Evaluating an Online Mental Health Outreach Program for University Students During the COVID-19 Pandemic

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Abstract

The unprecedented levels of mental health difficulties reported by university students make it difficult for university mental health services to keep up with the increasing demand. As a result, leading organizations have indicated a need for preventative programs aimed at enhancing mental health resilience. Thus, the overarching goal of this thesis was to evaluate the Stress and Coping: Online Outreach Program (SCOOP), an online mental health outreach program for university students. The current thesis consists of two manuscripts. The main objective of Manuscript 1 was to explore the acceptability, satisfaction with, and effectiveness of SCOOP as well as to evaluate differences between mental health service provider (MHSP)-led versus peer-led versions of the program. Participants were 217 university students (M_{age} = 20.40 years, *SD* = 1.96; 79.7 % females) randomly assigned to SCOOP (MHSP-led (*n* = 69) or peer-led (*n* = 73)) or a wait-list comparison group (*n* = 75). Over the course of 4 weeks, students in the SCOOP groups were asked to watch three brief MHSP-led or peer-led skills-building videos with equivalent content and had access to a resource library of resilience building strategies. All participants completed online self-report measures of well-being (i.e., stress, coping self-efficacy, social support, social connectedness, mindfulness, and quality of life) at baseline, post-program and 1 month follow-up. Training satisfaction was evaluated with the SCOOP group at post-program. Results from a series of chi-squares revealed that there were no differences between the MHSP-led and peer-led groups on any of the satisfaction measures. Additionally, a series of two-way mixed ANOVAs revealed no significant differences ($p > .05$) between any of the groups (MHSP/peer/comparison) on any of the reported well-being outcomes over time. Surprisingly, a main effect of time revealed that all students improved on coping self-efficacy, social support, mindfulness, and quality of life (social relationship domain) from baseline to post,

as well as improved on quality of life (environment domain) from baseline to follow-up. It is possible that the lack of significant group differences for program effectiveness were due to the plethora of mental health resources offered through university services to the student body and reduction in previously reported stressors (i.e., academic stressors) at the height of the pandemic. While no group differences were found on well-being outcomes, participants reported high rates of acceptability and satisfaction with SCOOP, which provides promising support for the use of online mental health outreach programs in university settings. Manuscript 2 aimed to explore students' perspectives regarding the SCOOP, specifically examining positive and negative impressions of the program. Results from a qualitative content analysis revealed that positive impressions of the online program included the following categories: (1) Variety and Diversity of Resources/Strategies; (2) Brevity, Simplicity, and Accessibility; (3) Value and Appeal; (4) Relatability; and (5) Encouragement of Reflection and Awareness Around Own Mental Health and Well-being. For negative impressions of the online program two main categories were identified: (6) Need for Additional Support on Getting Started and Accountability; and (7) Need for Additional Demonstration/Explanation of Strategies in Videos. Overall, findings from the current thesis provide preliminary evidence for SCOOP as an acceptable online mental health outreach program for university students regardless of service delivery type. Implications of this thesis include best practice guidelines for future online mental health program provision and development. Limitations as well as considerations for future research will be discussed.

Résumé

Les étudiants universitaires signalent des niveaux élevés de difficultés de santé mentale (SM) et les services universitaires ont du mal à répondre à la demande. Par conséquent, on indique qu'il était nécessaire de mettre en place des programmes préventifs visant à améliorer la résilience de la SM. Ainsi, l'objectif principal de cette thèse était d'évaluer le programme Stress and Coping: Online Outreach Program (SCOOP), un programme de SM en ligne pour les étudiants universitaires. La présente thèse se compose de deux manuscrits. L'objectif principal du manuscrit 1 était d'explorer l'acceptabilité et l'efficacité de SCOOP ainsi que d'évaluer les différences du programme dirigées par des professionnels de la SM (PSM) et celles dirigées par des pairs. Les participants étaient 217 étudiants universitaires ($M_{âge}$= 20.40 ans, *É.-T.*=1.96; 79.7% femmes) assignés au hasard à SCOOP (dirigé par des PSM (*n*=69), par des pairs (*n*=73) ou à un groupe de comparaison (*n*=75)). Pendant quatre semaines, les étudiants des groupes SCOOP ont été invités à regarder trois brèves vidéos de renforcement des compétences dirigées par des PSM ou des pairs, avec un contenu identique, et ont eu accès à une bibliothèque de ressources pour le renforcement de la résilience. Tous les participants ont rempli des questionnaires en ligne sur le bien-être (ex. l'auto-efficacité en matière d'adaptation, le soutien social, les liens sociaux, la pleine conscience et la qualité de vie) au départ, après le programme et un mois plus tard. La satisfaction à l'égard de la formation a été évaluée avec le groupe SCOOP à l'issue du programme. Les résultats d'une série de chi carré ont révélé qu'il n'y avait pas de différence entre le groupe dirigé par des PSM ou par des pairs sur aucune des mesures de satisfaction. De plus, une série d'ANOVA mixtes n'a révélé aucune différence significative ($p > .05$) entre les groupes (PSM/pair/comparaison) sur aucun des résultats de bien-être rapportés au fil du temps. Étonnamment, un effet du temps a démontré que tous les étudiants se sont

améliorés en termes d'auto-efficacité de l'adaptation, soutien social, pleine conscience et la qualité de vie (domaine des relations sociales et environnement). Le manque de différences significatives entre les groupes en ce qui concerne l'efficacité du SCOOP sont possiblement dues à la quantité de ressources en SM offertes aux étudiants et à la réduction des facteurs de stress académique durant la pandémie. Cependant, les participants ont signalé des taux élevés d'acceptabilité et de satisfaction avec SCOOP, ce qui indique que l'utilisation de programmes de SM en ligne dans les milieux universitaires est prometteuse. Le manuscrit 2 visait à explorer les perspectives des étudiants sur le SCOOP, en examinant spécifiquement les impressions positives et négatives du programme. Les résultats d'une analyse de contenu qualitative ont révélé que les impressions positives du programme comprenaient les catégories suivantes: (1) Variété et Diversité des Ressources/Stratégies; (2) Brièveté, Simplicité et Accessibilité; (3) Valeur et Intérêt; (4) Facilité d'Accès; et (5) Encouragement à la Réflexion et à la Prise de Conscience de sa Propre SM. En ce qui concerne les impressions négatives du programme, deux catégories principales ont été identifiées: (1) Besoin de Soutien Supplémentaire pour Commencer et Responsabiliser; et (2) Besoin de Démonstration/Explication Supplémentaire des Stratégies dans les Vidéos. Dans l'ensemble, les résultats de la présente thèse fournissent des preuves préliminaires de la faisabilité et de l'acceptabilité de SCOOP comme programme en ligne de sensibilisation à la SM pour les étudiants universitaires, quel que soit le type de prestation de services. Les implications de cette thèse comprennent des directives de meilleures pratiques pour la fourniture et le développement futurs de programmes de SM en ligne. Les limites ainsi que les considérations pour les recherches futures seront discutées.

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Statement of Authorship

Both manuscripts in this program of research were co-authored by myself, as primary author on both articles, my supervisor, Dr. Nancy Heath, and senior graduate students, Bilun Naz Böke, Jessica Mettler, and Stephanie Zito. As first-author (and project coordinator), I was involved in the program development, and data collection (i.e., ethics writing, participant recruitment, program dissemination). I also cleaned and analysed all data for both manuscripts with advice and guidance from co-authors. Finally, I wrote both manuscripts in full myself with support for the interpretation of results, conceptualization of the literature reviews and discussions, as well as feedback and editing from a critical review from Dr. Heath and senior graduate student co-authors, Bilun Naz Böke, Jessica Mettler, and Stephanie Zito.

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Chapter 1: Introduction

Although the period of emerging adulthood, ages 18-29 years old, is exciting and characterized by independence and identity exploration, it can also be a very stressful time given the prominent changes and instability associated with this developmental period (Arnett, 2007; Arnett et al., 2014). Emerging adults are faced with a number of novel and exciting opportunities related to work, education, and romantic relationships; however, they will often report feeling "in-between" (i.e., feeling in between adolescence and adulthood) and such instability during this developmental period has been associated with feelings of depression and anxiety (Arnett et al., 2014). Emerging adulthood often overlaps with the university years and in addition to the already stressful experience of instability, feeling "in-between", and identity exploration, the university experience can bring on additional challenges such as financial and academic stressors (Arnett et al., 2014; Beiter et al., 2015; Ribeiro et al., 2018).

Thus, it is clear that university students are experiencing heightened levels of stress during this time. Mental health difficulties in emerging adults on campus has become a significant problem, with reports from 55,284 students at Canadian post-secondary institutions revealing that 68.9% of students report experiencing overwhelming anxiety while approximately 51.6% report feeling so depressed that they have difficulty functioning (American College Health Association, 2019). Furthermore, a systematic review examining stress and quality of life in university students reported a close relationship between high stress levels and consequent deterioration of quality of life, as well as an association to factors such as insomnia and poor sleep quality (Ribeiro et al., 2018). As a result, university student mental health services are reporting struggling to keep up with the heightened demand (Prince, 2015; Watkins et al., 2012).

Taken together, the elevated levels of mental health distress reported by university students during emerging adulthood as well as the negative outcomes associated with such reported distress is detrimental to students mental and physical health (Ribeiro et al., 2018). Thus, there is a need to provide university students with evidence-based strategies to build their mental health resilience during this exciting but challenging developmental period. To address this, a number of online mental health resilience building programs have emerged to provide students with evidence-based support and address the issues regarding limited resources on university campuses (Conley et al., 2016). Although, many of these programs have been shown to be effective in reducing stress and increasing well-being (Clarke et al., 2015; Conley et al., 2016), many have not evaluated students' acceptability with such programs (Lattie, Adkins, et al., 2019). Additionally, many of these programs are delivered by mental health professionals or are completely self-guided, however evidence from help-seeking research reveals that students have a preference for informal support (i.e., friend or family) as opposed to formal support (i.e., mental health professional; Goodwin et al., 2016). In light of these findings, it is crucial to examine students' preference in terms of online program service delivery (i.e., peer or MHSP). Especially since studies are reporting that only a small proportion of students are accessing these online mental health programs (Dunbar et al., 2018; Musiat et al., 2014), evaluating students' acceptability as well as service delivery preferences may be pivotal to enhance student engagement.

Therefore, this thesis seeks to evaluate the Stress and Coping Online Outreach Program (SCOOP), an online mental health resilience building program for university students. The main objective of Study 1 sought to explore the acceptability, satisfaction with, and effectiveness of SCOOP for university students. Specifically, the study sough to examine whether there were any

differences in acceptability and satisfaction of such a program between groups that were either asked to watch a mental health service provider (MHSP)-led or peer-led versions of the online skills-building videos with identical content. In addition, the study examined whether there were any group differences on well-being outcomes (i.e., decreased stress, increased coping self-efficacy (CSE), social support, social connectedness, mindfulness, and quality of life (QoL) between the MHSP-led, peer-led, and comparison group. Expanding on the findings from Study 1, the main objective of Study 2 sought to explore students' perspectives on the SCOOP, specifically examining positive and negative impressions of the program. These studies have implications for future research and program development whereby the current thesis will provide novel findings contributing to the literature on university students' well-being as well as provide best practice recommendations for future program development.

In compliance with McGill University's thesis regulation guidelines, the following thesis is structured as a manuscript-based thesis. The first two chapters introduce the thesis and review the literature. Chapters 3 and 4 present Studies 1 and 2 respectively, each as a complete manuscript including its own introduction, literature review, method, results, and discussion sections. These two chapters will be linked by a connecting text. Because of the format of the thesis, there is some repetitiveness in the literature reviews presented in Chapter 2 and those presented in each individual manuscript. Finally, Chapter 5 provides an overarching conclusion that integrates the findings from both manuscripts into one cohesive program of research and provides implications for future research.

Chapter 2: Review of the Literature

University students are reporting elevated levels of mental health distress and with university campuses limited resources, students are faced with lengthy wait times to access any type of support (American College Health Association, 2019; Jaworska et al., 2016; Watkins et al., 2012). To address these barriers to mental health service provision, there is a need for preventative programs aimed at building mental health resilience capacity on university campuses. Thus, the overarching goal of this thesis was to evaluate the Stress and Coping: Online Outreach Program (SCOOP), an online mental health resilience building program for university students. The following literature review will first demonstrate the need to build mental health resilience capacity on university campuses and how online mental health resilience building programs can support to address this need. Challenges such as low proportions of students accessing such services and lack of program acceptability evaluations will be presented. Subsequently, the involvement of student service users and peer delivery approaches will be discussed in relation to a Participatory Action Research (PAR) model as an approach to enhance acceptability and effectiveness of such online programs for university students. This chapter will conclude by presenting the specific aims of this thesis.

Mental Health Distress Among University Students

University students are reporting elevated levels of psychological distress. Results from the National College Health Assessment revealed that 88% of students reported that over the past 12 months they felt overwhelmed by all they had to do and 64% felt hopeless (American College Health Association, 2019). In light of these findings, there has been an increase in mental health service demand on university campuses (Jaworska et al., 2016). Additionally, heightened levels of stress have been associated with unhealthy coping behaviours such as alcohol use, which

places university students at risk of engaging in such coping behaviours (Metzger et al., 2017; Ribeiro et al., 2018). As such, relative to the general population university students continue to report higher rates of hazardous alcohol consumption (Davoren et al., 2015), whereby 48% of students have identified engaging in binge drinking (drinking more than four alcohol units per occasion) to deal with stress (Lannoy et al., 2017; Russell et al., 2017). Furthermore, stress and poor mental health have been associated with a range of negative consequences such as low academic performance, insomnia, and burnout (Lebares et al., 2018; Ribeiro et al., 2018; Shankar & Park, 2016; Talib & Zia-ur-Rehman, 2012). Such negative consequences can result in significant difficulties for students to succeed in the university environment and are detrimental to their well-being (Bruffaerts et al., 2018; Ribeiro et al., 2018).

University students face unique stressors such as stressors related to academic performance, pressure to succeed, and preparing for post-graduation plans (Beiter et al., 2015; Ribeiro et al., 2018). While academic demands can be perceived as a positive challenge, if viewed negatively or if demands are perceived as greater than one's ability to meet them, this stress can be associated with a number of negative outcomes such as poor physical and mental health as well as a decline in quality of life (Lazarus, 1966; Ribeiro et al., 2018). Moreover, the developmental period of emerging adulthood (18 to 29 years of age), usually overlapping with the university years, is distinct from other developmental periods as it brings on a number of new and unpredictable changes (Arnett, 2007; Arnett et al., 2014). Unsurprisingly, this developmental period has been associated with a heightened level of mental health difficulties such as stress, anxiety, and depression (Arnett et al., 2014). In addition to a number of academic pressures, emerging adults may be faced with challenges such as relocating to attend a post-secondary school, living independent of family, becoming financially independent, and finding a life

partner, which can all be huge transitional stressors for emerging adults (Arnett et al., 2014; Beiter et al., 2015; Moore et al., 2021). Such challenges and developmental differences are seldom recognized by researchers and various mental health support systems (Arnett et al., 2014), but are essential to acknowledge in order to develop effective mental health support for emerging adults.

Mental Health Distress Related to COVID-19

In addition to the already elevated levels of stress and mental health distress experienced by university students, the Coronavirus disease 2019 (COVID-19) pandemic has brought on new and unexpected stressors for university students (Cao et al., 2020; Conrad et al., 2021; Fawaz et al., 2021; Son et al., 2020). Following the World Health Organization's (2020) declaration of COVID-19 as a global pandemic in March 2020, many countries placed lockdown restrictions, where businesses were forced to shut down, private and public gatherings were banned, and higher educational institutions had to move to online learning. (Conrad et al., 2021) Thus, university students were particularly impacted by this world-wide pandemic given stay-at home mandates, online or canceled university classes, relocation to home, and uncertainty of the future (Conrad et al., 2021; Son et al., 2020). In light of the situation, evidence found that students who relocated from their university campus due to the COVID-19 pandemic reported experiencing elevated levels of grief, loneliness, and generalized anxiety (Son et al., 2020). In summary, findings suggest considerable negative consequences of the COVID-19 pandemic on university students' mental health as well as negative impact on their academic life, health, and social relationships (Fawaz et al., 2021; Son et al., 2020). However, psychological resilience has been found to be a protective factor against negative consequences of the COVID-19 pandemic such as loneliness, depressive and generalized anxiety symptoms (Conrad et al., 2021). Taken

together, findings suggest there is a need to provide university students with appropriate and effective mental health support to build resilience when faced with stressors associated with the university environment and COVID-19 pandemic.

Online Approaches to Building Mental Health Resilience

In light of the elevated levels of mental health distress reported by university students, unsurprisingly mental health services on campus are reporting being overwhelmed with demand (Watkins et al., 2012). Considering higher education institutions' limited resources, this high demand will often result in longer wait times or difficulties in accessing mental health support (Mental Health Commission of Canada, 2016; Xiao et al., 2017). Thus, it has been suggested that university mental health services may want to re-evaluate their approach to provide additional support with a specific emphasis on preventative training to effectively meet dramatically shifting needs of students (Prince, 2015; Sontag-Padilla et al., 2016). As such, interventions for prevention need to focus on increasing mental health literacy and mental health resilience building skills-development to enhance mental well-being in the long term (Lynch et al., 2018; Turner et al., 2017). Enhancing coping skills can in turn promote the development of mental health resilience capacity on university campuses and thus decrease the overwhelming demand for mental health services (Sontag-Padilla et al., 2016).

As a result, online mental health programs have emerged as a salient approach to providing students with mental health resilience building strategies, as well as address barriers to service provision such as limited campus resources (Herrero et al., 2019; Lattie, Lipson, et al., 2019; Levin et al., 2018). Online mental health preventative interventions focusing on skills-building have been shown to be effective in promoting well-being in university students (Bendtsen et al., 2020; Clarke et al., 2015; Conley et al., 2016; Fenwick-Smith et al., 2018).

Specifically, interventions that focused on skills training (i.e., coping and stress management strategies) demonstrated a stronger pattern of effectiveness than non-skills building interventions (i.e., focusing on psychoeducation only; (Byrom, 2018; Conley et al., 2016). Beyond mental health benefits, such interventions have been found to have a positive impact on academic performance and academic productivity (Harrer et al., 2018). In addition, online mental health resilience programs have been shown to be beneficial given their flexibility (can be accessed at anytime and anywhere), anonymity, and cost-effectiveness (Batterham & Calear, 2017; Harrer et al., 2018; Hintz et al., 2015; Kern et al., 2018; Yang et al., 2018). Such interventions can also reach students who may be less likely to seek support because of barriers such as stigma related to mental health or lack of time (Ebert et al., 2019; Lattie et al., 2017).

Students' Use of Online Mental Health Resilience Building Programs

Although online mental health resources have been shown to be effective and provide benefits in terms of providing flexibility, anonymity, and easy access (Clarke et al., 2015; Conley et al., 2016; Frazier et al., 2016; Harrer et al., 2018), there is still only a limited number of students who access such services (Dunbar et al., 2018; Musiat et al., 2014). Several studies have reported high attrition rates across online mental health interventions (Clarke et al., 2015; Irish et al., 2020; Kern et al., 2018) suggesting potential barriers to the acceptability of these resources. Additionally, elevated dropout rates of such programs have been suggested to be the result of an unsatisfying user experience (Kern et al., 2018; Lattie, Adkins, et al., 2019). Furthermore, evidence from qualitative studies have found that students report quality of resources (i.e., trustworthiness, evidence-based) and overwhelming number of information (i.e., need for centralized information and resources) as barriers to accessing online mental health resources (Chan et al., 2016; Montagni et al., 2020). Such barriers are consistent with findings from a

review of online mental health smartphone applications which found that individuals reported lack of trust in the quality of the resources as well as poor engagement, lack of usability (i.e., not user-friendly), and poor accessibility (Torous et al., 2018). Although these results pertained to smartphone apps, findings appear to be translatable to other types of online mental health interventions and thus highlight potential barriers to engagement with online mental health resources (Lattie, Adkins, et al., 2019; Torous et al., 2018). Also, few studies have examined the acceptability of online mental health resilience building programs for university students. The few studies that have examined usability and acceptability outcomes of online mental health interventions for university students reported generally favorable rates of acceptability and satisfaction (Lattie, Adkins, et al., 2019; Lintvedt et al., 2013; Melnyk et al., 2015). However, participant and user response rates were often low (Lattie, Adkins, et al., 2019; Lintvedt et al., 2013), therefore making generalizations about the accurate acceptability of these interventions problematic. Integrating user satisfaction and feedback is essential to ensure that an intervention is appropriately engaging, intuitive to use, and pleasing to the intended user population (Nelson et al., 2010; Nicholas et al., 2016). Thus, there is a need to evaluate the acceptability of these types of online resources to provide best practice recommendations and ensure that future initiatives are developed with the end user in mind.

Student Perspectives on Mental Health Resilience Building Initiatives

In addition to an increasing use of online modalities for mental health supports for students, another approach that has been gaining popularity is peer support and outreach approaches. Given the evidence demonstrating that university students are more likely to seek informal support (e.g., friends, family, peers) rather than formal support (e.g., mental health professional) for mental health difficulties (Goodwin et al., 2016; Lally et al., 2013; Levin et al.,

2018), peer-led approaches have been suggested as an accessible mental health resource for emerging adults (Ali et al., 2015; Shalaby & Agyapong, 2020). Peer-led approaches have included self-help groups run by peers, peer-led organisations/initiatives for advocacy and/or support, and peer support programs within existing agencies (Cyr et al., 2016; Solomon, 2004). Such approaches have emerged as a salient outlet allowing for the exchange of anonymous personal experiences, which mitigates the fear of embarrassment, a barrier to help-seeking in young adults (Clement et al., 2015; Cyr et al., 2016). Accordingly, peer support groups, especially when using a skills-building intervention approach may thus have value in higher education, supporting a necessary expansion in service provision.

While there is evidence for the effectiveness of traditional peer support interventions (i.e., active listening support, Alcoholics Anonymous peer supporter; Byrom, 2018; Shalaby & Agyapong, 2020) in promoting well-being, studies have yet to examine the effectiveness and acceptability of peer-led interventions for online delivery of mental health resilience building programs. Specifically, considering the suggested preference for informal support reported by university students, examining peer-led versus MHSP-led mental health resilience building programs' effectiveness and acceptability would be beneficial to examine whether this would be a feasible approach within a university context. Furthermore, many programs are designed and implemented with very little input from students, however it has been suggested that the involvement of target users is crucial to the acceptability and effectiveness of such interventions (Aryana & Brewster, 2020; Nicholas et al., 2016; Orlowski et al., 2015).

Participatory Action Research in Mental Health Program Development

An approach that has been suggested to ensure university students' needs are met and to improve the program development process is using a Participatory Action Research (PAR)

model (Nicholas et al., 2016). The PAR model uses an approach where members of communities affected by the research are actively involved in the research process (e.g., conceptualization, data collection, dissemination of findings; (Baum et al., 2006). The use of PAR in mental health has been shown to be beneficial due to mutual learning among participants, attention to the specific needs of mental health service users, and the promotion of power for those of potentially marginalized populations (Reason & Bradbury, 2005; Schneider, 2012). With involvement of intended users (students) throughout the planning, design, development, and dissemination processes, there is capacity for rapid preliminary appraisals, and it increases the likelihood of students reporting high acceptability with the program (Nicholas et al., 2016; Orlowski et al., 2015). Thus, the present thesis used a PAR model to co-create, evaluate, and disseminate an online peer-led versus MHSP-led skills-based outreach aimed at enhancing university students' mental health resilience. Using the expertise of student service users in the development of the online outreach program may increase user acceptability of the program, given previous literature revealing that such programs did not always meet university students' needs (Chan et al., 2016; Montagni et al., 2020).

Summary and Research Objectives

Considering the elevated levels of mental health distress reported by university students, the added stress associated with COVID-19, and the negative impact of poor mental health during this important developmental period of emerging adulthood, it is crucial to provide university students with appropriate support to build mental health resilience capacity during this challenging time. Although research has examined the effectiveness of online mental health resilience building interventions, few studies have evaluated their acceptability. Furthermore, to our knowledge no studies have examined the acceptability and effectiveness of a MHSP-led

versus peer-led online mental health resilience building outreach for university students developed using a PAR model. Additionally, there is a need to examine specific factors contributing to university students' positive and negative impressions of these programs. Such evaluations are crucial to ensure that university student needs and expectations are met, given evidence reporting students not accessing these programs, low engagement rates, and discontent with certain programs. Moreover, if proven to be effective and acceptable, online peer-led service delivery could provide cost effective and accessible mental health resilience building support for university students and address issues of overwhelming demand.

Thus, the aim of the present thesis was to consider these gaps and limitations in the existing literature by evaluating the acceptability and effectiveness of the SCOOP, an online mental health resilience building program for university students. Specifically, the first objective is to explore the acceptability, satisfaction with, and effectiveness of the SCOOP as well as to evaluate differences between MHSP-led versus peer-led versions of the program. The second objective aimed to explore students' perspectives of the SCOOP, specifically examining positive and negative impressions of the program. To investigate these objectives, the current thesis is comprised of two studies. Study 1 sought to evaluate the acceptability and effectiveness of a MHSP-led versus a peer-led online mental health resilience building program against a comparison group at three time points (baseline, six-week post, and one-month follow up). Subsequently, Study 2 sought to examine university student's impressions of online mental health resilience building program developed using a Participatory Action Research (PAR) methodology, longitudinally from the onset of the pandemic to the early adjustment (4 months following the pandemic onset).

Chapter 3: Study 1

Comparing a Peer-led vs. Mental Health Service Provider-led Mental Health Outreach Program for University Students

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Abstract

University students are reporting concerning levels of mental health distress and challenges. University mental health service provider (MHSP)-led support has been shown to be effective in supporting students' mental health; but these services are often resource intensive. Consequently, new approaches to service delivery such as online and peer support initiatives have emerged as a cost-effective and efficient approach to support university students. However, these approaches often lack an evidence-based skill-building focus or lack formal training for peer supporters, and results show mixed findings on their effectiveness. Thus, the overarching goal of the present study was to evaluate a MHSP-led versus peer-led online mental health resilience building video outreach program against a comparison group. Participants were 217 undergraduate students (M_{age} = 20.40 years, *SD* = 1.96, 79.7 % females) who were randomly assigned to one of the intervention groups (MHSP-led (*n*=69) or peer-led (*n*=73)) or the comparison group (*n*=75). Participants in the intervention groups were asked to watch three brief skills-building videos addressing strategies for building mental health resilience, while the comparison group was waitlisted. The MHSP-led and peer-led video series were identical in content where presenters used a script to ensure consistency across the programs, but videos differed in which they were either MHSP-led or peer-led. All participants were asked to complete online self-report measures of stress, coping self-efficacy, social support, social connectedness, mindfulness, and quality of life at baseline (Time 1), six weeks later (Time 2; post), and 10 weeks later (Time 3; follow up). Results from a series of two-way ANOVAs found no significant differences between any of the three groups. Surprisingly, a main effect of time revealed that all students improved on several well-being outcomes. Additionally, results from the program satisfaction revealed that both the MHSP-led and peer-led and programs were rated very highly and at comparable levels. Thus,

findings suggest that an online mental health resilience building video outreach may be acceptable and satisfactory for university students regardless of if it is MHSP-led or peer-led. Furthermore, the overall increases in wellbeing across groups which coincided with the onset and early weeks of COVID-19 suggest an unexpected pattern of response amongst university students to the early period of the pandemic. Limitations and barriers as well as research implications will be discussed.

Comparing a Peer-led vs. Mental Health Service Provider-led Mental Health Outreach Program for University Students

Over the past decade, mental health difficulties in university students have become a significant problem, with reports of 20% of students experiencing clinical depression while approximately 59% report experiencing more than average to tremendous levels of stress over the past 12 months (American College Health Association, 2019). Although the traditional mental health service provider (MHSP)-led support offered through universities has been shown to be effective in increasing well-being in students, it is often costly, resource intensive, and incurs lengthy wait times due to the overwhelming demand (Matthews & Csiernik, 2019; Mental Health Commission of Canada, 2016). Online peer-led initiatives have been suggested as a cost-effective and efficient approaches to provide additional support and build capacity for mental health resilience in university students, but studies report mixed findings on the effectiveness of these approaches and a need for an evidence-based skills-building focus in these types of interventions (Ali et al., 2015; Byrom, 2018; Cyr et al., 2016; Fortuna et al., 2020; Kaplan et al., 2011). Thus, the main objective of the study was to explore the acceptability, satisfaction with, and effectiveness of an online mental health resilience building program, as well as to evaluate differences between MHSP-led versus peer-led variations of the program.

Evidence shows that university students are experiencing heightened levels of mental health distress. The National College Health Assessment in a survey across Canadian campuses with 55,284 student respondents, revealed that 66% of students reported feeling overwhelming anxiety and 87% felt overwhelmed within the last year (American College Health Association, 2019). In addition to these heightened levels of stress, the developmental period of emerging adulthood has been associated with a peak in unhealthy coping behaviours such as alcohol and

drug abuse (Sussman & Arnett, 2014). Generally spanning from 18 to 29 years of age, emerging adulthood is a theoretically and empirically distinct developmental period that takes place between adolescence and adulthood (Arnett, 2000). Characteristics of this developmental period include instability and feeling "in-between", which have been found to have important mental health implications for this demographic such as eliciting feelings of depression and anxiety (Arnett, 2014; Arnett et al., 2014). As such, there is a clear need to provide emerging adults with appropriate and effective support for building resilience and managing stress (Schiller et al., 2016).

As a result, leading organizations have indicated a need for preventative programs aimed at enhancing mental health resilience. Specifically, the World Health Organization has identified increasing self-management and self-care ability through skill development as core areas to be addressed in efforts to enhance the mental health of emerging adults (World Health Organization, 2017). Furthermore, they note that increasing self-management and self-care would, in turn, result in concomitant decreases in demand for more intensive therapeutic interventions.

Current Mental Health Support

Several evidence-based self-care and stress management strategies (e.g., mindfulness strategies, progressive muscle relaxation, diaphragmatic breathing, emotion regulation strategies) have been shown to promote resilience through effectively reducing stress and increasing well-being in emerging adults (Chellew et al., 2015; Hunt et al., 2018; Regehr et al., 2013; Uliaszek et al., 2016). Students will often access these strategies through professional counselling support which has been found to have a significant decrease in distress symptoms and improvement in academic performance (Biasi et al., 2017; Vescovelli et al., 2017).

Although many of these strategies and programs have been shown to be effective in supporting university students, they are often presented in individualized therapy/counselling sessions (e.g., dialectical behavioral therapy, cognitive behavioural therapy), and these programs often operate at a significant financial cost (Matthews & Csiernik, 2019; Mental Health Commission of Canada, 2016; Pistorello et al., 2012). Due to heightened demands, this reduces the feasibility and access to such programs for all university students experiencing mental health distress (absent of mental illness) in university environments with limited budgets and a lack of funding being identified as key barriers to mental health provision (Bryan & Arkowitz, 2015; Hunt et al., 2012; Storrie et al., 2010; Watkins et al., 2012; Xiao et al., 2017). These findings highlight the potential need for increasing access to these evidence-based skills to improve university students' ability manage stress and enhance their coping during the challenging developmental period of emerging adulthood.

New Approaches for Additional Support

As a result, new cost-effective approaches to service delivery are being explored such as online mental health support. The development of online mental health resources can provide improved access to evidence-based support to build mental health resilience on campuses (Clarke et al., 2015). Increasingly, evidence demonstrates that online mental health support provides effective, efficient, and cost-effective support for individuals experiencing mental health distress (absent of mental illness; Clarke et al., 2015; Griffiths et al., 2010; Harrer et al., 2018). Furthermore, anonymity has been reported as a benefit of online mental health resources for university students who may be reluctant to seek support due to stigma related to mental health (e.g., Chan et al., 2016).

Another novel approach that has been suggested as an effective approach requiring lower resources to providing universal mental health resilience support, has been through peer support initiatives. Peer support initiatives have emerged to decrease stigma and increase help-seeking through sharing of information by those with similar experiences (Cyr et al., 2016). Concurrently, studies have found that embarrassment associated with accessing mental health support was associated with a lower likelihood to perceive a need for help or use of mental health services (Chang et al., 2019; Clement et al., 2015). Thus, evidence shows that when students experience mental health difficulties, they tend to turn first to their peers for support to discuss these types of challenges (Goodwin et al., 2016; Lannin et al., 2020; Rickwood et al., 2007). Accordingly, peer support and online mental health outreach may be interesting to examine as approaches to provide access to evidence-based resilience building strategies for university students. However, although online mental health resources and peer support approaches are gaining popularity, many are not evidence-based or have been evaluated in terms of their effectiveness or acceptability in university student populations (Ali et al., 2015; Montagni et al., 2020; Nicholas et al., 2016).

In summary, university students are reporting elevated levels of stress and mental health distress (American College Health Association, 2019), and there is a need to provide them with evidence-based strategies for mental health resilience building. University MHSP-led support has been shown to be effective in supporting students' mental health (Biasi et al., 2017; Vescovelli et al., 2017), however these services are often resource intensive and can not support all students experiencing mental health distress (absent of mental illness). Online mental health programs and peer-led initiatives have surfaced as a cost-effective and accessible approach to support students, but additional research is needed to better understand whether these approaches

are effective (Ali et al., 2015; Fortuna et al., 2020). In light of the increasing popularity of peer support initiatives, further research is needed to understand whether there are differences in the acceptability and effectiveness of an online mental health program as a function of whether the program is delivered by a MHSP or peer.

The Present Study

Thus, the overarching goal of the present study was to evaluate a MHSP-led versus peer-led mental health resilience skills-building online video outreach program against a comparison group.

Objective 1. Evaluate the acceptability and satisfaction with a MHSP-led versus peer-led online skills-building video outreach for university students.

Objective 2. To compare group differences between a MHSP-led versus peer-led online skills-building video outreach and a comparison group in terms of well-being outcomes (i.e., decreased stress, increased coping self-efficacy (CSE), social support, social connectedness, mindfulness, and quality of life (QoL)) in February 2020 (T1), six weeks later (T2; end of March to beginning of April), and again one month later (T3; April-May 2020).

Given the exploratory nature of this study, no specific hypotheses were made regarding the differences in the acceptability and satisfaction (objective 1) as well as effectiveness (objective 2) between a MHSP-led versus peer-led mental health resilience skills-building online video outreach program.

Method

Participants

The University's Research Ethics Review Board approved the study prior to any data collection. Based on data analysis requirements, a priori power analyses conducted with

G*Power (Faul et al., 2007) with a medium effect size and a power of .80 suggested minimum sample sizes of 186. Therefore, to account for attrition, a total of 274 undergraduate students were recruited (78.1% female; M_{age} = 20.52, *SD* = 2.35). However, of those 274 students who consented to participate, following data cleaning and participants who withdrew, the final total sample was of 217 undergraduate students (M_{age} = 20.44 years, *SD* = 1.98). Of this final sample, 171 self-identified as woman (78.8%), 42 as man (19.4%), 4 as non-binary (1.8%). Participants were enrolled in different academic faculties, including Arts and Science (40.6%), Science (18.0 %), Agricultural and Environmental Studies (9.7%), Engineering (9.2%), Education (8.8 %), Management (4.6%), and others (8.5%). Of this sample, 74.7% of students reported having experienced stress and/or mental health or well-being difficulties at a level that interfered with their ability to engage in the activities of everyday life (e.g., school, work, relationships, health-promoting behaviours, etc.) within the past year. Furthermore, 25.3% of participants reported currently accessing mental health services such as counselling or therapy.

Program Development and Description

The Stress and Coping Online Outreach Program (SCOOP) was developed using a Participatory Action Research (PAR) model which is defined as "a partnership among equals with complementary knowledge and expertise". Collaboration, education, and action are the three key elements of participatory research. Consistent with the PAR model, the program was developed using the expert knowledge of evidence-based strategies and best practice applications of a multidisciplinary team of researchers (4), student service users (about 8-10 core team members who were consistently involved throughout the study and about 15 team members whose participation in the project was fluid), mental health service providers (3), and decision makers (2). All stakeholders were actively involved throughout the project and consulted for

project related decisions (e.g., study design and conceptualization, program development and dissemination).

The online outreach program focused on four key areas of mental health resilience building identified by the multi-stakeholder team's expertise and review of the literature: dealing with stress, decreasing self-criticism, improving self-care and help-seeking, and enhancing social connections and social support. Using videos, infographics, guided audio recordings, and podcasts, students were provided with clear descriptions of each area of mental health resilience as well as a variety of evidence-based strategies specifically targeting each of these areas. The program was hosted entirely online. A first video was sent to students describing the online program, its overall focus, and how to access the skills-based strategies on the websites' interactive resource library. At a two-week interval, two subsequent videos were sent to (a) help students problem-solve common challenges to strategy practice, and (b) maintain long-term strategy practice habits. In order to assess differences in terms of preference for deliverer, two series of videos were created: one in which the deliverers were MHSPs and one in which they were undergraduate students (i.e., peers). The videos were identical in content where presenters used a script to ensure consistency across the programs, but videos differed in which they were either MHSP-led or peer-led. Additionally, the video presenters in the peer-led and MHSP-led videos were comparable with a Caucasian man presented in both the peer and MHSP-led videos and a woman of color presented in both the MHSP-led and peer-led videos.

Procedure

Participants were recruited using a study flyer distributed to students in-person on campus and online through email listservs, social media platforms, and from an existing database of university students who participated in previous studies and agreed to be followed-up with.

The flyer advertised a study providing students with access to a stress management program which could be completed at home, on their own time, and that all information would be kept strictly confidential. Students who indicated they were interested in participating were sent a confirmation email with a copy of the consent form and were notified of the study start date. Then, when the program delivery started, participants who had signed up so far were sent an email with an individualized link to complete the online baseline survey (T1). Recruitment was ongoing, so new participants were sent the baseline as they signed up for the study, which led to a staggered recruitment approach where participants completed baseline from February to the first week of March.

Participants were then randomly assigned to one of the three conditions (MHSP-led, peer-led, or a comparison group) while counterbalancing the three groups based on gender and preference for seeking help from MHSPs or peers (using results from the General Help-seeking Questionnaire). One week after the baseline questionnaire was sent, participants in the intervention groups received either the MHSP-led video or the peer-led video (video 1) depending on which group they were randomly assigned to, as well as a link for access to a resource library. The following two videos were sent two weeks apart. Participants were encouraged to access the resource library over the duration of the program and were reminded with each video link sent. Participants in the comparison group were waitlisted. All participants then received post (T2; end of March to beginning of April) and follow-up (T3; end of April to beginning of May) 6 and 10 weeks following the baseline completion (see Figure 1 for the project timeline).

Following completion of the study, students received an e-mail with a personalized profile indicating their individual scores on various measures, a list of stress management

resources, and free access to a website with strategies for mental health resilience building designed by the research team. Additionally, all participants in the wait-list comparison group received the SCOOP program. Participants were compensated $10 for each survey completed, for a total of $30 and were also entered in a raffle for a one in four chance to win $50.

COVID-19 Context

In March 2020, when most students received the Stress and Coping: Online Outreach Program (SCOOP), an online mental health outreach program for university students, a state of emergency was declared in the city in which the current study was conducted, which resulted in the closure of all recreational centres, public parks and playgrounds, public libraries, bars, restaurants, movie theatres, concert venues and places of worship, as well as banning public gatherings (National Assembly of Québec, 2020). As per public health guidelines, all Montreal residents were recommended to stay home unless purchasing necessities (e.g., food, supplies), for medical need, for essential work travel, or for one form of exercise per day. Strict social distancing guidelines and travel restrictions were implemented. Additionally, the university in which the current study took place was closed for a period of two weeks following students' reading week (week off for spring break). There was a transition to online learning, the university allowed flexibility for final assignments (students could be provided with extensions, some final assignments were removed) and students were provided with a Pass/Fail option rather than a final grade. The data for the present study was collected at three time points: pre-pandemic (T1; February 2020), pandemic onset (T2; March-April 2020) and early pandemic (T3; April-May 2020).

Measures

The present measures (well-being outcomes) were selected following a scoping review of the literature on key factors contributing to mental health resilience building (e.g., Brewer et al., 2019; Howard et al., 1999; Pidgeon et al., 2014; Sanderson & Brewer, 2017; Wagnild & Young, 1993) and team meeting discussions where all stakeholders approved of the selected measures given the lack of universally accepted definition of resilience (Brewer et al., 2019).

Perceived Stress. The *Perceived Stress Scale* (PSS; Cohen et al., 1983) is a widely used self-report measure of individuals' perception of stress. This measure contains 10 items in which participants indicate their experience of stress on a 5-point Likert scale (0 = *never* to 4 = *very often*). Items were adapted to reflect experiences during the past week and include statements such as "In the past week, how often have you felt difficulties were piling up so high that you could not overcome them?" Ratings were averaged across items such that higher scores represented greater perceived stress. The PSS has good reliability (Cronbach's $\alpha = .89$), construct validity, and predictive validity with reports of psychological and physical symptoms (Cohen, 1988; Roberti et al., 2006). In the present study, the PSS has a good internal consistency. Cronbach's alphas at Time 1, Time 2, and T3 were .86, .82, and .85, respectively.

Coping Self-efficacy (CSE). The *Coping Self-Efficacy Scale* (CSES; Chesney et al., 2006) is a measure of one's confidence in effectively engaging in coping behaviors in the face of challenges. This measure contains 26 items in which participants indicate confidence in their coping strategies when it comes to handling challenges and stressors on a 11-point Likert scale (0 = *cannot do at all* to 10 = *certain can do*). The CSES states "When things aren't going well for you, or when you're having problems how confident or certain are you that you can do the following:" and include statements such as "find solutions to your most difficult problems" and "see things from the other person's point of view during a heated argument." Higher scores on

the CSES represent higher coping-self efficacy. The CSES has good internal consistency (Cronbach's α = .91), and test–retest reliability (Chesney et al., 2006). In the present study, the CSES has a good internal consistency. Cronbach's alphas at T1, T2, and T3 were .92, .93, and .94, respectively.

Social Support. The *Multidimensional Scale of Perceived Social Support* (MSPSS; Zimet et al., 1988) is a 12-item self-report questionnaire developed to assess the subjective perception of social support adequacy from family, friends, and significant others. Items are rated on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Sample items include "There is a special person who is around when I am in need" and "My family really tries to help me." Higher scores on the MSPSS represent higher perception of social support. The MSPSS has good reliability (Cronbach's alpha ranging from .81 to .98),) and has good convergent and construct validity (Zimet et al., 1990). In the present study, the MSPSS has a good internal consistency. Cronbach's alphas at T1, T2, and T3 were .89, .91, and .92, respectively.

Social Connectedness. The *Social Connectedness Scale Revised* (SCS-R; Lee et al., 2001) is a 20-item self-report questionnaire that assesses emotional distance of the self from both friends and society, along with maintaining a sense of closeness. Items are rated on a 6-point Likert scale (1 = *strongly disagree* to 6 = *strongly agree*). Sample items include "I feel distant from people" and "I am able to relate to my peers." Higher scores on the SCS-R represent higher perception of social connectedness. The SCS-R has good internal reliability (Cronbach's α = .92) and has good convergent and discriminant validity (Lee et al., 2001). In the present study, the SCS-R has a good internal consistency. Cronbach's alphas at T1, T2, and T3 were .90, .89, and .91, respectively.

Mindfulness. The *Mindful Attention Awareness Scale* (MAAS; Brown & Ryan, 2003) measures individuals' dispositional mindfulness (i.e., general tendency to be mindful) by assessing the frequency of mindful states over time. The MAAS consists of 15 items asking participants to report the frequency with which they have certain experiences on a 6-point scale (1 = *almost always* to 6 = *almost never*). Sample items include descriptions of experiences such as, "I find myself preoccupied with the future or the past" and "I find myself doing things without paying attention". Scores for this measure are such that higher scores indicate higher levels of mindfulness. The MAAS has demonstrated strong internal consistency (Cronbach's α = .89), as well as high test-retest reliability, convergent and discriminant validity (MacKillop & Anderson, 2007). In the present study, the MAAS has a good internal consistency. Cronbach's alphas at T1, T2, and T3 were .80, .79, and .91, respectively.

Quality of Life (QoL)**.** The *World Health Organization's Quality of Life Brief* questionnaire (WHOQOL-BREF; WHO, 1998) is a 26-item measure assessing individuals' perception of their life quality within the following domains: physical health, psychological health, social relationships, and their environment. Participants are asked to rate items related to their experience of their own quality of life such on a 5-point Likert scale (1 = *not at all* to 5 = *extreme amount*). Sample items include "To what extent do you feel that physical pain prevents you from doing what you need to do?" and "How satisfied are you with the conditions of your living place?" The WHOQOL-BREF shows decent reliability (Cronbach's α values for physical health, psychological health, social relationships, and environmental health were .65, .77, .52 and .79, respectively) and good internal consistency (Vahedi, 2010). In the present study, the WHOQOL-BREF has an acceptable internal consistency. Cronbach's alphas for the physical health domain were .72 (T1), .71 (T2), and .75 (T3), the psychological domain were .49 (T1), .60

(T2), and .57 (T3), the social relationships domain were .60 (T1), .65 (T2), and .65 (T3), and the environment domain were .78 (T1), .79 (T2), and .79 (T3).

General Help-seeking. The *General Help-seeking Questionnaire* (GHSQ; Wilson et al., 2005) is a 10-item measure of formal and informal help-seeking and uses the following prompt: "If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?". The GHSQ was adapted to include help from classmates, academic advisors, residence supports, professors, research supervisors, and peer support organizations. Scores on willingness to seek support from peers (i.e., informal) and willingness to seek support from professionals (i.e., formal) were examined to randomize participants across program condition (MHSP-led group, peer-led group, comparison group). The GHSQ has excellent good reliability (Cronbach's $\alpha = .91$), and has good construct validity (Wilson et al., 2005). In the present study, the GHSQ has a good internal consistency. Cronbach's alpha at T1 was .70.

Training Satisfaction. The *Response to Training* is a researcher-developed measure assessing participants' acceptability with the program content and delivery. The questions were delivered according to the three levels of Kirkpatrick's New World Model (Kirkpatrick & Kirkpatrick, 2016) as follows: (1) student viewers' response (i.e., satisfaction, engagement, relevance); (2) learning (i.e., knowledge, skills, attitude, confidence, commitment); (3) use of skills (i.e., willingness to use, frequency of use). All items were scored on a 4–6-point Likert-scales where higher scores represented a better response to training. Sample items include "I would recommend the SCOOP to other university students" or "I am planning to use the SCOOP strategies in the future..."

Data Analysis

All data were analysed using SPSS version 26. The data were checked for patterns of missingness, univariate and multivariate outliers, and for violations of assumptions prior to running the main analyses. A series of chi-squares were used to test the first objective, which was to compare group differences on the online outreach program's acceptability between the types of deliverers (MHSP vs. peer). A series of two-way mixed ANOVAs were used to test the second objective, which was to compare group differences between a MHSP-led and peer-led online skills-building video outreach and a comparison group in terms of well-being outcomes. To account for multiple pairwise comparisons throughout the data analysis, the cut-off for statistical significance was set at .017 (.05/3) as per the Bonferroni correction.

Results

Data Cleaning

A total of 274 individuals consented to participate in the present study (78.1% female; M_{age} = 20.52, *SD* = 2.35). Of this total sample, all participants who had completed less than 50% of the three surveys were excluded from the analyses (*n* = 54). Additionally, considering the focus on emerging adults (18-29 years old), all participants who identified as being 30 + years old were excluded from the sample (*n* = 3, M_{age} = 33.00, *SD* = 3.00). The final sample consisted of 217 participants (M_{age} = 20.40 years, *SD* = 1.96; 79.7 % females) with 69 in the MHSP-led, 73 in the peer-led, and 75 in the comparison group.

Prior to running primary analyses, a missing values analysis was conducted and revealed that data were missing completely at random (MCAR) given that less than 5% of data points were missing per variable (Tabachnik & Fidell, 2013). To preserve the sample size, the Expectation Maximization (EM) imputation method was used where missing values were imputed within each subscale of measures in the MHSP-led, peer-led, and comparison groups separately to maximize prediction accuracy. The data were then screened for potential univariate outliers within each of the dependent variables. Cases three standard deviations above or below the mean were identified as potential outliers. A total of 14 potential univariate outliers were identified and Winsorized to a score with a one-unit difference from the next most extreme score within each variable to maintain rank order. No multivariate outliers or violations of normality were found within any of the three groups. All assumptions for the two-way mixed ANOVAs were met satisfactorily.

Preliminary Analyses

In order to determine whether the group assignment was truly random, multiple one-way ANOVAs examining group (MHSP-led, peer-led, comparison) differences in baseline stress, CSE, social support, social connectedness, mindfulness, and QoL were conducted. Results from the one-way ANOVAs revealed no significant results indicating that none of the groups differed on any of the well-being outcomes at baseline and groups were comparable. Means and standard deviations for well-being outcomes of each group are included in Table 1.

Main Analyses

Objective 1

The first objective sought to evaluate the acceptability and satisfaction with a MHSP-led versus peer-led online skills-building video outreach for university students. A series of chi-squares were conducted using the training satisfaction survey at T2 (see Table 2). Results from the chi-squares revealed that there was no significant difference between the MHSP-led and peer-led acceptability of the program on any of training satisfaction items selected to represent each level of the Kirkpatrick model (student viewers' response, learning, and use of skills). Overall, results of the training satisfaction demonstrate that the majority of students were satisfied with the program (see Table 2). For example, 80.6% of students in the MHSP-led group and 90.8% in the peer-led group said that they were planning to use the SCOOP strategies *sometimes* to *frequently*. Additionally, 95.9% of students in the MHSP-led group and 98.7% in the peer-led group said that they *somewhat agree* to *strongly agree* that they would recommend the SCOOP to other university students. By T3, 61 % of the students who actually used the SCOOP strategies reported having used the SCOOP strategies to cope with COVID-19 stress.

Objective 2

The second objective sought to compare group differences between a MHSP-led versus peer-led online skills-building video outreach and a comparison group in terms of well-being outcomes (i.e., decreased stress, increased CSE, social support, social connectedness, mindfulness, and QoL) at three different time points using a series of two-way mixed ANOVAs. Based on results from Mauchly's test of sphericity indicating that the assumption of sphericity was violated for some of the two-way mixed ANOVAs, the Greenhouse-Geisser correction was used for all two-way mixed ANOVAs for a more conservative approach. As presented in Table 3, results did not reveal any significant two-way interaction between groups (MHSP-led/peer-led/comparison) and time (baseline/post/follow-up) on stress, CSE, social support, social connectedness, mindfulness, and QoL, indicating that there was no effect of intervention group on any of the well-being outcomes over time. Additionally, results showed that there was no main effect of group for any of the outcomes assessed, which indicates that regardless of time, there were no group differences on any of the well-being outcomes. However, as reported in Table 3, the main effect of time was statistically significant for CSE, social support, mindfulness, QoL social relationship domain, and the QoL environment domain, which indicates that overall, regardless of group (MHSP-led, peer-led, or comparison), there was a change in these well-being outcomes over time. Pairwise comparisons were conducted using the Bonferroni correction set at .017 (.05/3) to assess between which time points the time effects occurred. As presented in Figures 2 and 3, results showed that all students increased in CSE and mindfulness from T1 to T2 and then remained stable at T3. As presented in Figure 4, results also showed that students increased on the QoL (environment domain) from T1 to T3, although T2 was not statistically significant with any other time point. Finally, results of the pairwise comparisons showed that

both the social support and QoL (social relationships domain) significantly increased from T1 to T2 and then significantly decreased from T2 to T3 (see Figures 5 and 6).

Discussion

The overarching goal of the present study was to evaluate a MHSP-led versus peer-led mental health resilience skills-building online video outreach program against a comparison group. Specifically, the first objective sought to compare group differences on the online outreach program's acceptability between the types of deliverers (MHSP versus peer). Building on this, the second objective sought to compare group differences between the intervention groups (MHSP-led and peer-led) and a comparison group in terms of well-being outcomes (i.e., decreased stress, increased CSE, social support, social connectedness, mindfulness, and QoL) at pre-pandemic (T1; February 2020), pandemic onset (T2; March-April 2020) and early pandemic (T3; April-May 2020).

Interestingly, the online outreach program received similarly high acceptability and satisfaction ratings regardless of whether the program deliverer was an MHSP or a peer. Both the MHSP-led and peer-led programs had the majority (80.6% in the MHSP-led group and 90.8% in the peer-led group) indicating that they were planning to use the SCOOP strategies in the future from *sometimes* to *frequently*. Additionally, a large proportion of students in the MHSP-led group (64.8%) and in the peer-led group (70%) indicated that they felt that after watching video 1, they learned *a medium amount* to *a lot.* Thus, acknowledging the need to integrate cost-effective and easily accessible mental health programs to build mental health resilience capacity and support students in coping with general stress (Auerbach et al., 2016; Mental Health Commission of Canada, 2016), these findings provide promising early evidence that an online skills-building resource for teaching mental health resilience is a satisfactory and acceptable

resource for university students. This is in line with previous literature reporting high satisfaction of online mental health skills-building programs (Fortuna et al., 2020; Rickwood et al., 2019). However, to our knowledge, this is the first study to examine such acceptability and satisfaction for a universal resilience building online program in a sample of university students. Interestingly, given non-significant differences between the groups, findings suggest that a resilience skill-building video outreach may be acceptable for university students regardless of service delivery type (MHSP-led or peer-led).

Nonetheless, interpretation of the present study's findings needs to be carried out with a particular focus on the societal context in which the program was delivered. Importantly, while the SCOOP program was being delivered, a state of emergency due to the COVID-19 pandemic was declared in the province in which the present study was conducted. This brought on significant changes for students such as social distancing measures which resulted in the closure of all recreational centres, public parks and playgrounds, bars, restaurants, movie theatres, concert venues and places of worship (National Assembly of Québec, 2020). All public gatherings were banned, and Quebec residents were advised to stay home. In addition, students moved to online learning and could no longer frequent the university. Thus, such elevated levels of reported acceptability and satisfaction are encouraging since the program was disseminated at the beginning of the COVID pandemic when there was a lot of uncertainty, and the government regulations as well as students' lifestyle were rapidly changing (e.g., Charles et al., 2021; Son et al., 2020). Additionally, the elevated proportion of students who reported having used the SCOOP strategies to cope with COVID-19 stress suggests that these types of strategies are feasible to use in times of heightened stress. However, considering the societal context, this may have played a role in the non-significant group differences between the satisfaction with the

MHSP-led and peer-led programs. Given the challenges associated with the pandemic, students may have been eager to access online mental health resources regardless of who was delivering the program. Although findings may have important implications for the development and integration of future outreach programs seeing its high acceptability and satisfaction, non-significant group differences should be interpreted with caution based on the context.

The second objective was to compare group differences between a MHSP-led versus peer-led online skills-building video outreach and a comparison group in terms of well-being outcomes over time (baseline, post, follow-up). While students rated the program very positively, surprisingly, no difference was found between any of the three groups on any of the well-being outcomes over time. Thus, unexpectedly the intervention groups did not demonstrate a greater improvement over time in well-being outcomes relative to the comparison group, although as discussed below, there was a general increase in wellbeing for all groups. Even though previous studies have found that online interventions were effective in supporting university students' stress management (e.g., Amanvermez et al., 2020), this lack of a detectable intervention benefit could be due to the unique COVID-19 context which coincided with the study.

The elevated reports of stress associated with the COVID-19 pandemic and the need to move students to online learning, resulted in a plethora of online resources offered through the university and community to effectively support students during this time. In addition to wellness resources being offered across the university, the university was closed for two weeks and demands of final examinations were heavily reduced, with students having the option to use a Pass/Fail option that would not affect their GPA. Consequently, usual academic stressors experienced by university students were not as salient during this time (Copeland et al., 2021). In summary, all three groups in the present study would have had access to several mental health support resources through the

university and community as well as a decrease in academic stressors. Therefore, the lack of significant differences between the MHSP-led, peer-led, and comparison group may not be representative seeing as there may have been potential interference with the experimental design of the study for reasons outside of the control of the research team.

However, there was a significant change over time for CSE, social support, mindfulness, and the QoL (social relationships and environment domains) for all three groups. Although, the observed patterns of change differed for these variables. Specifically, students increased in CSE and mindfulness from T1 to T2 and remained stable from T2 to T3. Similarly, students reported an increase in the quality of their environment (i.e., QoL environment domain) from T1 and T3. These findings were particularly surprising in light of the heightened levels of mental health distress reported as a result of the COVID-19 pandemic, it would be expected that all university students would report a decrease in well-being outcomes at the pandemic onset and early pandemic (e.g., Charles et al., 2021; Conrad et al., 2021; Son et al., 2020). These findings are in line with a study conducted by Hamza et al (2021) demonstrating that students with pre-existing mental health concerns reported an increase or similar levels of psychological well-being compared to a year prior. A possible explanation for results of the current study is that participants recruited for the study were those who were interested in participating in a stress and coping program and thus may have resulted in a selection bias whereby participants already had greater mental health difficulties, stress, and interest in coping. Similar to findings from Hamza et al (2021), students in the current sample were already reporting mental health difficulties and may have been better able to cope with the changes associated with the COVID-19 pandemic such as increase social isolation. Social distancing has been identified as a key stressor for university students (Son et al., 2020), but this may have had adverse impacts on students who are not accustomed to feeling isolated and alone

(rather those who may already feel this way). Additionally, it is hypothesized that for students with a history of mental health difficulties, their CSE may have increased as a result of seeing that they have the ability to cope with stressors from the pandemic.

Moreover, mindfulness has been prevalent as an evidence-based strategy for managing stress, as a result, several means of support offered to deal with the pandemic stress aimed at enhancing mindfulness, which may explain the increase in these specific well-being outcomes (Antonova et al., 2021; Reyes, 2020; Weis et al., 2021). Finally, the increase in the QoL (environment domain) highlights the positive experiences of the COVID-19 pandemic, often overlooked in the literature (Mettler et al., 2021). The QoL (environment domain) measures facets such as "Opportunities for acquiring new information and skills" and "Participation in and opportunities for recreation" which may have increased as a result of the reduction of academic stressors and increase in time available for leisure activities.

Interestingly, the pattern of change for social support and the QoL (social relationships domain) was different, with an increase from T1 to T2 before returning to baseline levels at T3. The QoL social relationships domain includes facets such as an individual's personal relationships and social support. The increase in social support and QoL (social relationship domain) is consistent with previous literature on natural/societal disasters where there is an increase in social support directly following these tragic events (Karlin et al., 2012; Madsen & O'Mullan, 2016). Thus, the increase in perceived social support is hypothesized to have been related to the increase in families, peers, and communities reaching out to individuals to ensure safety and well-being. Additionally, this is consistent with findings from a community sample of adults where an increase in social support as a result of the pandemic was also found (Tull et al., 2020). It is hypothesized that as individuals adapted to the pandemic, there was less of a need to reach out to loved ones

which may have led to the return to baseline levels of perceived social support. However, the decrease in perceived social support and social relationships provide novel insight on the changes over time of students' adjustment to the pandemic and social distancing measures. Given the need to better understand university students' mental health during COVID-19 (Saltzman et al., 2020), these findings contribute to the literature by providing insight on the positive impact of the COVID-19 on university students' well-being. Future studies would benefit from examining specific factors linked to the increase in well-being outcomes during this time.

Limitations and Future Directions

The current study is not without limitations. Considering the program was disseminated during a time of change due to the onset of COVID-19 pandemic, results may have been different if the online outreach program was provided to deal with regular day to day stress. Thus, these results may not be generalizable to non-pandemic times and future research would benefit from evaluating the program effectiveness in a different context. Finally, there is limited generalizability of the findings due to a predominantly female (79.7%), university sample. As with other similar studies, recruitment from male populations serves as a barrier to the evaluation of mental health programs (Amanvermez et al., 2020). Future research may benefit from examining a more gender distributed sample.

Implications

Despite these limitations, the present study has demonstrated interesting findings regarding the use of an online mental health outreach program delivered by MHSPs and peers and regarding students' well-being during the COVID-19 pandemic. Although it is difficult to support the program's effectiveness seeing as there may be a potential impact of the COVID-19 pandemic on the study design, students reported high satisfaction and acceptability with the online mental health

outreach program regardless of service delivery type. This has potential clinical implications, whereby since online peer-led initiatives have been rated as highly acceptable, these types of approaches may be important to consider for supporting university students build mental health resilience and capacity to manage their stress during the challenging period of emerging adulthood. Furthermore, findings of the current study reveal that university students were coping better with the COVID-19 pandemic stress than expected. Since the current literature focuses predominantly on the negative impact of COVID-19 (e.g., Conrad et al., 2021; Fawaz et al., 2021), these findings may have important implications for future research who may want to investigate specific factors contributing to these positive experiences. Findings provide novel insight on university students' well-being at pandemic onset and overtime and can contribute to future research who may want to examine the long-term impact of COVID-19 on students' well-being.

Conclusion

The elevated levels of mental heath distress reported by university students and the difficulties associated with the developmental period of emerging adulthood, highlights the need to provide university students with appropriate mental health support. Thus, the current study reveals that an online mental health outreach program for university students shows promise as a cost-effective approach to support students in building mental health resilience as they navigate the exciting, but challenging period of emerging adulthood. Given high acceptability of both MHSP-led and peer-led programs, the study highlights that the content presented (strategies for skills building and psychoeducation) may play a more important role in students' acceptability than who is delivering the program. Hence, future initiatives may want to consider the involvement of peers in delivering similar online programs as an effective approach to address barriers to program dissemination such as limited resources. Additionally, a surprising increase

in student well-being despite pandemic concerns has been hypothesized to be associated with the decrease in academic stressors during this time. Nevertheless, findings highlight the need for future studies to examine specific factors contributing to the increase in well-being outcomes during this challenging period.

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Table 1

Preliminary One-way ANOVA Analyses for Group Differences (MHSP-led, Peer-led, and Comparison) at Baseline

	Means and Standard Deviations						**ANOVA Results**
	MHSP-led		Peer-led		Comparison		
Variable	M	SD	M	SD	M	SD	
Stress	21.37	5.76	22.58	6.99	22.41	5.77	$F(2, 214) = .84$, $p=.434$
Coping self-efficacy	134.23	28.97	137.1	39.24	134.7	38.37	$F(2, 214) = .20$, $p=.821$
Social support	5.19	0.96	5.22	1.01	5.21	1.07	$F(2, 214) = .07$, $p=.929$
Social connectedness	75.71	15.97	80.83	18.06	78.79	18.08	$F(2, 214) = 2.14$, $p=.121$
Mindfulness	3.57	0.81	3.64	0.83	3.64	0.74	$F(2, 213) = .37$, $p=.695$
QoL (physical health)	100.89	15.95	102.00	16.35	102.08	16.35	$F(2, 212) = .21$, $p=.815$
QoL (psychological health)	74.24	15.57	74.58	16.72	72.37	17.29	$F(2, 214) = .30$, $p=.745$
QoL (social relationships)	38.83	9.66	39.56	9.77	40.59	9.34	$F(2, 214) = .84$, $p=.434$
QoL (environment)	116.12	17.18	116.8	21.61	115.5	18.61	$F(2, 211) = .10$, $p=.902$

Table *2*

Training satisfaction by group

	MHP (*n*= 79)		Peer (n= 81)	
	n	**%**	***n***	**%**
I used the SCOOP strategies				
$\chi 2(2) = 1.84$, $p > .05$; Cramer's V = 0.112, $p > .05$				
Never/Rarely	27	37.5%	22	28.9%
Sometimes	40	55.6%	45	59.2%
Frequently	5	6.9%	9	11.8%
I am planning to use the SCOOP strategies in the future				
$\chi 2(2) = 3.97$, $p > .05$; Cramer's V = 0.164, $p > .05$				
Never/Rarely	14	19.5%	7	9.2%
Sometimes	36	50.0%	48	63.2%
Frequently	22	30.6%	21	27.6%
I would recommend the SCOOP to other university students				
$\chi 2(2) = 1.05$, $p > .05$; Cramer's V = 0.084, $p > .05$				
Strongly disagree to Somewhat agree	25	34.8%	24	31.6%
Agree	34	47.2%	33	43.4%
Strongly agree	13	18.1%	19	25.0%
Video 1 - After watching this video, I feel I learned…				
$\chi 2(2) = 2.84$, $p > .05$; Cramer's V = 0.139, $p > .05$				
Nothing/A small amount	25	35.2%	23	30.2%
A medium amount	33	46.5%	30	39.5%
A lot	13	18.3%	23	30.3%
Video 2 - After watching this video, I feel I learned…				
$\chi 2(2) = 2.30$, $p > .05$; Cramer's V = 0.129, $p > .05$				
Nothing/A small amount	29	42.0%	21	30.0%
A medium amount	33	47.8%	39	55.7%
A lot	7	10.1%	10	14.3%
Video 3 - After watching this video, I feel I learned…				
$\chi 2(2) = 1.42$, $p > .05$; Cramer's V = 0.101, $p > .05$				
Nothing/A small amount	37	53.6%	44	62.8%

A medium amount	25	36.2%	19	27.1%
A lot	7	10.2%	7	10.1%

In general, I found that the information and strategies presented in the resource library were useful to me.

$\chi 2(2) = 1.87$, $p > .05$; Cramer's V = 0.120, $p > .05$

Strongly disagree to Somewhat agree	30	48.3%	28	41.8%
Agree	28	45.2%	30	44.8%
Strongly agree	4	6.5%	9	13.4%

How much of the different material in the resource library did you actually use?

$\chi 2(1) = 3.13$, $p > .05$; Cramer's V = 0.153, $p > .05$

None of it/Very little	28	44.4%	20	29.8%
Some/Most/All	35	55.6%	47	70.2%

Table 3

Results of 3(Group: MHSP, Peer, Comparison) X 3(Time: Baseline, Post, Follow-up) Two-way Mixed ANOVA on Well-being Outcomes

Stress	
Mauchly's test of sphericity - Time	χ^2 (2) = 17.79, p < .001
Interaction – *Greenhouse-Geisser*	F(3.70,396.26) = 1.55, p = .192, η_p^2 = .014, 1-β = .46
Main effect of Group (between)	F(2,214) = 1.03, p = .358, η_p^2 = .010, 1-β = .23
Main effect of Time (within) – *Greenhouse-Geisser*	F(1.85,396.26) = 3.70, p>*.05*, η_p^2 = .013, 1-β = .68
Coping self-efficacy	
Mauchly's test of sphericity - Time	χ^2 (2) = 1.47, p =.480
Interaction – *Greenhouse-Geisser*	F(3.97,423.08) = .61, p = .659, η_p^2 = .006, 1-β = .20
Main effect of Group (between)	F(2,213) = .40, p = .67, η_p^2 = .004, 1-β = .11
Main effect of Time (within) — *Greenhouse-Geisser*	F(1.99,423.08) = 24.52, p>*.001*, η_p^2 = .103, 1-β = 1
Social support	
Mauchly's test of sphericity - Time	χ^2 (2) = 18.29, p < .001
Interaction – *Greenhouse-Geisser*	F(3.69,396.52) = 1.94, p = .109, η_p^2 = .018, 1-β = .56
Main effect of Group (between)	F(2,211) = .70, p = .499, η_p^2 = .007, 1-β = .17
Main effect of Time (within) – *Greenhouse-Geisser*	F(1.85,396.56) = 7.04, p>*.001*, η_p^2 = .032, 1-β = .93
Social connectedness	
Mauchly's test of sphericity - Time	χ^2 (2) = 11.26, p < .05
Interaction – *Greenhouse-Geisser*	F(3.80,399.07) = 1.43, p = .224, η_p^2 = .013, 1-β = .43
Main effect of Group (between)	F(2,210) = 2.11, p = .123, η_p^2 = .020, 1-β = .43
Main effect of Time (within) – *Greenhouse-Geisser*	F(1.90,399.07) = 1.74, p=.179, η_p^2 = .008, 1-β = .36
Mindfulness	
Mauchly's test of sphericity - Time	χ^2 (2) = 7.95, p < .05
Interaction – *Greenhouse-Geisser*	F(3.86,408.89) = 0.88, p = .476, η_p^2 = .008, 1-β = .28
Main effect of Group (between)	F(2,212) = 0.14, p = .987, η_p^2 <.001, 1-β = .05
Main effect of Time (within) – *Greenhouse-Geisser*	F(1.93,408.89) = 9.66, p<.001, η_p^2 = .044, 1-β = .98
QoL (physical health)	
Mauchly's test of sphericity - Time	χ^2 (2) = 1.48, p =.476
Interaction – *Greenhouse-Geisser*	F(3.97,417.05) = 0.67, p = .615, η_p^2 = .006, 1-β = .21
Main effect of Group (between)	F(2,210) = 0.35, p = .965, η_p^2 <.001, 1-β = .06
Main effect of Time (within) –*Greenhouse-Geisser*	F(1.99,417.05) = 0.63, p=.533, η_p^2 = .003, 1-β = .16

QoL (psychological health)	
Mauchly's test of sphericity - Time	χ^2 (2) = 0.75, p =.686
Interaction – *Greenhouse-Geisser*	F(3.99,420.49) = 0.23, p = .925, η_p^2 = .002, 1-β = .10
Main effect of Group (between)	F(2,211) = 0.63, p = .534, $\eta_p^{2=}$.006, 1-β = .15
Main effect of Time (within) – *Greenhouse-Geisser*	F(1.99,420.49) = 0.65, p =.525, η_p^2 = .003, 1-β = .16
QoL (social relationships)	
Mauchly's test of sphericity - Time	χ^2 (2) = 11.49, p<.05
Interaction – *Greenhouse-Geisser*	F(3.80,398.68) = 0.29, p = .874, η_p^2 = .003, 1-β = .11
Main effect of Group (between)	F(2,210) = 0.86, p = .424, $\eta_p^{2=}$.008, 1-β = .20
Main effect of Time (within) – *Greenhouse-Geisser*	F(1.90,398.68) = 4.57, p =.012, η_p^2 = .021, 1-β = .76
QoL (environment)	
Mauchly's test of sphericity - Time	χ^2 (2) = 6.58, p <.05
Interaction – *Greenhouse-Geisser*	F(3.88,405.37) = 0.27, p = .895, η_p^2 = .003, 1-β = .11
Main effect of Group (between)	F(2,209) = 0.12, p = .885, $\eta_p^{2=}$.001, 1-β = .07
Main effect of Time (within) – *Greenhouse-Geisser*	F(1.94,405.73) = 7.89, p <.001, η_p^2 = .036, 1-β = .95

Figure 1

Stress and Coping Online Outreach Program Project Timeline

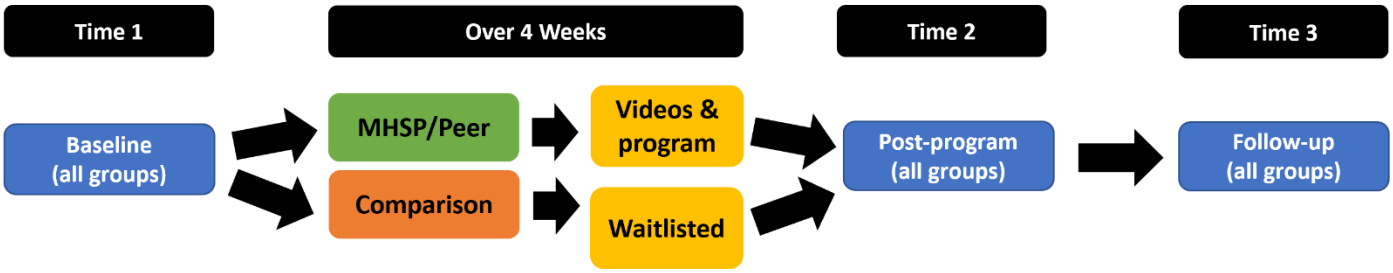
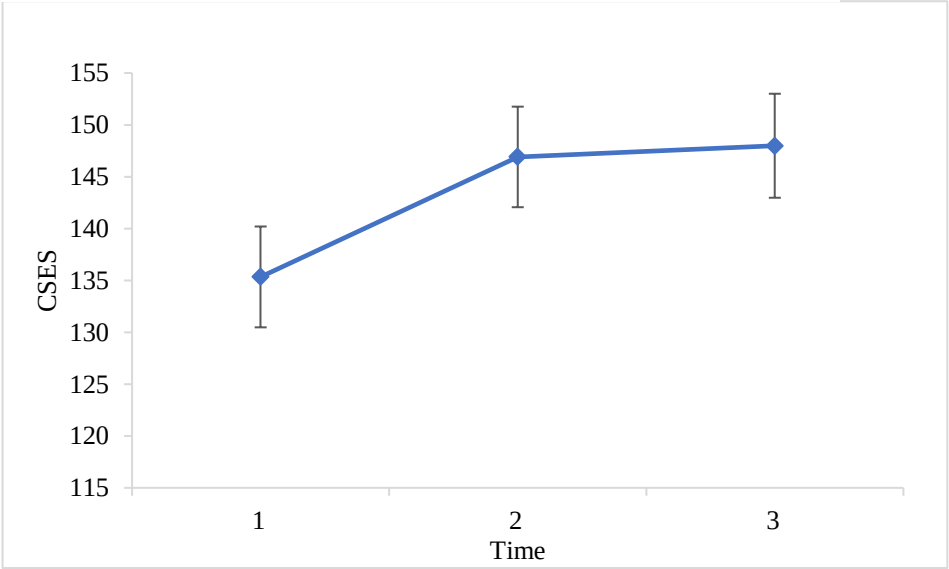


Figure 2

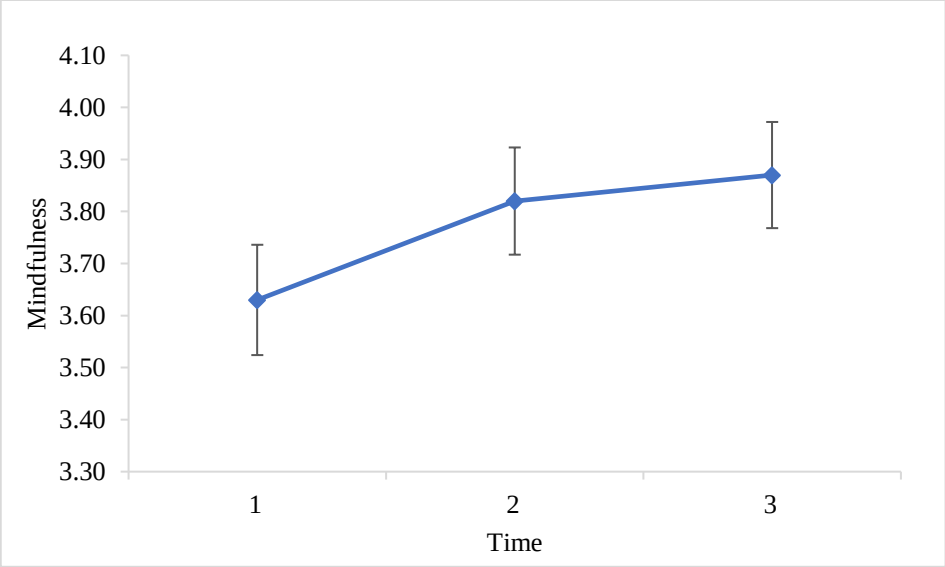
University Students Reported CSES Over Time



Note. Main effect of time represents a significant difference between T1 and T2 as well as T1 and T3.

Figure 3

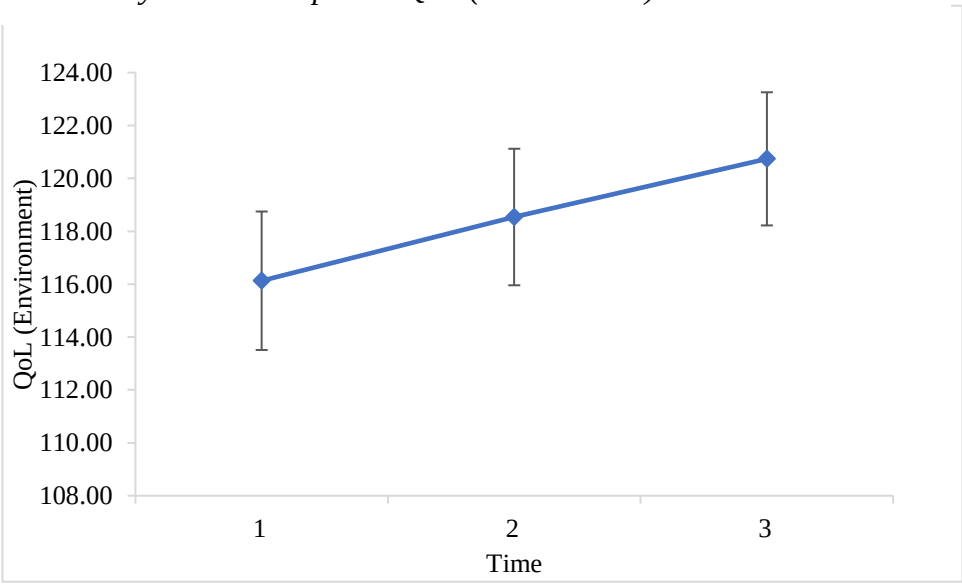
University Students Reported Mindfulness Over Time



Note. Main effect of time represents a significant difference between T1 and T2 as well as T1 and T3.

Figure 4

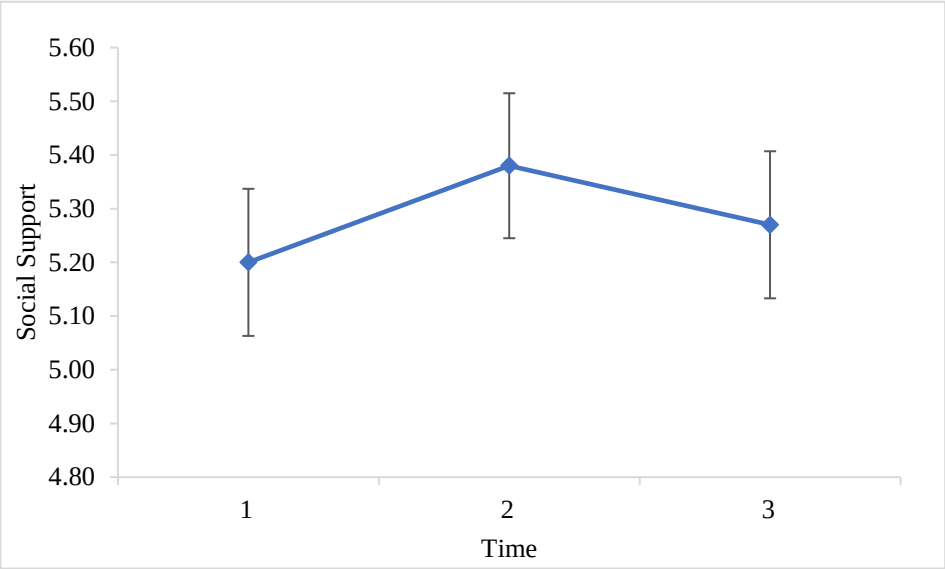
University Students Reported QoL (Environment) Over Time



Note. Main effect of time represents a significant difference between T1 and T3.

Figure 5

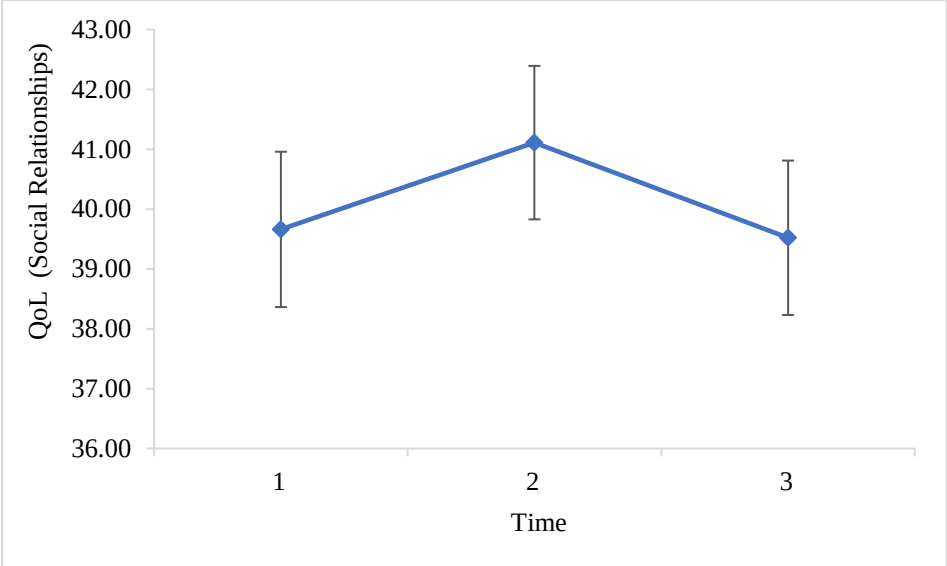
University Students Reported Social Support Over Time



Note. Main effect of time represents a significant difference between T1 and T2 as well as T2 and T3.

Figure 6

University Students Reported QoL (Social Relationships) Over Time



Note. Main effect of time represents a significant difference between T1 and T2 as well as T2 and T3.

Connecting text

Although study 1 found no group differences in terms of the effectiveness, results provide promising evidence for the acceptability and satisfaction of an online mental health resilience building outreach program. Specifically, 80.6% of students in the MHSP-led group and 90.8% in the peer-led group said that they were planning to use the SCOOP strategies *sometimes* to *frequently*. In addition, 95.9% of students in the MHSP-led group and 98.7% in the peer-led group said that they *somewhat agree* to *strongly agree* that they would recommend the SCOOP to other university students. Since, low adherence to strategy use and student engagement have been reported as significant issues across similar interventions (e.g., Clarke et al., 2015; Lattie et al., 2019), specific factors contributing to the program's high acceptability and factors that may pose as a challenge for such acceptability warrant further examination. Additionally, few studies have examined the involvement of student service users as full partners, such as using a PAR model, in the development and dissemination of an online mental health outreach program to enhance engagement and acceptability.

Thus, the following manuscript will build on the existing research and qualitatively examine university student's impressions of an online mental health outreach program longitudinally from the onset of the pandemic to the early adjustment (4 months following the pandemic onset). Study 2 seeks to deepen our understanding of university students positive and negative impressions of the online mental health resilience building program, to in turn provide best practice recommendation for future program development.

Chapter 4: Study 2

University Students' Impressions of an Online Mental Health Resilience Building Program: A Qualitative Study

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Abstract

Given stressors associated to the developmental period of emerging adulthood, the university context, and the novel coronavirus disease 2019 (COVID-19) pandemic, university students are reporting elevated levels of stress. New approaches to service delivery such as online mental health programs have emerged to provide students with effective support and build mental health resilience capacity on university campuses. However, only a small proportion of students access these services and studies report a lack of evaluation of acceptability of such online programs. Thus, the overarching purpose of the present study was to examine university student's impressions of an online mental health resilience building outreach program longitudinally from the onset of the pandemic to the early adjustment (4 months following the pandemic onset). Results from a qualitative content analysis revealed that impressions were overall primarily positive with seven main categories (5 positive and 2 negative) associated with students' impressions of the program. For positive impressions of the online program identified categories included: (1) Variety and Diversity of Resources/Strategies; (2) Brevity, Simplicity, and Accessibility; (3) Value and Appeal; (4) Relatability; and (5) Encouragement of Reflection and Awareness Around Own Mental Health and Well-being. For negative impressions of the online program two main categories were identified: (6) Need for Additional Support on Getting Started and Accountability; and (7) Need for Additional Demonstration/Explanation of Strategies in Videos. Implications for the study include best practice guidelines for future online mental health program provision and development. Limitations as well as considerations for future research will be discussed.

Best Practice Recommendations from an Online Mental Health Resilience Building Outreach Program

University students are reporting unprecedented levels of mental health difficulties and mental health services are struggling to meet demands (American College Health Association, 2019; Watkins et al., 2012). In addition, the coronavirus disease 2019 (COVID-19) pandemic has introduced new unexpected stressors (Li et al., 2021; Son et al., 2020), highlighting the need to support students during this challenging period. Thus, there has been an increase in online mental health programs as preventative measures to support students, which have been shown to be effective in reducing students' stress (e.g., Amanvermez et al., 2020; Montagni et al., 2020). However, reports show that only a small number of students are accessing these online programs (Dunbar et al., 2018; Levin et al., 2018; Musiat et al., 2014). Moreover, there is limited research on university students' acceptability and satisfaction with these types of programs (e.g., Lattie et al., 2019). Considering how pivotal students' perspectives on these types of initiatives are to ensure uptake, the current study sought to examine university students' impressions of an online mental health outreach program longitudinally from the onset of the pandemic to the early adjustment (4 months following the pandemic onset).

Mental Health Distress among University Students

The developmental period of emerging adulthood, which most university students fall into, is a period between adolescence and adulthood (ages 18-29 years old) where individuals are presented with numerous novel opportunities in relation to love, work, and to explore their identity. Nonetheless, such opportunities can often bring on additional stress given emerging adults are usually fully independent and responsible for these decisions for the first time (Arnett, 2000, 2004; Arnett et al., 2014). Unsurprisingly reports of mental health distress are common

during this developmental period (Peer et al., 2015). Furthermore, university students, who are predominantly in this developmental stage, face specific academic pressures and stressors which place them at increased risk for developing mental health difficulties (Beiter et al., 2015; O'Reilly et al., 2014). Findings from the National College Health Assessment reveal that university students reported stress (41.9%) followed by anxiety (34.6%) and depression (24%) as major factors perceived to be impacting their academic performance (American College Health Association, 2019). As such, emerging adulthood has been associated with an increase in maladaptive coping behaviours such as substance and alcohol use as well as risky sexual behaviours (Lyons et al., 2015; Sussman & Arnett, 2014).

Mental Health Distress Related to COVID-19

In addition to the heightened mental health difficulties reported by university students, the COVID-19 has brought on additional stressors for this population (e.g., Conrad et al., 2021; Son et al., 2020). Although lockdown restrictions measures varied based on the city, many included: closure of all non-essential businesses, travel restrictions, social distancing restrictions, and curfews (Bedford et al., 2020; World Health Organization, 2020). In light of rising concerns about the current COVID-19 pandemic, in Winter 2020, many universities world-wide moved to online teaching and postponed or canceled all campus activities such as workshops, conferences, sports/extracurricular activities.

Even though repercussions of the pandemic led to psychological distress for many individuals (Boyraz & Legros, 2020; Li et al., 2021; Lupe et al., 2020; Xiong et al., 2020), university students were uniquely affected by these events, with students reporting experiencing pandemic-related anxiety around their studies and future employment opportunities (Cao et al., 2020). Furthermore, results from qualitative studies have shown that students were experiencing

stress related to changes brought on by the pandemic such as relocating to home, online learning, difficulties concentrating, and health concerns for themselves as well as loved ones (Conrad et al., 2021; Fawaz et al., 2021; Son et al., 2020). Given the elevated reports of pandemic-related stress in addition to pre-existing distress experienced by students before the pandemic (Auerbach et al., 2016; Mechili et al., 2020; Meda et al., 2021), there is evident need for prevention programs for university students targeting skills-building for adaptive strategies to foster mental health resilience.

Online Approaches to Mental Health Support

Considering the overwhelming demand for mental health support and limited resources on university campuses (Watkins et al., 2012), new approaches to service delivery such as online mental health programs have emerged to address such challenges. Through the rapid development of these online technologies, there is an increase in the accessibility of evidence-based mental health resources (Christensen & Hickie, 2010; Clarke et al., 2015). Online interventions offer a promising solution to increase access to preventative programs to build mental health resilience capacity, allowing for anonymity, and greater flexibility to accommodate university students' time constraints (Clarke et al., 2015; Conley et al., 2016; Kauer et al., 2014). Especially since the implementation of social distancing measures due to the COVID-19 pandemic, there is a need to use online means to provide university students with access to mental health support (Benjet, 2020). The COVID-19 pandemic has acted as an unfortunate but nevertheless accelerator for the development and dissemination of online mental health resources.

Evidence has demonstrated the effectiveness of online mental health prevention interventions for university students (Clarke et al., 2015; Conley et al., 2016; Harrer et al., 2018).

Specifically, intervention programs with a focus on skills-training (i.e., designed to develop skills) were found to have a stronger pattern of effectiveness compared to non-skills-training interventions (i.e., psychoeducation only). Moreover, most of the interventions were used independently which suggests that these types of interventions may be easily implemented in university settings (Conley et al., 2016). Thus, such online mental health support programs have the ability to reach a large number of students in a cost-effective way to help manage stress and enhance coping during the challenging developmental period of emerging adulthood.

Despite the promise of online mental health resources for providing flexible, anonymous, and effective support, there is still only a small number of students who access these services (Dunbar et al., 2018; Kern et al., 2018; Musiat et al., 2014). Students report an interest and openness to using online mental health resources, but few students report actual using such resources (Clarke et al., 2015; Kern et al., 2018). These findings highlight the difficulties of engaging university students in mental health prevention programs. Although students report perceiving online mental health support as advantageous, they identify barriers to using such support such as distrust in quality of information and a difficulty in navigating wealth of information presented online (Montagni et al., 2020). As a result, it has been suggested that using participatory designs such as Participatory Action Research (PAR), which are models where student service users are involved in the development of these types of programs, can be beneficial to increase acceptability (i.e., how well the intervention is received) and engagement (Hutchinson & Lovell, 2013).

Furthermore, studies report a lack of evaluation of acceptability of these types of online programs for university students (Huang et al., 2018; Lattie, Adkins, et al., 2019). Thus, even though there is evidence for the effectiveness and efficiency of online programs, further research

is needed to evaluate specific factors contributing to students' acceptability and satisfaction with these types of interventions (Montagni et al., 2020; Musiat et al., 2014). Previous research focusing on the acceptability and satisfaction with online mental health programs has highlighted the importance of understanding the perspectives and needs of individuals using these online mental health programs to encourage use (e.g., Yardley et al., 2015).

In summary, although certain studies have examined the acceptability of online mental health program, most have not examined the specific factors contributing to this acceptability and there is limited evidence for the use of a PAR model to incorporate research and lived experience into their program development (Huang et al., 2018; Lattie, Adkins, et al., 2019; Orlowski et al., 2015). Considering findings demonstrating the effectiveness of online programs, their benefits in terms of cost-effectiveness and building mental health resilience capacity, there is a need to further examine factors contributing to the acceptability of online mental health resilience building programs. Given the unprecedented times it is crucial to examine the views reported by emerging adults within the COVID-19 context.

The Present Study

The overarching purpose of the present study was to explore university students' impressions of an online mental health outreach program developed using PAR methodology. Specifically, the study sought to use a qualitative content analysis to explore students' positive and negative impressions of the program elements (e.g., videos and resource library) at three distinct timepoints over the duration of the program (February-June 2020).

Method

Participants

The University's Research Ethics Review Board approved the study prior to any data collection. Participants in the present study were 126 university students (M_{age} = 20.46 years, *SD* = 1.96) attending a large urban institution in Canada. Of these participants, 101 self-identified as women (80.2%), 22 men (17.5%), 3 non-binary (2.3%). Additionally, participants were enrolled in different academic faculties, including Arts and Science (41%), Science (20.5%), Agricultural and Environmental Studies (8.2%), Engineering (8.2%), Education (7.4%), Management (5.7%), and others (9%). 76% of participants identified as Caucasian or White, 16% as Asian, 4% as Arabic, and 4 % as other.

Program Development and Description

A PAR model was employed to develop the Stress and Coping Online Outreach Program (SCOOP), an online mental health outreach program for university students. Consistent with the PAR model, the SCOOP was developed by a collaborative team of multidisciplinary stakeholders including researchers (4), student service users (about 8-10 core team members who were consistently involved throughout the study and about 15 team members whose participation in the project was fluid), mental health service providers (3), and decision makers (2). The PAR model is defined as a collaborative approach in which members of communities affected by such research are active in making informed decisions throughout all aspects of the research process (Macaulay et al., 1999). The PAR model highlights the importance of advocating for power and decision making to be distributed equally between stakeholders (Baum et al., 2006). Thus, for the present study it was pivotal that student service users (i.e., students with lived experience of mental health difficulties) were granted the same decision-making power and input on the

program development and dissemination as researchers, mental health services providers, and decision makers.

To develop the SCOOP, the research team conducted a scoping review of the literature and had regular meetings with all stakeholders to decide on content, format, and strategies for the program. The program consisted of two video series led either by mental health service providers or undergraduate students (i.e., student peers), presenting identical content, and an online resource library with strategies for building mental health resilience. The videos and resource library presented strategies focusing on four key areas of mental health resilience: (1) dealing with stress, (2) decreasing self-criticism, (3) improving self-care and help-seeking, and (4) enhancing social connections and social support. Core areas were informed and identified by the multi-stakeholder team's expertise and lived experience, a review of the literature and environmental scan of existing programs. Strategies in the resource library were presented through a variety of formats such as videos, infographics, guided audio recordings, and podcasts. The brief video series consisted of three videos of approximately 8-10 minutes in length. The first video introduces the online program, discusses the four core areas of resilience-building, and presents a few sample strategies, and finally describes how to access the skills-based strategies on the websites' interactive resource library. The second video discusses how to address common challenges when practicing these strategies and the last video discusses tips for committing to the practice in the long term. All program materials were reviewed and approved by the multidisciplinary team prior to dissemination.

Measures

Survey questions at T1 and T2 were part of the response to training measure, a researcher developed measure assessing participants' satisfaction with the program content and delivery

based on Kirkpatrick's New World Model (Kirkpatrick & Kirkpatrick, 2016). As part of this study specifically, two open-ended questions were used to examine students' impressions of the online mental health outreach program disseminated during COVID-19. Specific questions asked on the surveys at T1 and T2 included: (1) *Overall, what (if anything) did you enjoy about the SCOOP?* (2) *Overall, what (if anything) did you dislike about the SCOOP?* Similar questions were asked during semi-structured interviews at T3 for researchers to gain a richer and more in depth understanding of students' impressions of the program as well as to identify whether there were any changes in students' impressions of the program over time. Specific questions asked in the T3 interviews included: (1) *What are your impressions of the SCOOP program?* This question was developed to better understand students' response to the program after initial use (e.g., was it easy to use, were they motivated to try the strategies). Based on participants' response the interviewer would potentially follow up with a prompt asking (1a) *Overall, what (if anything) did you enjoy about the SCOOP?* and/or (1b) *Overall, what (if anything) did you dislike about the SCOOP*?

Data Collection and Procedure

Participants were recruited as part of a larger study evaluating the acceptability and effectiveness of a mental health service provider-led versus peer-led online mental health outreach program for university students against a comparison group (Bastien et al., 2021). Participants were recruited using a flyer advertising an online program teaching students active skills and strategies to cope with stress involving three short videos and an online resource library. The flyer was distributed to students at the university campus and through social media postings, email list-servs, as well as through a list of participants who agreed to be contacted for information on future studies. Students who emailed the research team to indicate their interest in

participating were sent additional information about the study, a copy of the consent form, and the study start date. To attain a target sample as part of the larger study, recruitment was ongoing throughout February 2020, which led to a staggered approach. Thus, participants received the online mental health outreach program between February to March 2020. Participants were randomly assigned to either receive the mental health service provider (MHSP)-led videos or the peer-led videos, which had identical content but were led by different presenters, or a comparison group. Presenters used scripts to ensure consistency across videos series. All three videos were sent within a two-week interval of each other, and students were provided with access to the online resource library with strategies and resources for building mental health resilience through an online website. Students were also encouraged to use the program through email reminders. See Figure 1 for program timeline. Only students in the intervention groups (i.e., peer-led and MHSP-led groups) responded to the training satisfaction questions and were recruited for the interviews. Thus, given the present study focuses on the impressions to the program only participants in the intervention group were included.

Following completion of the study, students from all three groups received an e-mail with a personalized profile indicating their individual scores on various measures, a list of stress management resources, and free access to a resource library with strategies for mental health resilience building designed by the research team. Additionally, participants were compensated $10 for each survey completed, for a total of $30, and were entered in a raffle for a one in four chance to win $50.

Data analysis and Coding Procedure

A content analysis was used to examine the data following guidelines outlined by Elo and Kyngas (2008). Specifically, a conventional approach, also known as inductive category

development content analysis, was used whereby instead of using pre-conceived categories, the researchers allow the categories to emerge from the data to allow for the flexibility of novel or unexpected categories to arise (Hsieh & Shannon, 2005; Kondracki et al., 2002).

The qualitative data from the surveys (T1 and T2) were analyzed using the following procedure. As per Graneheim and Lundman (2004), to increase validity, two research assistants (LB & SZ) read through the data in its entirety, then proceeded to coding the data for units of meaning also known as open coding (aiming to develop substantial codes describing and classifying the phenomenon represented in the data). Research assistants coded T1 first, met to compare results and ensure they were following a similar coding pattern, then proceeded to coding T2 data. The two research assistants then met on multiple occasions (three meetings) to merge codes and develop more comprehensive categories. Any inconsistencies or disagreements were discussed with a third research assistant until common agreement was reached. Codes that were not directly relevant to the current program and future program recommendations, such as responses related to the length of research questionnaires, were excluded.

Similarly, the qualitative data from the interview transcripts (T3) were analyzed using the following procedure. A total of 49 qualitative interviews were transcribed using NVivo software and then verified for accuracy by six additional research assistants. Systematic checks were then completed by LB & SZ (each fifth transcription was verified for accuracy). Since there was less than an 80% error rate, files were deemed accurate and research assistants then proceeded with the content analysis. The same two research assistants (LB & SZ) coded three transcripts (open coding), met to compare results and ensure they were following similar coding pattern, then proceeded to coding the rest of the data. Codes were then merged to develop more comprehensive categories. Again, any inconsistencies or disagreements were again discussed

with a third research assistant until common agreement was reached. Codes that were not directly relevant to the current program and future program recommendations, such as responses related to the length of research questionnaires, were excluded. As per inductive qualitative data guidelines, a final list of no more than eight categories representing major themes was generated (Thomas, 2006).

Results

A total of 156 individuals consented to participate in the present study (78.1% female; M_{age} = 20.53, *SD* = 2.50). Of this total sample, all participants who did not complete the training satisfaction surveys were excluded (*n* = 28). Additionally, all participants who identified as being 30 + years old were excluded from the sample (*n* = 2, M_{age} = 33.00, *SD* = 3.00) since they would be considered outside the developmental period of emerging adulthood (18-29 years old). The final sample consisted of 126 participants (M_{age} = 20.46 years, *SD* = 1.96). Of this sample, 107 students provided responses at pandemic onset (T1; end of March to beginning of April 2020), 86 provided responses at early pandemic (T2; end of April to beginning of May 2020) and 49 took part in the qualitative interviews at late pandemic (T3; June 2020; see Table 1).

Content Analysis Categories

Results found that categories emerging from the data were consistent across all three time points, except for one category only present at T1 and T2 which will be discussed below. Six main categories for student's impressions of the SCOOP program emerged from the content analysis of the qualitative surveys and interviews at all three time points and one additional category emerged at T1 and T2 only (see Table 2). Specifically, five main categories were identified for positive impressions of the SCOOP and two main categories were identified for negative impressions of the SCOOP. The categories are as follows:

Positive Impressions of the SCOOP

Category 1: Variety and Diversity of Resources/Strategies

Students highlighted how they appreciated the variety of strategies and resources offered, specifically that the breadth of resources offered allowed the program to touch on a variety of aspects of university student life such as finances, relationships, general stress, etc. Thus, university students highlighted that they appreciated how the program reflected the complexity of the university student experience and associated stressors by providing support in diverse areas. Students reported that the SCOOP encouraged them to try a variety of strategies to see what works best for them instead of the usual a one size fits all approach used in certain mental health programs.

Category 2: Brevity, Simplicity, and Accessibility

Students described the program as clear and simple to use. Some students commented on enjoying the layout of the resource library as being organized by area of resilience which made it easier for students to find which strategies/resources they were looking for. Students also commented on the accessibility of the program, specifically highlighting that they appreciated that the program was free, offered through the university, and was brief (e.g., short videos and strategies were not time consuming) which made it more accessible for university students with busy schedules. Additionally, the program was online, so students appreciated the flexibility, specifically that it could be accessed anywhere at anytime.

Category 3: Value and Appeal

Students highlighted the value of the SCOOP program, specifically commenting on how it was informative, useful, interesting, and helpful. Similarly, students commented on the

programs appeal highlighting that it was an interesting program, and appreciated how it was engaging, interactive, and visually appealing. Furthermore, students highlighted that having such a visually appealing, interesting, and informative program encouraged them to stay engaged with the material.

Category 4: Relatability

Students indicated that they enjoyed how the program was tailored for university students, highlighting that specific university stressors were addressed which may not necessarily apply to the more general population (e.g., social network in university, time management specific to academic work). Additionally, it was highlighted that areas discussed were relatable since it is aligned with the current context with resources discussing topics related to COVID-19 stress. Specific to the videos, students identified that they enjoyed the diversity of presenters in terms of racial and gender diversity, as well as students thought having the videos made the program more personal and added an element of human connection. Finally, students in the peer-led groups enjoyed how relatable the video presenters were given university students were featured discussing their own mental health difficulties and how they integrated the strategies in their day-to-day lives.

Category 5: Encourages Reflection and Awareness Around Own Mental Health and Well-being (T1 and T2 only)

Finally at Time 1 and 2, students discussed how they enjoyed that the program helped them reflect and build awareness on their own mental health and well-being. At time 2, they indicated that this is something they may not have necessarily taken the time to do, especially in the current pandemic context. However, the program provided them with the opportunity to reflect and check in on how they were feeling and processing their emotions during this time.

Negative Impressions of the SCOOP

Category 6: Need for Additional Support on Getting Started and Accountability

Students highlighted a need for additional support on getting started with the program/strategies, specifically identifying issues such as the overwhelming number of strategies offered, making it difficult to know which ones to use first or where to get started. Students also identified needing additional support on specific ways to integrate these strategies in their day-to-day routine. While many students identified enjoying the flexibility of the program (e.g., large variety of options, no set time commitment), other students commented that the program was too independent and that they require additional support in the above identified areas (e.g., where, when, and how to start). Finally, some students highlighted the need for more reminders to use the strategies and a need for more accountability.

Category 7: Need for Additional Demonstration/Explanation of Strategies in Videos

Students indicated that they would have liked additional explanations/demonstrations of the strategies in the videos. Although, they enjoyed how short and concise the videos were, they suggested having several additional shorter videos explaining the strategies and demonstrating them. Currently, the program directs students to the online resource library for more information on the strategies or how to use them, but some students would have preferred having this information directly in the videos.

Discussion

The current study sought to explore university students' impressions of an online mental health outreach program developed using a PAR model which coincided with the COVID-19 pandemic (February 2020-June 2020). Specifically, students' positive and negative impressions

of the SCOOP elements (e.g., videos and resource library) were examined at three distinct timepoints. The majority of students responses to the program were positive, whereas the qualitative content analysis revealed five main categories for positive impressions of the SCOOP which include: (1) *Variety and Diversity of Resources/Strategies*; (2) *Brevity, Simplicity, and Accessibility*; (3) *Value and Appeal*; (4) *Relatability*; and (5) *Encourages Reflection and Awareness Around Own Mental Health and Well-being* (T1 and T2 only) and only two main categories for negative impressions of the SCOOP which include: (6) *Need for Additional Support on Getting Started and Accountability*; and (7) *Need for Additional Demonstration/ Explanation of Strategies in Videos.* Surprisingly, students' impressions of the program did not change across the different time points as emerging themes were consistent across all three time points even when students were further prompted on their response to the program during the qualitative interviews at time three. The only exception was *Encourages Reflection and Awareness Around Own Mental Health and Well-being* which was not present at T3. However, this suggests that regardless of at which point in their adjustment to the pandemic students were (e.g., pandemic onset, early adjustment), they responded similarly to an online mental health resilience building program. This is especially encouraging given the numerous changes related to COVID-19 such as changes in experienced stressors and increase in online resources offered (Bedford et al., 2020; Benjet, 2020; Conrad et al., 2021). Thus, program development recommendations outlined below may be applicable for online programs developed for university students even during periods of unexpected changes and a potentially stressful context.

Positive Impressions of the SCOOP

Most responses related to students' impressions of the online mental health resilience building program were positive. Interestingly, the first category *Variety and Diversity of Resources/Strategies* was integrated within the program as a result of the PAR model and multidisciplinary collaboration. Through students' reports and mental health service providers' reports of client needs, the multidisciplinary team identified a significant diversity in the number of areas that may be potential stressors for university students and the need to provide support within these areas. For example, one student commented in response to what they enjoyed most about the program was that "some topics (e.g., dealing with breakups), I didn't expect but presented information that normally isn't mentioned in stress (programs)". This resource was created as a result of larger discussions with students who identified this area as a key stressor for university students, despite not frequently being addressed in resilience building programs. This highlights the value of the inclusion of student service users as full partners within the program development phase of the project. Findings are consistent with previous literature, where results from qualitative interviews with university students demonstrated that students asked that future programs include a diversity of topics (i.e., stress reduction, social support) to better support university students (Irish et al., 2020).

The second and third category, *Brevity, Simplicity, and Accessibility,* as well as, *Value and Appeal,* are consistent with previous research, where students have reported the need for online programs to be short and concise in order to keep them engaged (Bakker et al., 2016; Harrer et al., 2018; Irish et al., 2020). Interestingly, the degree of brevity of the program that was highly appreciated by students went directly against the inclination of the MHSPs and researchers on the project team. MHSPs and researchers agreed that the program should be kept

brief but had a different perception of what students meant by brief (e.g., about 20 minutes), while student service users insisted that such a length would not be attractive for university students. Ensuring videos, strategy practice and psychoeducation content were kept to about 10 minutes was a direct consequence of the student service users' participation and insistence on student preference during collaborative meetings in the development phase of the program. This particularly illustrates the tremendous benefits of employing a PAR model with student service users actively involved. Additionally, ensuring that the online program is user-friendly and accessible to encourage use is aligned with best practice literature for the development of online mental health resources via smartphone apps (Bakker et al., 2016). Furthermore, it is crucial for students to see the value in the program or strategies (perceived use) to want to adopt a change in their behavior using this technology (Fitzgerald & McClelland, 2017). Again, the project team found inconsistencies between what student service users found appealing and what researchers and MHSPs thought students would find appealing. Thus, the inclusion of SSUs in the design was critical to support students' acceptability with the program. Taken together, the appeal of the program identified as visually appealing and engaging as well as ensuring that the program is simple, brief, easy to use, free, and accessible for students is consistent with previous literature on best practice guidelines for the use of smartphone mental health apps (Bakker et al., 2016; Fitzgerald & McClelland, 2017). However, these findings provide novel input on specific elements which should be included in the development of an online mental health resilience building program for university students.

The fourth category identified was the *Relatability* of the program. Since the program was developed using the PAR model, it is hypothesized that the contribution of students as full partners may have supported in the relatability of the program. As highlighted above, many of

the stressors identified emerged through discussions with all stakeholders and sharing of experiences. Thus, this highlights the importance of using these types of models in program development, specifically seeing its benefits in tailoring the program to university students more adequately. Interestingly, students in the peer-led group also identified the relatability to the presenters as a positive component of the program. Findings indicate how having student service users as active partners in the program development may heighten relatability of the program.

The fifth category which only emerged at T1 and T2, *Encourages Reflection and Awareness Around Own Mental Health and Well-being*, is an interesting finding for future program development. It emphasizes the appeal of providing opportunities throughout the program for students to check in on their well-being whether through short questionnaires or reflective activities. Results are similar to studies examining the acceptability of mental health smartphone apps where it was found that the self-monitoring and reflection of emotions was an important component of behaviour change (Bakker et al., 2016). Current findings highlight the benefit to further integrate such reflective activities, especially for self-directed programs. Interestingly this category did not emerge at T3. It is hypothesized that students may have been more prone to engage in self-reflection at the pandemic onset and early pandemic given the massive changes and fear experienced in the early stages of the pandemic. This is consistent with findings from qualitative interviews with nurses at the onset of the pandemic demonstrating that they partook in self-reflection of their own values during this time (Sun et al., 2020). Using the SCOOP may have supported such reflection, but as students were adjusting to the pandemic this may have been less common. However, future research would be needed to examine why such changes may have occurred.

Negative Impressions of the SCOOP

The sixth category, *Need for Additional Support on Getting Started and Accountability,* was identified as a negative impression of the SCOOP. This finding is surprising considering that the collaborative team had made a conscious decision to leave the guidelines on the integration of strategies more general to allow for flexibility on integration given previous literature demonstrating that students and emerging adults are attracted to online mental health resources for their flexibility in use (Fleischmann et al., 2018; Wallin et al., 2016). The idea was that not all students can dedicate the same amount of time for this practice or will enjoy the same strategies, so the research team wanted to provide flexibility for students to integrate strategies based on their own schedules and available time commitment. Thus, guidelines on how/when to use the program was kept general, so that students could navigate the website and see which strategy they enjoyed and how they could be integrated into their own schedule. However, in light of the identified theme, future programs may want to have an option providing example of routines (e.g., when, and how strategies can be incorporated) as well as sample schedules. This will provide the subset of students who desire more structure to be provided with more direction on how to implement strategies, while emphasizing that these may not work for everyone and to adapt the suggested plan as needed. Furthermore, the need for additional reminders and accountability is consistent with previous literature where participants report a need for feedback on their progress to develop accountability (Bakker et al., 2016; Frazier et al., 2016). Future programs would benefit from integrating frequent check-ins or reminders throughout in a way not to overwhelm students as a way of creating accountability. This may contribute to the issue with adherence to strategy use reported in many studies (Christensen et al., 2009; Clarke et al., 2015), where reminders could be beneficial to encourage individuals to use the strategies.

Additionally, having a tracker on the website showing their progress (e.g., how many times they accessed a certain strategy or used the practice) with direct feedback on how they are doing may be beneficial to create accountability and be provided with additional support/feedback.

The seventh category, *Need for Additional Demonstration/Explanation of Strategies,* in videos, is also interesting because the research team had made a conscious decision to keep the videos short and concise as per best practice guidelines (Bakker et al., 2016). Although, students did appreciate how brief the videos were, given the identified theme, future programs may want to provide students with additional short one-to-two-minute clips demonstrating the different strategies. This may be integrated as part of the resource library so students can access these clips only if they want to use the strategies so as not to overwhelm students in the main videos and still keep these short. This is consistent with previous literature demonstrating that university students reported additional support and explanations related to an online mental health intervention (Bakker et al., 2016; Irish et al., 2020). Specifically, Irish et al. (2020) suggest providing supplementary information accessible for those interested in learning more about the presented topics or who require further explanation.

Finally, we would recommend, if possible, the inclusion of students in the development of mental health resilience building outreach programs (to enhance relatability, engagement, accessibility) and the evaluation of students' response to the program to continue to inform future initiatives. The MHSPs, researchers, and decision makers contributed to the program conceptualization, development (informing which strategies should be included and with what approach based on the literature), both of which are generally included in more standard mental health or stress management programs. However, what was unique about this initiative was that we had the clinical best practice guidelines (MHSPs), the evidence-based (researchers), and the

administrator/director facilitation of connections to other services (decision makers), but in addition we had the input of students who use these types of services at every step of the process to inform on what students actually want. Consistent with the PAR methodology, including students as full partners has shown to have a valuable contribution to tailor the mental health outreach program to university students' needs beyond what had been reported in the best practice literature.

Limitations and Future Directions

The primary limitation of the study is the selection bias. Students in the study agreed to participate voluntarily in evaluating a stress management and resilience building program. Thus, students had a particular interest in this type of program. While this is a limitation, it is positive in that they are the students most in need of such a program. Another limitation is the lack of purposeful sampling in the study (i.e., convenience sampling resulted in a predominantly Caucasian female sample). Future research may benefit from examining a more gender distributed and ethnically diverse sample to better understand specific factors which may contribute to the acceptability and appeal of these types of programs in different populations. Additionally, the online mental health outreach program was disseminated during the peak of the COVID-19 pandemic in Canada. Hence, future studies may want to explore student perspectives during a time where students are faced with regular day to day stressors to see if there would be any difference in students' response to the program.

Implications and Conclusion

Although there are numerous identified stressors and challenges associated with emerging adulthood, mental health problems often remain undertreated, as a result of barriers to help-seeking such as accessibility, cost, stigma related to mental health, time constraints, etc.

Evidence demonstrates online mental health programs are promising in addressing these barriers (Clarke et al., 2015; Conley et al., 2016; Harrer et al., 2018; Kauer et al., 2014). Therefore, it is crucial to consider students' perspectives when developing these types of interventions. Thus, given overall primarily positive impressions of the program, findings of the current study have important implications for the development of online mental health provision and resources for university students as it has identified critical key areas to consider. Furthermore, given that many of the beneficial components of the program (positive impressions) were developed through discussions on the multi-disciplinary team collaboration, this study demonstrates support for using a PAR model in the program development and having students as full partners on a collaborative team. As demonstrated by the overwhelmingly positive impressions of the program, involving students in the program development process may contribute to improving the uptake of available mental health services. Finally, findings of the present study contribute to best practice recommendations for future online program development for university students.

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Figure 1

Stress and Coping Online Outreach Program Project Timeline

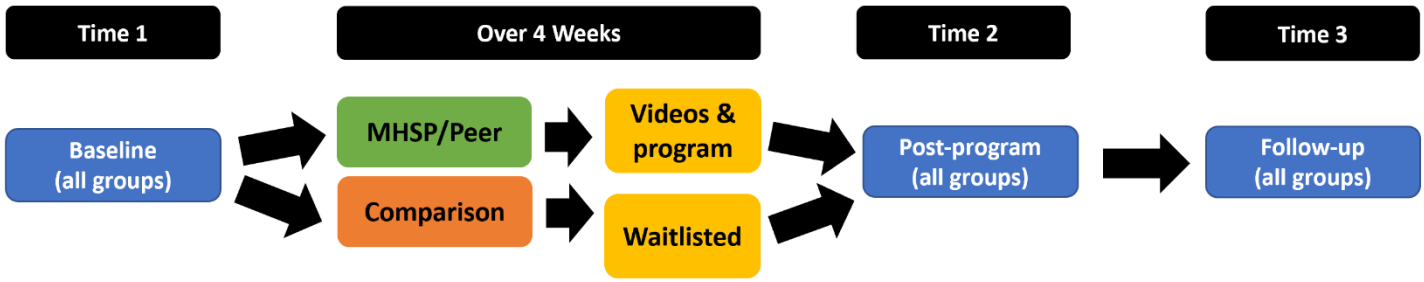

Table 1

Participant Demographics by Time Point

Variables		**Time 1 (Survey)**	**Time 2 (Survey)**	**Time 3 (Interview)**
Gender	Female	79.4 %	82.5 %	77.6 %
	Male	17.8 %	14. 0 %	22.4 %
	Non-binary	2.8 %	3.5 %	0 %
Faculty	Arts and Science	41.1 %	41.5 %	35.4 %
	Science	20.6 %	15.9 %	18.8 %
	Agricultural and Environmental Studies	7.5 %	9.8 %	10.4 %
	Engineering	7.5 %	6.1 %	12.5 %
	Education	8.4 %	9.8 %	8.3 %
	Management	6.5 %	6.1 %	6.3 %
	Other	8.4 %	10.8 %	8.3 %

Table 2

Students Impression of the SCOOP Across Time: Identified Codes and Categories

Categories Consistent Across Time (T1, T2, and T3)		
Categories	Codes	Sample Comment
Positive Impressions		
Variety and Diversity of Resources/Strategies	Variety of resources Variety of strategies Diversity of formats	"I enjoyed the diversity of strategies. If one thing I felt didnt [SIC] worked for me, I could try something else." (ID 47) "I enjoyed the variety of strategies that they offer. I really liked how they didn't impose any of the strategies. We were free to chose the ones we wanted to use." (ID 164)
Brevity, Simplicity, and Accessibility	Organized Clear explanation Accessible Free Short User-friendly Easy to use strategies	"The accessibility of the site, how easy it was to find and use resources." (ID 5) "The relative short length and the fact that its free." (ID 161)
Value and Appeal	Informative Helpful Engaging Interesting Visually appealing Effective	"I enjoyed the program, the website with the strategies is really informative and helpful, and the videos were well done." (ID 281) "Very good graphics for each of the techniques, love the website's overall look" (ID 474)
Relatability	Relatable Student presenters were relatable Diversity of presenters University specific	"I like how it was really specifically tailored to my life as a University student and took into account all the stresses and responsibilities that come along with that." (ID 64) "I feel like the thing that was the most engaging were the

		presenters. I like the fact that the presenters weren't let's say middle age there. They were the same age as university students. I also noticed that both the presenters were diverse people. So, it wasn't just two white people." (ID 322)
Negative Impressions		
Need for Additional Support on Getting Started and Accountability	Need more reminders Lack of specificity on integrating strategies Overwhelming number of strategies Need for more accountability Too independent	"I found it difficult to schedule time to practice SCOOP strategies. I wish I had had more constant and frequent reminders." (ID 88) "Because it's all online, there's no accountability" (ID 21)
Need for Additional Demonstration/Explanation of Strategies in Videos	Need more demonstration of strategies in videos Need more explanation of strategies in videos Wanted more videos less text	"I wish that more of the strategies from the online resource were presented in the video (even if that would make the videos longer)." (ID 394) "Last video on long term strategies could have been longer. Give more strategies or recap on what was covered." (ID 157)
Category Different Across Time (T1, T2, and T3)		
Encourages Reflection and Awareness Around Own Mental Health and Well-being (T1 and T2 only)	Encourages commitment to wellness Reflection/build awareness of mental health and prioritization	"Made me reflect on my thoughts and emotions." (ID 481) "It helped me to think about how I feel" (ID 89)

Chapter 5: Conclusion

Chapter 5 will discuss the overarching objectives of the thesis (Study 1 and Study 2). Subsequently, a summary of the main research findings will be discussed with integration between the two studies and contextualized within the existing literature. Then, limitations will be discussed, highlighting recommendations for future research. Finally, the chapter will end with contributions to the field, implications for future research, program development, implementation, and service delivery as well as concluding comments.

Summary of Objectives and Findings

The current thesis sought to evaluate the acceptability and effectiveness of the SCOOP, an online mental health resilience building program for university students as they navigate through the stressful period of emerging adulthood. To this end, two studies with university students were conducted in order to investigate two main objectives: (a) to evaluate the acceptability and effectiveness of a MHSP-led versus a peer-led online mental health resilience building outreach program against a comparison group longitudinally and (b) to examine university students' impressions of an online mental health resilience building outreach program longitudinally from the onset of the pandemic to the early adjustment (4 months following the pandemic onset).

In investigating the acceptability of the SCOOP findings in both Study 1 and 2 revealed that students reported high satisfaction and positive impressions of the program. Interestingly, results from Study 1 revealed that the online mental health resilience building outreach program was very well received where students rated both the MHSP-led and peer-led programs with high acceptability and satisfaction ratings regardless of the program deliverer. Furthermore, both the MHSP-led and peer-led programs had the majority (80.6% in the MHSP-led group and 90.8% in

the peer-led group) indicating that they were planning to use the SCOOP strategies in the future from *sometimes* to *frequently*. Additionally, 95.9% of students in the MHSP-led group and 98.7% in the peer-led group said that they *somewhat agree* to *strongly agree* that they would recommend the SCOOP to other university students. Such high ratings are consistent with previous literature, indicating the acceptability of online mental health initiatives (Fortuna et al., 2020; Rickwood et al., 2019). However, to our knowledge this is the first study examining the acceptability and satisfaction of a brief universal resilience building online program in a sample of university students, specifically examining MHSP-led and peer-led differences. Most mental health resilience building programs reported in the literature are a minimum of one-hour sessions (Conley et al., 2016), while the current program included three videos totalling up to about 28 minutes. Thus, results are encouraging as there is a need for innovative, cost-effective, efficient approaches to provide support for university students' mental health as well as finding novel approaches that will engage students to use such resources. Findings also suggest that an online mental health resilience building outreach program may be acceptable for university students regardless of service delivery type (MHSP-led or peer-led). Expanding on these findings, results from the qualitative content analysis of Study 2 revealed that the following factors contributed to such positive impressions of the program: (1) *Variety and Diversity of Resources/Strategies*; (2) *Brevity, Simplicity, and Accessibility*; (3) *Value and Appeal*; (4) *Relatability*; and (5) *Encouragement of Reflection and Awareness Around Own Mental Health and Well-being*. Interestingly, categories were consistent across time (even with the more in-depth qualitative interviews) with the exception of (5) *Encouragement of Reflection and Awareness Around Own Mental Health and Well-being* which was only present at T1 and T2. Such consistent findings across time are encouraging given the generally positive impressions of the SCOOP as well as

the challenging context in which the program was disseminated (e.g., changes in experienced stressors, increase in online resources being disseminated; Li et al., 2021; Son et al., 2020).

The emergence of the categories (6) *Variety and Diversity of Resources/Strategies* as well as (7) *Relatability* is an interesting finding since providing such a diversity of resources and strategies and ensuring that the content was relatable were facilitated as a result of the PAR model and interdisciplinary team collaboration. The involvement of student service users, as part of a multidisciplinary team of MHSPs, researchers, and decision makers, in the program planning, design, development, and dissemination facilitated the integration of diverse, appealing, and relatable content for university students within the program. Specifically, collaborative discussions with the multidisciplinary team facilitated the integration of often overlooked stressors of emerging adulthood such as novel financial independence, romantic relationships, and living independent of family. As suggested by previous literature (Nelson et al., 2010; Nicholas et al., 2016), using a PAR model and actively involving intended users in the program development and dissemination may have additional benefits and support acceptability and satisfaction ratings.

The emergence of the categories (2) *Brevity, Simplicity, and Accessibility*; (3) *Value and Appeal* is consistent with previous literature (Bakker et al., 2016; Harrer et al., 2018; Irish et al., 2020), highlighting the need for such programs to be short and concise to keep users engaged as well as the need to provide a visually appealing, informative, and interesting program, so that individuals can see the value and appeal in using the program. Although, findings were highlighted in previous literature, there is limited research examining such factors in university student populations (Conley et al., 2016). Thus, these findings provide novel insight on

university students' perceptions of an online mental health skills-building program and specific factors that support their engagement and use of the program as well as barriers.

Finally, the emergence of the category (5) *Encouragement of Reflection and Awareness Around Own Mental Health and Well-being* contribute to the best practice literature for the development of such programs where future initiatives may want to provide students with the opportunity to check in on their well-being through short self-assessment or check ins. Providing students with the opportunity to reflect may also support students' facility to navigate the self-guided program and evaluate what strategies or areas that they need to work on for themselves or where they may require additional support. Additionally, findings revealing such self-reflection at the onset of the pandemic and early pandemic (T1 and T2) are consistent with previous literature demonstrating that nurses reported increased self-reflection at the onset of the pandemic (Sun et al., 2020). As such, it is hypothesized that the desire for greater self-reflection about one's well-being may have been influenced by the onset of the pandemic and may potentially explain why such results were not found in T3. There is a need for further research to examine whether findings would translate to different contexts (i.e., without rapid changes and instability).

Study 2 revealed that certain factors were identified as requiring improvement such as the (5) *Need for Additional Support on Getting Started and Accountability* and (6) *Need for Additional Demonstration/Explanation of Strategies*. Such findings were surprising given that the research team based the decision to keep guidelines on the integration of strategies more general to allow for flexibility based on the review of the literature indicating that students have a preference for programs that are more flexible in their approach (Achilles et al., 2020; Fleischmann et al., 2018; Wallin et al., 2016). Similarly, the decision to keep demonstration of

strategies to a minimum to keep the videos as short and concise as possible to retain students' attention was also decided based on evidence from previous program dissemination in community adult populations (Bakker et al., 2016). Thus, findings have implications for future program development and implementations, where result contribute to the best practice recommendation for the development of future initiatives specifically targeting university students.

Although, students rated the program highly, surprisingly, no difference was found between any of the three groups (MHSP, peer, and comparison) on any of the well-being outcomes over time as indicated in Study 1. However, there was an effect of time, whereby students reported getting better over time. Therefore, findings that the interventions groups did not differ from the comparison was surprising considering previous literature demonstrating effectiveness of these types of interventions (Clarke et al., 2015; Griffiths et al., 2010; Harrer et al., 2018) and high acceptability and satisfaction reported in both Study 1 and Study 2. Still, results must be interpreted in the context of the COVID-19 pandemic happening at the time. The reported stress and concerns associated with the COVID-19 pandemic and its associated changes gave rise to university students having access to a wealth of online resources for stress management and to support their mental health during this challenging time. Thus, the comparison group had access to a wealth of support similar to the intervention groups. Additionally, students experienced a removal of academic stress which included having two weeks off from the university, deadlines were pushed back, and students were provided with the pass or fail option for final grades decreasing the intense competition for grades. Therefore, the added leisure time, additional time for self-care, and reduction of previously reported stressors (i.e., academic stress) may have contributed to an equivalent increase in well-being for all three

groups. Such findings are demonstrated whereby all three groups revealed a significant change over time for coping self-efficacy (CSE), social support, mindfulness, and the quality of life ((QoL) social relationships and environment domains). Specifically, CSE, mindfulness, and QoL environment domain were reported to increase from Time 1 to Time 2 and then continue to increase or remain stable at Time 3. Similarly, social support and QoL social relationships domain increased from Time 1 to Time 2 given the increased support at the onset of the pandemic before going back to baseline at Time 3.

In summary, surprisingly all students revealed a pattern of getting better and remaining stable over time on CSE, social support, mindfulness, quality of life (social relationships and environment domain). Such positive changes in well-being are hypothesized to be attributed to the above-mentioned factors (i.e., reduction of academic stressors, increase in provided support, additional time for leisure and self-care). Such findings are consistent with a study examining well-being in a sample of university students with a history of mental health difficulties (Hamza et al., 2021). Hamza et al. (2021) found that university students with pre-existing mental health difficulties reported better or stable mental health during the pandemic compared to one year prior. In the present study participants were recruited based on an interest in learning about better stress and coping. Indeed, at baseline pre-Covid-19, 25.3% of participants reported currently accessing mental health services and 74.7% of students reported having experienced stress and/or mental health or well-being difficulties at a level that interfered with their ability to engage in the activities of everyday life. These reports are higher than ones reported in general university samples (about 15% report currently accessing mental health services and about 45% reporting stress interfering with their ability to function; American College Health Association, 2019; Eisenberg et al., 2007; Oswalt et al., 2020). Taken together, the pandemic may have had a

particular impact on students with reported mental health distress whereby students reported increased levels of well-being at the pandemic onset and early adjustment due to removal of day-to-day stressors.

Limitations and Future Directions

Despite the intriguing findings suggested by the current thesis, some limitations should be considered. Since the program was disseminated during a time of change due to the onset of COVID-19 pandemic, results must be interpreted with caution as acceptability and effectiveness of the program may have been affected by factors related to the pandemic outbreak. Thus, future research would benefit from evaluating the program effectiveness in a different context in supporting students. Finally, there is limited generalizability of the findings due to a predominantly Caucasian female university sample. As with other similar studies, recruitment from male populations serves as a barrier to the evaluation of mental health programs (Amanvermez et al., 2020). Future research may benefit from examining a more gender distributed and ethnically diverse sample for more generalizable findings.

Implications

Nevertheless, results of the current thesis have important implications for future research and program development initiatives. First, results demonstrating that students reported an increase on a number of well-being outcomes (i.e., CSE, mindfulness, social support, QoL (social relationships and environment domain)) was a surprising finding given previous literature on university students reporting negative mental health outcomes related to the pandemic (e.g., Conrad et al., 2021; Son et al., 2020). Such findings may suggest a potential impact of academic stressors on student wellbeing. In a naturalistic experiment such as the pandemic where there is tremendous uncertainty and anxiety associated with the health crisis (Copeland et al., 2021) and

yet the removal of academic stressors (i.e., flexible online learning, more flexible evaluation approaches, etc.) results in an increase in wellbeing is surprising. Accordingly, findings highlight the need for future research to examine positive outcomes related to the pandemic in university student samples to provide a more accurate picture of students' well-being and coping during this challenging time. Specifically, given that emerging adulthood is a distinct developmental period as emerging adults face unique challenges and stressors (Arnett et al., 2014), this highlights the importance of examining their response to COVID-19 separately from an adult or adolescence population to gain a better understanding of their well-being during this time.

Moreover, these findings are consistent with a growing body of literature demonstrating potential benefits of the pandemic for university students (Gonzalez et al., 2020; Lukács, 2021), which raises a difficult question for campus mental health and higher education - to what extent is the campus mental health "crisis" solvable with simple adaptations to the academic demands? Future research may want to examine potential contributors to student well-being in relation to academic demands (i.e., flexibility for learning and working from home, flexibility in type of learning assignment and grading, online office hours for greater accessibility). Identifying student needs to better support them in dealing with academic stressors and preferences for their learning environment may thus contribute to supporting student mental health.

Students' high acceptability and satisfaction with the program has encouraging implications that an online mental health resilience building program is acceptable and feasible for university students regardless of service delivery (MHSP or peer). Such findings are encouraging considering the limited resources in university settings and MHSPs' limited time, as such there is value in having peers deliver training around strategies to support students during the challenging period of emerging adulthood. Furthermore, results from Study 2 provide best

practice recommendations for future online mental health resilience building program development. Additionally, given the suggested benefits of using the PAR model and involving student service users as full partners in the development and dissemination of the mental health programs, future initiatives are recommended, if deemed appropriate and feasible, to consider using such an approach to improve engagement and satisfaction. Finally, findings contribute to the limited literature on university students' acceptability and satisfaction with such programs developed using a PAR model.

Concluding Comments

Despite limitations, this thesis is a significant contribution to research on the development and dissemination of online resilience building programs as well as university students' well-being before and after the onset of the COVID-19 pandemic. Although future research is needed to evaluate effectiveness and acceptability of such a program outside of the COVID-19 context, results reveal promising findings of program acceptability and satisfaction regardless of service delivery as well as recommendations for the development of future online mental health outreach programs for emerging adults.

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Appendix A

Recruitment Flyer

McGill University

FEELING STRESSED? WANT TO LEARN NEW WAYS TO COPE?

Development And Intrapersonal Resilience Research Team

We want your feedback on a **brief online stress reduction program**. Learn strategies to cope with stress online, **wherever or whenever you want!**

You can do this **on your own**, in **private**, and all information will be kept strictly **confidential.**

SCOOP

STRESS & COPING: ONLINE OUTREACH PROGRAM

WHAT'S INVOLVED?

Watch 3 very short (8-12 minutes each) online videos **over a 1-month period** showing you skills and strategies to help you cope with stress.

Complete **3 brief surveys** (no longer than 20 minutes) **throughout the study** to obtain your feedback on the program and help us assess potential benefits to your wellness (e.g., stress and coping questionnaires)

As a token of appreciation for your time and effort, each student will be entered in a draw where they have a 1 in 4 chance of winning 50$!!

Email here!

WHO ARE WE LOOKING FOR?

McGill **undergraduate** students.

If you're interested in participating or have any questions send us a quick email at **thescoop.study@gmail.com.**

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Appendix B

Email Invitation for Participation in Study

Hello,
Thank you for your interest in participating in our study! As you may already know, stress is an issue of increasing concern among university students. In response to this, we have developed a new brief, online stress reduction program that seeks to help university students learn strategies to cope with stress. However, student feedback is very important. Therefore, we need your help to determine the effectiveness of this program as well as your general thoughts on this new initiative!

All participants will be randomly assigned to either receive the brief online program or be part of a comparison group. The program involves watching three very short (8-12 minute each) videos online over one month showing you skills and strategies to help you cope with stress. In addition, you will be given access to a library of resources where you will be asked to choose resources to try out over the 1-month period.

Finally, all participants will be asked to complete three brief online surveys to obtain your feedback and help us assess potential benefits to your wellness (e.g., stress and coping questionnaires).

Timeline:
In the first week of the study, we will ask you to fill out a brief online survey (baseline measures) on how you're doing in terms of stress and coping.
In the second week, participants who receive the program will begin with the first video (12 min) that will describe the program and highlight some of the main strategies that we will be sharing.
After that first video, you will have two weeks to practice strategies and we will then send you another brief video (8 minutes) to watch. You will then have another two weeks to practice the strategies, followed by the final video (8 minutes) in which we will share tips on how to maintain effective stress management habits and how to commit to enhancing your wellness going forward. You will be sent another brief survey on stress and coping as well as some questions to obtain your feedback on the program.
One month later, we will check-in with you again through another brief, online survey and ask you about your wellness.

As a token of appreciation for your time and effort, each student participating in the study will be entered in a draw where they have a 1 in 4 chance of winning 50$!!

Please see the attached consent form for all of the details of this study.

IMPORTANT: We will send you a link to the first online survey on **[insert study start date here]. Please make sure to check your emails on that day because you will only be given one week to complete the baseline.**

Feel free to contact us if you have any questions.
Thank you very much for your time.

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Appendix C

Consent Form for Participation in Study

What is the purpose of this study?
This is to invite you to participate in a research study evaluating a brief, online stress reduction program that seeks to help university students learn strategies to cope with stress. This program was developed as part of a collaborative project between university students such as yourself, mental health professionals, researchers, and administrators/decision makers within the university setting. As you may know, university students are disclosing unprecedented levels of mental health challenges and universities are straining to keep up with student need. This program was developed in response to this need and we ask for your participation in evaluating the acceptability and effectiveness of this pilot program.

What does participation in this study involve?
All students who agree to participate in this study will be randomly assigned to either receive the program or to a comparison group. All groups will be asked to complete 3 brief, online surveys over the winter semester. The first survey will be sent on the first week of the study (February 2020), the second and the third surveys will be sent following a 5- and 9- week delay, respectively. Each online survey will take you approximately 20 minutes to complete and you will be asked questions on topics related to your stress, coping, and overall wellness.
Students in the program group will be asked to watch three brief videos presenting skills and strategies on stress-management over a 1-month period. They will receive all program materials (i.e., videos, surveys, and the resource library) via an email link that will be sent by the research team. Students in the program group will also be asked to provide feedback on the overall content of the program. Students in the comparison group will receive all program materials (i.e., 3 brief online videos and the resource library) via an email link that will be sent by the research team at the end of the study.

Are there any risks of participating in this study?
While there are minimal risks involved in participating in this research project, some participants might be sensitive to, or uncomfortable with, some of the questions. You are free to skip any questions that make you uncomfortable. You are also free to withdraw from the study at any time without penalty or prejudice.

What are the benefits of participating in this study?
There are numerous benefits to participating in this study (1) you will have the opportunity to provide valuable feedback about this program to help inform wellness initiatives on university campuses; (2) you will be receiving a video-based, online program providing skills and strategies to enhance stress management and coping; (3) you will have access to an online library of resources that focus on enhancing university students' well-being; and (4) you will receive a report summarizing the main findings of this study along with a personalized profile of your stress, coping, and wellness scores after the end of the data collection period.

How will I be compensated?
Participants will be entered in a draw for a chance to win $50 where the odds of winning will be 1 in 4.

How will my confidentiality be protected?
Your confidentiality will be carefully protected during every step of the research process. Once the online survey is completed, the data collected will only be identified by a unique ID number that will be assigned to your email address. Therefore, none of your personal information will be associated with the data. All

identifying information will be kept on a separate, password-protected file stored on a secure computer in Dr Heath's research lab. Although research assistants working on this project will have access to participants' data, no identifiable information will be shared in any of the dissemination activities.

Can I refuse to participate or withdraw from the study?
Your participation in this study is completely voluntary and will not affect any of your grades or standing in the university. You can withdraw your participation in this study at any time without penalty or prejudice. You may also skip any questions that make you uncomfortable.

Agreeing to participate in this study does not waive any of your rights or release the researchers from their responsibilities. A copy of this consent form will be given to you and the researcher will keep a copy. To ensure the study is being conducted properly, authorized individuals such as a member of the Research Ethics Board, may have access to your study information. By signing this consent form, you are allowing such access.

Questions?
Should you have any questions about the study, or if any issues arise because of your participation in the study, please feel free to contact us:

Funding Agency: Canadian Institute of Health Research (CIHR)

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If you have any questions or concerns regarding your rights or welfare as a participant in this research study, please contact the McGill Ethics Officer at 514-398-6831 or lynda.mcneil@mcgill.ca.

Disclaimer: Please note that this skills-based video outreach program is designed to enhance mental health resilience by providing students with healthy coping strategies; however, it is not intended to substitute services provided by mental health professionals. Should you feel in any need of professional counselling/psychological/psychiatric services click here to McGill's Student Wellness Hub for more information on mental health services webpage.

I understand the purpose of the study and know the risks, benefits, and inconveniences that are involved in this research project. I realize that the data will be used for the above stated research purposes.

O I consent to participate in the study and confirm the above.
O I do not consent (you will be redirected to the debriefing page).

Appendix D

Consent Form for Participation in the Interview

What is the purpose of the interview?
This is to invite you to participate in an interview as a follow-up to your participation in the study evaluating a brief, online stress reduction program that seeks to help university students learn strategies to cope with stress. This interview will be an opportunity to gain further insight into the acceptability and effectiveness of this program to inform mental health support on university campuses.

What does participating in the interview involve?
The interview will take place online (e.g., Zoom) or over the phone and will last approximately 15-30 minutes. During these interviews you will be asked questions regarding (a) your perspectives on the content, delivery, and format of the videos and (b) any additional thoughts and feedback about the program. Additionally, given the recent coronavirus (COVID-19) outbreak and its likely impact on student stress, you will be asked a few questions regarding your experience with the SCOOP as it pertains to the COVID-19 outbreak.

How will my confidentiality be protected?
You have been assigned a unique participant ID number. We will use this ID number to link your responses from your survey to your interview responses. Your contact information and participant ID number will be stored on an encrypted and password protected file, separately from your interview responses. Your interview will also be audio recorded and stored on a secure server. Only Dr. Heath and the research assistants working directly on the project will have access to your contact information and audio recording. Following data collection, interviews will be transcribed in verbatim, and the recorded file will be deleted to protect your confidentiality. Additionally, all identifying information will be omitted in the final transcription. The master list of contact information will also be deleted when data collection for the study is complete. Although your contact information and audio recordings will not be shared, verbatim interview responses maybe shared with the greater research community and published. Any personal information that could identify you will be removed before results are made public.

Are there any risks of participating?
While there are minimal risks involved in participating in this research project, some participants might be sensitive to, or uncomfortable with, some of the topics discussed. You are free to discontinue your participation in this part of the study at any time, without penalty or prejudice. You are also free to not answer any of the questions that make you uncomfortable.

What are the benefits of participating?
There are clear benefits to participating in this part of the study: (1) you will have the opportunity to provide additional feedback about your perspectives on this pilot program, (2) you will have the opportunity to provide recommendations which will help inform mental health support initiatives on university campuses.

How will I be compensated?
You will be compensated $25 to thank you for your participation in the interview.

Can I refuse to participate or withdraw?
Your participation in this interview is completely voluntary and will not affect any of your grades or standing in the university. You can withdraw your participation in this part of the study at any time without penalty or prejudice. You are also free to not answer any of the questions that make you uncomfortable. You may choose to withdraw any statement you made by contacting the research team at any point; however, once the audio tapes are deleted we can no longer eliminate individual statements as there will be no identifying information. The data will be anonymized approximately 1 month following the interview.
Agreeing to participate in this study does not waive any of your rights or release the researchers from their responsibilities. A copy of this consent form will be given to you and the researcher will keep a copy. To ensure the study is being conducted properly, authorized individuals such as a member of the Research Ethics Board, may have access to your study information. By signing this consent form, you are allowing such access.

Questions?
Should you have any questions about the study, or if any issues arise because of your participation in the study, please feel free to contact us:

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If you have any questions or concerns regarding your rights or welfare as a participant in this research study, please contact the McGill Ethics Officer at 514-398-6831 or lynda.mcneil@mcgill.ca.

I understand the purpose of the study and know the risks, benefits, and inconveniences that are involved in this research project. I realize that the data will be used for the above stated research purposes. Further, I understand that the interview will be audio-taped and analyzed, omitting all identifying information, and the audiotape will then be securely erased.

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Full Name _____ Date_____

Signature_____