating that they impair functioning. This study explores one such program. The CopeCareConnect pledge initiative is uniquely designed to activate personal coping strategies and increase social support and connections that might mitigate the adverse effects of stress. This research aimed to learn more about the characteristics of those using this CopeCareConnect pledge system and how they are using it.

5.1 CopeCareConnect Website and Pledges

The CopeCareConnect MOOI-style website has been active for approximately one academic year and is still in the early stages of gaining traction. Even so, 966 unique visitors were engaged

and just over 10% of them made a pledge. This level of interaction with the site is positive, suggesting that this population-level intervention might gain sufficient presence to produce positive benefits for individual health and the campus community as a whole.

In terms of which pledges were made, the two most frequently selected pledges were aimed at enhancing coping: nearly 40% of pledgers selected, *“each day, I will write down 1 positive thing about myself,”* and nearly 30% selected, *“twice a week, I will spend 10 minutes in a natural outdoor setting.”* Rounding out the top three pledges was a pledge designed to promote interpersonal caring, *“once a day, during a face-to-face conversation with another person, I will resist using my phone,”* which was selected by approximately 10% of students who made a pledge. Pledges selected by the smallest proportion of students (approximately 2% each) were: the coping pledge, *“within the next 24 hours I will register for a workshop offered within the next 2 weeks,”* the caring pledge, *“I will learn more about suicide prevention & add the Good 2 Talk helpline number to my phone contacts,”* and the connecting pledge, *“twice a week, I will introduce myself to someone new and ask them about their field of study.”*

Overall, 69.6% of study participants made coping pledges, 16.9% made caring pledges, and 13.5% made connecting pledges. It is not surprising to see that a large proportion of students chose pledges to help them cope, considering that nearly 9 of every 10 Canadian students report feeling overwhelmed with all they have to do (NCHA, 2019). With such high levels of stress so pervasive in the population, it stands to reason that students are looking for ways to cope with all that they are going through.

While certain pledges were favoured, each pledge was selected by at least a few participants. This suggests that each pledge was attractive to at least a proportion of students. This attractiveness may have derived from both the perceived personal value of the pledge and more practical considerations such as the time and effort required to complete it. Indeed, all pledges are created to be simple, cost-free, easy to understand, with varying degrees of difficulty, time requirements, and actions required throughout the 2-week pledge period. In this way, they accommodate the ebb and flow of demands students face throughout the academic year while offering strategies for cultivating their own skills and contributing to the campus community.

Bandura's Social Cognitive Theory purports that the more confident a person feels in their ability to successfully complete a task, the more likely they are to take on the challenge of doing it. If a person does not think they can complete a task they may not even attempt it (Bandura, 1998; Davidson, 2016). An individual's existing self-efficacy (or lack thereof) may have been bolstered by learning vicariously from peers' experiences with pledges and positive verbal persuasion from others in the campus community or in the CopeCareConnect social marketing campaigns which may have contributed to their decision to make a pledge.

The distribution of respondents across all the pledges may suggest that students idiosyncratically chose a pledge that they already had the necessary personal skills or resources for, or that they perceived as sufficiently "easy" to successfully complete. Either way, their successful completion of a pledge could contribute to their self-efficacy to perform the health-enhancing activity, rally their confidence, and possibly even encourage them to take on another, potentially

more difficult pledge (Bandura, 1998). They may even use their new-found confidence to take on another challenge in their life that they may have previously felt was unattainable.

Overall, regardless of whether a student makes a pledge to cope, care, or connect, it can stand to build the self-efficacy needed to overcome obstacles and help develop the personal agency needed to adapt, both internally and externally, to their circumstances (Bandura, 1989, 1998). Even when a pledge is largely focused on improving individual skills or behaviours, it can still benefit the rest of the campus community. When individuals assume agency over their own behaviour, their actions result in changes to their own personal characteristics, which in turn, impacts the social environment in which they live. More, as the individual improves their own skills, they are modelling positive behaviours for their peers and they can ultimately be better positioned to help others in the community.

5.2 Operationalization of Cope, Care and Connect Concepts

This study represents the first step in the exploration of how a MOOI-style intervention may contribute to the development of individual and collective well-being on campus. The nine pledges were designed such that three represented the concept of coping—i.e., dealing with stressors in one's life; three represented the concept of caring in terms of showing care and concern for others; and three represented the concept of connection, defined as making the institution a better place for everyone. Examining the congruence between the constructed categorization of the pledge as a coping, caring, or connecting, and students' stated reason for

selecting the pledge is an important part of this study. It assesses reliability of the constructions and helps ensure the intervention can successfully be replicated (McLeod, 2019).

Results showed that students who picked coping pledges expressed significantly stronger agreement with the statement “*I picked this pledge to help me cope with things in my life,*” than the statements, “*I picked this pledge to show I care*” or “*...to make my institution a better place to be.*” This means that from a theoretical perspective, the coping pledges represented a strong operationalization of the coping concept.

However, when students who made caring pledges were asked about their reason for selecting their pledge, they were almost equally as likely to say they did so to show they care, as to make their institution a better place, or to cope better with things in their life. The same is true of students who made connecting pledges. When asked why they picked their connecting pledge, they gave equally high scores across all three reasons: to make the institution a better place, to show they care, and to help them cope. Unlike the coping pledges, that were very clearly distinguishable from caring and connecting pledges, the caring and connecting pledges seem to be less well-operationalized; they were interpreted as highly similar to each other and to coping pledges.

From a practical perspective, promoting capacity for individual coping, interpersonal caring, and collective actions for making the institution a better place to be, does not require pledges that are unidimensional, focused exclusively on caring, coping, or connecting. Pledges that contribute to individual, interpersonal, and collective well-being are of tremendous value—perhaps even more

so if the person making the pledge feels they are gaining multiple benefits (e.g., contributing to the health of others while improving their own). From a purely theoretical perspective though, it is important to acknowledge that the empirical validity of constructs in the intervention is not as strong as desired.

Given the aim of CopeCareConnect—to build personal and collective resilience—it is important to develop pledges that engage students in clearly distinguishable acts of caring or connecting. If students want to make connections or make their institution a better place to be, it is crucial for CopeCareConnect to offer pledges that align with those objectives and encourage genuine and lasting change in both individuals' wellbeing and the health of the campus community.

If a population-based MOOI-style intervention focuses on the individual alone, without attention to building connections to and within the campus community, it is overlooking one of the campus' greatest assets — its people. Making peer-to-peer connections can result in individuals feeling able and encouraged to explore new experiences and being open to receiving information (Fredrickson, 2004; Fredrickson et al., 2000), two conditions that will serve students well throughout university as they learn new skills and behaviours. More, these connections give rise to a positive campus culture is directly correlated with help-seeking behaviour (Chen et al., 2016). Ultimately, connection to others and the campus community can help the individual excel in their daily lives and persevere when faced with adversity.

5.3 Trends in the Data

From the small sample of 89 students, it is not possible to reliably determine whether certain groups of students are engaging in specific pledges or types of pledges (i.e., coping; caring; connecting). However, a few trends seem to emerge from the data.

First, most students who made pledges identified as female (86.5%), notably higher than the institution-wide proportion of female-identifying students which is 56% (Brock University, 2021). Though there is a general inclination, based on gender stereotypes, to expect that women might choose different types of pledges than men, the data showed no significant association between the types of pledges chosen and gender.

Findings that women were well-represented among users of the intervention and the various pledges is a promising finding. Research reveals that men and women use different types of coping (Endler & Parker, 1990; Howerton & VanGundy, 2009; Kelly et al., 2008). Men are more likely to use problem-oriented coping methods such as planning and generally tend to employ cognitive and behavioural techniques to manage stress. Women, on the other hand, are more likely to use emotional coping methods such as rumination and venting; these techniques are typically considered to be less effective. The lack of association between gender and type of pledge selected may mean that the empirically grounded, skill-building pledges are appealing to all students, regardless of gender identity. Still, the gender distribution of those who participate in the pledge initiative and the pledges they chose is an area for further research (see section 5.8 Future Research).

Studies indicate that women are twice as likely to develop depression and anxiety disorders, including generalized anxiety disorder, agoraphobia, and panic disorder compared to men (National Alliance on Mental Health, 2009). They are more likely to report psychological distress (Caron & Liu, 2010), more likely to self-harm (McManus et al., 2016), and more likely to have suicidal thoughts and attempt suicide (National Institute of Mental Health, 2021). So, observing that this MOOI-type intervention captures a large proportion of the potentially vulnerable population of female-identifying students is encouraging, as it is important to support female-identifying students who are potentially at-risk.

Some research indicates that gender differences in some mental health disorders may be due to reporting biases and suggests that males may discredit or invalidate their concerns regarding mental health which may deter them from seeking support (Affleck et al., 2018; Sagar-Ouriaghi et al., 2020). The possibility that men are reluctant or conditioned to avoid labelling their distress as needing attention may be a reason why fewer men than women were among those making pledges. It may also be the case that the types of pledges offered do not appeal to men in the same way they appeal to women (perhaps because of different coping styles, as noted above). Related to both these possibilities is the way in which men (and male-identifying individuals) experience masculinity in our society. Specifically, role-related constraints and expectations may permit men less leeway than women to both express distress and pursue solutions (Seidler et al., 2018). With respect to a self-initiated, self-directed intervention such as CopeCareConnect, this possibility requires further attention.

A second noteworthy trend was that over one-fifth of the students who made pledges were in their first year of study. Considering that the transition to university is stressful for many students, first-year students are routinely identified as a target population for mental health supports (Jaworska et al., 2016). Results of this study indicate that year of study (i.e., first-year versus higher years of study), was unrelated to the type of pledge selected. This might suggest that all students—regardless of how long they have been on campus—seek personal coping strategies and opportunities to show caring or to support connections in their institution. More broadly, these results might suggest that population-based, MOOI-style interventions can introduce incoming students to a variety of wellness-building pledges. This may be particularly valuable for first-year students by offering them the opportunity to return to a resource that can continue to support them throughout their time at university.

With respect to substance use, participants' self-reported consumption of alcohol, cannabis, nicotine and recreational drugs was near or lower than national averages. Anecdotal and empirical evidence suggests that some students use alcohol, nicotine, and cannabis to help manage their well-being. They may consume alcohol, cannabis and nicotine products in recreational settings resulting in positive feelings with little to no negative effects or consequences. Alternatively, students might use the same substances to self-medicate when faced with stress or other unpleasant feelings such as anxiety or depression (Gras et al., 2020).

Results of the current study showed that the type of pledge selected—coping or caring or connecting—was not associated with use of alcohol, nicotine, cannabis, or other prescribed medication. In other words, students who use these substances were no more likely to choose a

specific type of pledge than those who do not. This seems to be at odds with the pervasive stereotype that students who use substances are seeking ways to cope. If that had been the case, then the substance-using students may have been more inclined to select a pledge to help them cope.

5.4 Effect of the COVID-19 Pandemic on Study

This study was conducted while post-secondary students across Canada were still experiencing the effects of the COVID-19 pandemic; the full impact of this disruption is yet to be understood. Emerging research is beginning to identify the effects on post-secondary students which include depression, anxiety, isolation, high levels of psychological distress, fear, and panic behaviours, (Zurlo et al., 2020).

The data presented in this study were collected in the 2020/2021 academic year. During this time, most university classes and activities were held virtually or cancelled altogether. As was true at nearly every university in Canada, members of the Brock community were physically separated, with very few students living on or near campus. Many international students were unable to travel to Canada. Access to resources, supports, or required materials was severely interrupted. On-campus support became less visible and, in some cases, harder or impossible to access.

The effects of the pandemic may have heightened already high levels of stress experienced by students. This compounded stress may have strained students to the point that their need to care

for themselves may have outweighed a preference to support or connect with others, leading them to select pledges that can aid in coping.

While the COVID-19 pandemic was unprecedented, the anxiety and fear it created is not unique. Events such as the death of a student or campus citizen, violence on campus, or acts of hate, test the resilience of individuals and the campus community as a whole. This type of stress and uncertainty can negatively affect individuals' self-efficacy to persevere when faced with adversity (Bandura, 1998, 2004; Davidson, 2016; Graf & Carney, 2021). Campuses that value the well-being of their citizens cannot afford to wait until these traumatic incidents occur to put systems in place to support students. Foundations that build the skills required to overcome these challenges need to be in place before such challenges arise. The strength of communities, education systems, and social institutions lies, at least in part, in their sense of collective efficacy to find solutions to the problems they face and improve their lives and environments through unified efforts (Bandura, 2007). MOOI-style programs like CopeCareConnect that can reach students where they are – physically, emotionally, and mentally – and build individual and collective agency for regaining control of their own lives, and their environments may be one of the organization's strongest assets in trying times.

5.5 Implications

As universities strive to support the wellbeing of students in ways that are realistic, empirically tested, financially responsible and accessible to all students, they are, as Sylvia Burwell advises, “...Helping them not just avoid stress, but also develop the tools to work through it” (2017,

p.150). This study of a non-clinical, online intervention offers inspiration for additional low-cost, modest changes that institutions can make to support all students in the development of skills needed to manage stress.

Specifically, this study revealed that large proportions of the students who participated are interested in spending time outdoors and using positive affirmations to help cope with stress. Empirical evidence confirms that time outdoors can help reduce stress (Twohig-Bennett & Jones, 2018), and that affirmations can bolster the psychological resources available to confront challenges (Sherman, 2013). According to Bandura's Social Cognitive Theory, reciprocal determinism refers to the bi-directional influences among individuals' characteristics, behaviours and environments. When an individual interacts with their environment, they seek to understand and interpret how it influences them and how they influence it (Bandura, 1989, 1998; Davidson, 2016).

The theoretical premise that individuals' environment can influence their behaviours and characteristics gives rise to the notion that—in addition to presenting an online resource where individuals can pledge to change their environment (by going outdoors or making/posting daily affirmations)—the institution can change the physical campus environment to influence students' overall wellbeing. Specifically, it seems likely that most institutions have the resources to make outdoor spaces on campus more inviting and accessible to students. Likewise, especially when compared to more expensive, labour-intensive, complex, clinical interventions, universities might choose to incorporate positive affirmations in messaging presented throughout the campus. Both of these positive, easy-to-implement changes could help improve student wellbeing, and in

turn, help students attain their social, academic and career goals. Benefits to the institution also occur. Preventing students' stress from becoming unmanageable and requiring more intense treatment or intervention alleviate pressure on the already-strained campus health services. Student retention might improve given that unmanageable stress contributes to poor academic performance (Bruffaerts et al., 2018) and potentially withdrawal from university (Auerbach et al., 2018). Finally, these changes could have positive benefits for staff and faculty.

When speaking to the implications of the findings, it is worthwhile to attend to pledges that were selected least often. One of the least popular pledges was 'to *visit the Good2Talk website to learn about suicide*'—perhaps because students do not feel their peers are at risk of suicide. In fact, suicide is the second leading cause of death in Canadians aged 15 to 24 (Government of Canada, 2019), and 16.4% of post-secondary students surveyed report seriously considering suicide and 2.8% reported attempting suicide within the past 12 months (American College Health Association, 2019b). Since most people who complete suicide give definite warnings (Kim et al., 2021), it is important for universities to ensure all campus citizens, including students, have information about warning signs and how to respond to a person who may be considering suicide (Canadian Association for Suicide Prevention, n.d.). Suicide may be an uncomfortable subject for some students, and they may not want to think about it, much less pledge to do it. However, by virtue of including this pledge in a campus-wide intervention, conversations about suicide may be normalized and attention brought to the fact that it is a concern among the post-secondary population. Thus, while unpopular, the mere presence of the pledge may represent a meaningful contribution to a broader effort across campus to reduce the stigma surrounding mental health challenges and contribute to suicide prevention efforts.

Another infrequently selected pledge was, ‘...*within the next 24 hours I will register for a [study skills] workshop offered within the next 2 weeks.*’ Academic workshops are designed to give students fundamental skills to succeed in, and thus complete, their post-secondary education (Blythman & Orr, 2001; MacVaugh et al., 2014). Despite the unpopularity of this pledge, universities would likely see the value of reminding students that skills required for academic success are not inherent, and the cultivation of better study habits can prevent academic stress from becoming overwhelming. A pledge which promotes academic workshops may raise awareness of them and prompt students to access services at a later date. Furthermore, this pledge might catch the interest of potential stakeholders across the university (e.g., instructors, administrators, academic advisors, counsellors). Enhanced buy-in from a more diverse selection of stakeholders sets the stage for a symbiotic interaction between campus resources and strengthens collective capacity for supporting students’ wellbeing.

5.6 Limitations of the Study

Perhaps the most prominent weakness of this study is the small sample size. For a number of variables, including gender, year of study, and academic standing, no students were represented in certain categories. This made it impossible to fully assess relationships among student characteristics and the types of pledges they selected. The small sample size likely contributed to the lack of statistically significant findings as well.

5.7 Strengths of the Study

The current study introduces novel findings about a promising, upstream approach to enhancing the health of students and the campus collective. Post-secondary enrollment is increasing steadily, and so are the proportions of students with mental health concerns. In a study of 86 campus health centers, it was determined that enrollment was increasing at a rate of 6% while requests for mental health services was increasing at a rate of 30% (Xiao et al., 2017). Campus health centers cannot keep up with this demand and are seeking alternative ways to help alleviate pressure on their health systems while supporting students. Upstream interventions that promote personal coping skills and contribute to a campus culture that enhances the wellbeing of all students before it reaches such extremes that they need the clinical support of the campus health center. The new, and still under-researched, population-based intervention studied here could improve individual resilience to stress and build a campus culture that acts upon notions of respect, inclusivity, and mutual support.

Valuably, this study also adds to the body of knowledge about a population at high risk for mental illness and dependence on substances (Ontario College Health Association, 2009). Besides generating knowledge about the potential contributions of a MOOI-style intervention itself, this study offers practical, cost-effective, and feasible suggestions for changes that institutions can implement to more broadly support all students on campus while communicating that mental health, wellbeing and community-building are important.

5.8 Future Research

Knowing that this is seminal work in what is expected to be a series of studies, a vision of future research can be offered. The next step for this research program is to replicate the current study with a larger sample to fully assess associations between pledgers' characteristics and the type of pledge they select. This will identify the types of pledges students prefer and shed additional light on whether certain cohorts within the university population are drawn to certain pledges, and how that can be leveraged to build individual and collective capacity for resilience. For example, conducting this study with a larger sample would allow for a more nuanced investigation of whether gradations in frequency or amount of substance use is associated with the type of pledge selected. Influences of gender- or cultural-identity would also be observable in a larger sample, giving rise to a better understanding of whether broad-scale interventions can support the well-being of students who may feel marginalized and less secure on campus.

As the series of studies progresses, there will be a need to determine whether students who make pledges achieve their desired outcomes, and whether these outcomes impact both individuals themselves and the campus community as a whole. Again, attention to characteristics of the individuals making the pledges may elucidate whether the intervention is helpful for particular cohorts of students who may be at higher risk of experiencing overwhelming stress. Assessment of changes in the social environment of the institution may be possible, thus shedding light on whether individual actions to cope or connect can impact the inclusivity and sense of community in the institution as a whole. Assessing outcomes will offer more information about whether coping, caring, and connecting concepts are adequately operationalized. Accurate

operationalization will help ensure the intervention can be successfully replicated at other post-secondary institutions.

5.9 Conclusion

Post-secondary students are accessing mental health resources at an all-time high; campus health centers cannot keep up with demands for service (Xiao et al., 2017). New ways of thinking about student well-being and mental health and new ways of delivering services are needed. Instead of waiting until students' stress levels reach such extremes that they require clinical intervention, institutions are introducing upstream approaches that help to build and strengthen the personal skills, collective capacity, and campus resources students need to manage stress before it becomes unmanageable.

Population-based, MOOI-style interventions are a promising approach, especially when, in addition to helping individual students manage stressors, they aim to create a campus community that supports well-being of all its members. Being a campus that supports mental health and resiliency does not translate to being a campus that is free from challenges, conflict or even failure. Students must learn to manage stress and overcome the obstacles that they face in university and in everyday life. As psychologist Virginia Satir has identified, the problems are not the problem; instead, lack of coping is the problem (Rasheed et al., 2011). This is reinforced by the study findings that students were most likely to make pledges to improve their own coping skills. Seeing students choose pledges to help them cope is encouraging; it may help prevent them from experiencing the tremendously high stress levels that impede academic and social

functioning. The strategies learned in the pledges can help students in their current and future roles.

This study also found that a meaningful proportion of students chose pledges that promote caring for others or building connections within the campus community. Thus, students have indicated that their peers and the campus community are important to them; they want to participate in and support the campus community and culture.

The findings of the study are consistent with national and international studies that indicate that students are experiencing extreme levels of stress, as evidenced by nearly 70% of participants making a pledge to help them cope with their stress (American College Health Association, 2019b). Though the sample size was small, the findings are encouraging and indicate that the pledges offered by CopeCareConnect were acceptable to students, regardless of gender, age, year of study or substance use.

Large scale, population-based interventions have the potential to lose their ability to reach vulnerable populations, and more research is needed to determine whether and how MOOI-style interventions can optimize their potential to support all students—including those at higher risk—as they endeavour to cope with their stress, care about themselves and others, and augment genuine, inclusive connections within the campus community.

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Appendix A

Certificate of Ethics Clearance from Brock University's Social Science Research Ethics Board.

	Brock University Office of Research Ethics Tel: 905-688-5550 ext. 3035 Email: reb@brocku.ca									
	Social Science Research Ethics Board									
	<hr/> Certificate of Ethics Clearance for Human Participant Research <hr/>									
	<table border="0" style="width: 100%;"> <tr> <td style="width: 20%;">DATE:</td> <td>5/11/2020</td> </tr> <tr> <td>PRINCIPAL INVESTIGATOR:</td> <td>LAWRANCE, Kelli-an - Health Sciences</td> </tr> <tr> <td>FILE:</td> <td>19-318 - LAWRANCE</td> </tr> <tr> <td>TYPE:</td> <td>Faculty Research</td> </tr> <tr> <td colspan="2" style="padding-top: 10px;">TITLE: A Study of the COPE•CARE•CONNECT System</td> </tr> </table> <hr/>	DATE:	5/11/2020	PRINCIPAL INVESTIGATOR:	LAWRANCE, Kelli-an - Health Sciences	FILE:	19-318 - LAWRANCE	TYPE:	Faculty Research	TITLE: A Study of the COPE•CARE•CONNECT System
DATE:	5/11/2020									
PRINCIPAL INVESTIGATOR:	LAWRANCE, Kelli-an - Health Sciences									
FILE:	19-318 - LAWRANCE									
TYPE:	Faculty Research									
TITLE: A Study of the COPE•CARE•CONNECT System										

ETHICS CLEARANCE GRANTED

Type of Clearance: NEW	Expiry Date: 5/1/2021
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The Brock University Social Science Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 5/11/2020 to 5/1/2021.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 5/1/2021. Continued clearance is contingent on timely submission of reports.

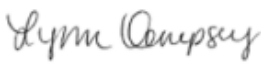

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Office of Research Ethics web page at <http://www.brocku.ca/research/policies-and-forms/research-forms>.

In addition, throughout your research, you must report promptly to the REB:

- a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
- c) New information that may adversely affect the safety of the participants or the conduct of the study;
- d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved:

 Lynn Dempsey, Chair Social Science Research Ethics Board	 Robert Steinbauer, Chair Social Science Research Ethics Board
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Note: Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.

Appendix B

Figure 4

CopeCareConnect.ca Website Landing Page

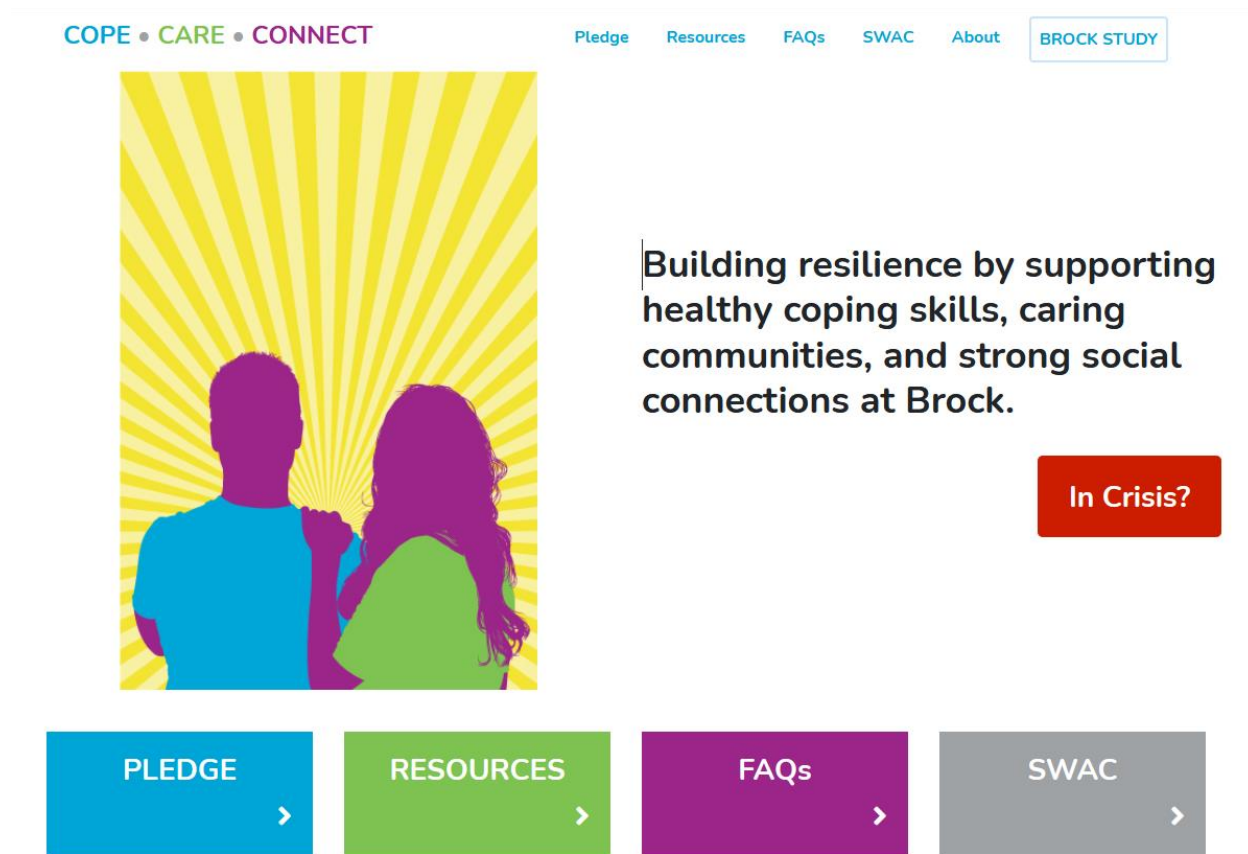


Figure 5

CopeCareConnect.ca Pledge Page

PLEDGES

For the NEXT TWO WEEKS, I pledge...

Pick one pledge. Click MAKE MY PLEDGE to make it official. Do your pledge for the next TWO WEEKS. Fill in the quick survey emailed to you.

...each day, I will write down one positive thing about myself.

People who identify positive qualities about themselves are happier.¹

[MAKE MY PLEDGE](#)

...within the next 24 hours I will register for a workshop offered within the next 2 weeks.

Students who focus on the process of learning tend to achieve higher test scores than those who just work to get good grades.² [A→Z Learning Services](#) offers free workshops about essay-writing, group work, studying for exams, and more.

[MAKE MY PLEDGE](#)

...I will not post altered photos on my social media.

To gain attention and followers, people post things on social media that are false, photoshopped or exaggerated. This can cause feelings of guilt, inadequacy and jealousy that are damaging to mental health.⁴

[MAKE MY PLEDGE](#)

...once a day, during a face-to-face conversation with another person, I will resist using my phone.

Phubbing is snubbing someone by using your phone during a face to face conversation.⁵ Phubbing can make people feel unappreciated. It reduces healthy, real-life connections.

[MAKE MY PLEDGE](#)

...I will learn more about suicide prevention & add the Good 2 Talk helpline number to my phone contacts.

When people are hurting, their behaviour can change. It's important to notice and to ask "are you okay?" Listen to them.⁶ Share a crisis line phone number. It could save a life.

[MAKE MY PLEDGE](#)

...twice a week, I will spend 10 minutes in a natural outdoor setting.

Spending a few minutes outside can decrease blood pressure, reduce risk of diabetes and heart disease, while improving mood and sleep patterns.³

[MAKE MY PLEDGE](#)

...twice a week, I will introduce myself to someone new and ask them about their field of study.

Brock has a diverse student population. Meeting new people and learning more about them can build relationships and strengthen connections in the Brock community.⁷

[MAKE MY PLEDGE](#)

...I will avoid using words that stigmatize mental illness, and share this thought with 2+ people.

Using words like "crazy", "nuts" or "loco" can make people who live with mental illness feel excluded, isolated, distressed or weak.⁸ It can prevent people from sharing their experiences and seeking help.

[MAKE MY PLEDGE](#)

...in at least 1 conversation per day, I will totally resist sharing statements one person has said about another

People spend 65-90% of their conversations gossiping.^{9,10} Gossip can undermine the health and wellbeing of everyone involved.¹¹

[MAKE MY PLEDGE](#)

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Figure 6


CopeCareConnect.ca Frequently Asked Questions Page

FAQs




Why should I make a pledge? 


What if I can't do my pledge? 

Where can I get more help? 

How do I help a friend or loved one? 

What's with the email survey? 

Do pledges work? 

What is resilience? 


What do healthy campuses look like? 

Figure 7*CopeCareConnect.ca Resource Page – On Campus***RESOURCES****ON CAMPUS**

To find these services on campus, use the interactive campus [map](#) [↗].

The Hub

TH 134 (next to Market Hall)
Talk to Peer Health Educators
<https://brocku.ca/health-wellness-accessibility/hub/> [↗]

Student Health Services

Harrison Hall (Across from Walker Complex next to Campus Security)
Physicians and Mental Health Nurses
905-688-5550 x 2343

Personal Counselling

(Provided by Morneau Shepell counsellors)
Schmon Tower 4th floor – ST 400
1-833-BROCK-33 (1-833-276-2533) for immediate support or to make an appointment

Student Wellness & Accessibility Centre (SWAC)

Schmon Tower 4th Floor – ST 400
905-688-5550 x 3240

A-Z Learning Services

Student Success Centre
TH 129 (next to Market Hall)
905-688-5550 x 5774
learning@brocku.ca

Aboriginal Student Services

Student Success Centre - TH 145
905-688-5550 x 5883
Swong2@brocku.ca

International Student Support

Renee Ji, Student Advisor (Non-Academic)
Glenridge B - 215 905-688-5550 x 4881
rji@brocku.ca

Brock Human Rights and Equity

Mackenzie Chown E Block – 206
905-688-5550 x 2859
lmadhavarau@brocku.ca

Brock Pride

TH 133
Weekly Meetings – Tuesday 7-9pm
www.brockpride.ca [↗]

Campus Security

(Across from Walker Complex, next to Harrison Hall)
905-688-5550 x 3200 (crisis)
905-688-5550 x 4300 (non-crisis)

CRISIS

If you are in immediate danger, or feel that you may harm yourself or someone else, call 9-1-1

Figure 8

CopeCareConnect.ca Resource Page – Off Campus

OFF CAMPUS



Niagara Regional
Native Centre

Niagara Regional Native Centre
382 Airport Rd
Niagara-On-The-Lake,
ON L0S 1J0
905-688-6484



southridge shelter
FRIENDSHIP MAKES THE DIFFERENCE

Southridge Shelter
201 Glenridge Ave
St. Catharines, ON L2T 3J6
905-682-2477
shelter@southridgechurch.ca



OUTniagara
Uniting Niagara's Sexual and Gender Diverse Community

OUTniagara
12-111 Fourth Ave
Suite 270
St. Catharines, ON L2S 3P5
info@outniagara.ca



Positive Living
NIAGARA

Positive Living Niagara
120 Queenston St
St. Catharines, ON L2R 2Z3
905-984-8684
1-800-773-9843
info@positivelivingniagara.ca

CHECK OUT OUR YOUTUBE CHANNEL



24/7 & CRISIS RESPONSE SERVICES



1.866.925.5454

Post-Secondary Student Helpline

Good 2 Talk

Call 1-866-925-5454 or text GOOD2TALKON to 686868 for free, confidential assistance. Services are designed for Ontario post-secondary students. They include counselling, information, and referrals for mental health, addictions and well-being.



MENTAL HEALTH & ADDICTIONS
ACCESS LINE
1-866-550-5205
CONFIDENTIAL HELP 24/7

Mental Health & Addictions**Access Line**

For confidential help, call 1-866-550-5205 Press 1 in the event of a crisis to be connected to COAST (Crisis Outreach And Support Team). Press 2 to connect to Access Line for services including information, telephone support or connection to local services.



Ontario

2-1-1

Call 2-1-1 from anywhere in Ontario to be connected with local resources and support. Services are available 24/7 and in 150+ languages. Local services include housing, income and employment support, resources for vulnerable populations and more.

Figure 9

CopeCareConnect.ca Student Wellness and Accessibility Services Links

STUDENT WELLNESS AND ACCESSIBILITY SERVICES

<div style="background-color: #FFD700; padding: 10px; text-align: center;"> <p style="font-weight: bold; margin: 0;">THE HUB</p> <p style="font-size: small; margin: 5px 0;">A space where students can drop in to chat about ways to improve their overall health and wellness.</p> <p style="background-color: white; color: #0070C0; padding: 2px 5px; font-weight: bold; margin: 0;">VISIT THE HUB</p> </div> <p style="font-size: x-small; margin-top: 10px;">A space for students. Talk to peer health educators. Check out free events such as STI testing, mindfulness training, puppy room, and naloxone training. Get info about sexual health, substance use, sleep, nutrition, and mental health.</p>	<div style="background-color: #FFD700; padding: 10px; text-align: center;"> <p style="font-weight: bold; margin: 0;">STUDENT HEALTH SERVICES</p> <p style="font-size: small; margin: 5px 0;">Your on-campus medical clinic where you can meet with a nurse or doctor.</p> <p style="background-color: white; color: #0070C0; padding: 2px 5px; font-weight: bold; margin: 0;">VISIT SHS</p> </div> <p style="font-size: x-small; margin-top: 10px;">Services by appointment. Call 905-688-5550 x 3243.</p> <p style="font-size: x-small; margin-top: 5px;">First-come-first-serve urgent care services, Mon-Fri, at these walk-in clinics:</p> <ul style="list-style-type: none"> -Campus Pharmacy, 9am-4pm -Harrison Hall, 3-4pm 	<div style="background-color: #FFD700; padding: 10px; text-align: center;"> <p style="font-weight: bold; margin: 0;">PERSONAL COUNSELLING SERVICES</p> <p style="font-size: small; margin: 5px 0;">Discuss your personal and/or social difficulties with a counsellor.</p> <p style="background-color: white; color: #0070C0; padding: 2px 5px; font-weight: bold; margin: 0;">VISIT PC</p> </div> <p style="font-size: x-small; margin-top: 10px;">If worries are impacting your day-to-day life, please speak with someone. Do not think other people's concerns are more important than your own.</p> <p style="font-size: x-small; margin-top: 5px;">Call 1-833-276-2533 (1-833-BROCK33) for confidential telephone counselling.</p>	<div style="background-color: #FFD700; padding: 10px; text-align: center;"> <p style="font-weight: bold; margin: 0;">STUDENT ACCESSIBILITY SERVICES</p> <p style="font-size: small; margin: 5px 0;">Connect with an accessibility professional.</p> <p style="background-color: white; color: #0070C0; padding: 2px 5px; font-weight: bold; margin: 0;">VISIT SAS</p> </div> <p style="font-size: x-small; margin-top: 10px;">SAS supports independence of students with accessibility needs. SAS helps students with learning challenges arrange for suitable support and accommodation so they can excel academically.</p>
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Figure 10

CopeCareConnect.ca About Us Page

ABOUT

COPE • CARE • CONNECT is an initiative of some truly amazing Public Health students in the Health Sciences Department at Brock University. It is supported by their Dean (Faculty of Applied Health Sciences), as well as Student Wellness and Accessibility Services, Student Health Services. Dr. Kelli-an Lawrance and her graduate students provide oversight.

Brock University is committed to offering a transformational and accessible academic and university experience to all students. Core to Brock's priorities is the development of engaged citizens who are resilient, involved, career-ready and versatile. COPE • CARE • CONNECT is uniquely designed to support this institutional priority by fostering a campus culture that reduces distress and increases resilience among all members of the Brock community.

As a student initiative with many moving parts, errors may occasionally appear on this website. If you spot an error, or if you simply wish to contact someone about COPE • CARE • CONNECT, please send an email to klawrance@brocku.ca



COPE • CARE • CONNECT

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Appendix C

Figure 11

CopeCareConnect Pledge Survey Form – Part A

COPE • CARE • CONNECT

Pledge Resources FAQs SWAC About BROCK STUDY

PLEDGE FORM

Fill in this Pledge Form to make your pledge official!

But before you do, please tell us: whether your answers can be included in a Brock study of CopeCareConnect.ca

I'm making a pledge; DO use my answers for the study
 I'm making a pledge; DON'T use my answers for the study

I attend Brock University:

yes
 no
 prefer not to answer

My email is:

My pledge is:

About the Study

Click [here](#) for complete info about the study

I picked this pledge to...	strongly disagree					strongly agree		prefer not to answer
help me cope with things in my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
show others I care about them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
make my institution a better place to be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Grade:

1st year student
 2nd, 3rd, 4th or 5th year student
 Grad student
 not a student
 prefer not to answer

Figure 12*CopeCareConnect Pledge Survey Form – Part B***My approximate overall average is:**

- below 50%
 50% - 64%
 65% - 79%
 above 80%
 prefer not to answer or not a student

Age:

Gender:

- Prefer not to answer
 Female
 Male
 Intersex - female
 Intersex - male
 Intersex, do not identify as either female or male
 Trans - female to male
 Trans - male to female
 Trans, do not identify as totally female or male
 Two-Spirit (a term used by Indigenous people)
 Another gender
 Do not know

In the past month, I...	not at all	once or twice altogether	some days each week	every day or almost every day	prefer not to answer
drank alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
vaped nicotine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
smoked cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used cannabis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used other recreational drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
took prescribed medication for mental health concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please add me to the CopeCareConnect email list to receive updates & invites 5-6times/year.

Please submit your answers

Appendix D

Table 8

Students' Gender by Pledge Group Chosen

	Cope		Care		Connect	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Female-identifying	55	88.7	12	80.0	10	83.3
Male-identifying	7	11.3	3	20.0	2	16.7

$\chi^2(2, N = 89) = 0.91, p = .64$

Table 9

Students' Year of Study by Pledge Group Chosen

	Cope		Care		Connect	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1 st year student	11	17.7	3	20.0	5	41.7
2 nd , 3 rd , 4 th year or higher	51	82.3	12	80.0	7	58.3

$\chi^2(4, N = 89) = 8.43, p = .08$

Table 10

Students' Average Grade by Pledge Group Chosen

	Cope		Care		Connect	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
65-79%	37	59.7	6	40.0	6	50.0
80% or higher	25	40.3	9	60.0	6	50.0

$\chi^2(2, N = 89) = 2.03, p = .36$

Table 11*Students' Reported Past-Month Alcohol Use by Pledge Group Chosen*

	Cope		Care		Connect	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No Alcohol Use	35	56.5	7	46.7	5	41.7
Alcohol Use	27	43.5	8	53.3	7	58.3

$\chi^2(2, N = 89) = 1.15, p = .56$

Table 12*Students' Reported Past-Month Nicotine Use by Pledge Group Chosen*

	Cope		Care		Connect	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No Nicotine Use	56	90.3	13	86.7	10	83.3
Nicotine Use	6	9.7	2	13.3	2	16.7

$\chi^2(2, N = 89) = 0.57, p = .75$

Table 13*Students' Reported Past-Month Cannabis Pledge Group Chosen*

	Cope		Care		Connect	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No Cannabis Use	48	77.4	12	80.0	9	75.0
Cannabis Use	14	22.6	3	20.0	3	25.0

$\chi^2(2, N = 89) = 0.10, p = .95$

Table 14*Students' Reported Past-Month (Mental Health) Medication Use by Pledge Group Chosen*

	Cope		Care		Connect	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
No Medication Use	52	83.9	14	93.3	11	91.7
Medication Use	10	16.1	1	6.7	1	8.3

$\chi^2(2, N = 89) = 1.24, p = .53$