

Original Research

## Promoting College Student and Staff Well-being Through a Mindfulness-based Coping Program

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2023, volume 8, issue 3  
doi:10.21926/obm.icm.2303034**Received:** February 23, 2023**Accepted:** August 22, 2023**Published:** August 30, 2023

### Abstract

This study evaluated the impact on student and staff well-being of a mindfulness-based cognitive-behavioral coping program, Be REAL (Resilient Attitudes & Living), delivered by campus staff using a task-sharing approach. The program was adapted for online delivery during COVID19. Study participants included 325 undergraduate students and 100 staff members at a large tri-campus university in the U.S. Participants completed surveys with self-report measures assessing mindfulness, perceptions of stress, emotion regulation, executive control, coping, self-compassion, anxiety, depression, and indicators of well-being including resilience and flourishing. Students also completed measures of social connectedness and happiness, while staff completed measures of work-related burnout and self-efficacy. With students we employed an assessment only control group, and with staff, a waitlist control (WLC) design was used. Feasibility and acceptability measures were obtained. Compared to students in the assessment-only group, students participating in Be REAL showed significant improvements in mindfulness, self-compassion, flourishing, resilience, happiness, emotion



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regulation problems, executive control, active coping, social connection, depression and anxiety symptoms. These effects were maintained at follow-up. Compared to WLC, staff participating in Be REAL reported improved self-efficacy and reduced anxiety symptoms. This study demonstrated that a mindfulness-based cognitive-behavioral coping enhancement program, Be REAL, delivered online during the pandemic, can improve the well-being and mental health of college students and staff. It further demonstrated feasibility, acceptability, and effectiveness through a task-sharing model whereby staff supporting students facilitated the groups, which presents universities with a promising model of cultivating a campus culture of well-being.

### **Keywords**

Emerging adulthood; mental health; prevention; task-sharing; higher education

## **1. Introduction**

### **1.1 College Student Mental Health**

Mental health concerns among college students and young adults have been on an increasing trajectory in recent years. Surveys completed by 350,000 college students across 373 U.S. campuses reveal a 50% increase in the number of students meeting criteria for mental health challenges from 2013 to 2021 [1]. Research by the U.S. Department of Health and Human Services shows that one in every four young adults, ages 18-25, has a diagnosable mental health illness [2]. College student mental health only worsened during the global coronavirus 2019 (COVID19) pandemic [3, 4]. Due to the virus' highly contagious nature, many colleges and universities transitioned to online learning in the spring of 2020 or ended the academic year early [5]. The abrupt move to remote learning posed challenges for many college students, including finding a suitable learning environment, the loss of internships or campus employment, the cancellation of extracurricular activities, increases in sedentary behavior, and elevated levels of academic stress [3, 6].

Consequently, U.S. college students reported increases in symptoms of anxiety (60.8%), depression (54.1%), and feelings of loneliness (59.8%) [3]. Further, a longitudinal study found significant increases in depression symptoms among 1,004 college students from before the pandemic (44.1%) to during the pandemic (61.2%) [7]. A survey with 43,098 students seeking mental health services in fall 2020 found the areas they reported most negatively impacted by the pandemic included "mental health (72%), motivation or focus (68%), loneliness or isolation (67%), academics (66%), and missed experiences or opportunities (60%)" [8]. The upward climb of mental health challenges yields an urgent call for colleges to find scalable ways to support student well-being.

### **1.2 A Need for Scalable Solutions to Promote Well-Being**

Before the COVID19 pandemic, university-based resources to support students, including mental health support, were already limited [9, 10]. In the fall of 2020, student demand for campus mental health support dropped 32% due to the shift to remote learning and a decrease in students living in

residential halls, meaning students had more limited access to campus resources and had to seek care in their communities or forgo any treatment [11]. In their 2022 college student survey, Inside Higher Ed reported that only 34% of students struggling with mental health challenges had received counseling [12]. The same survey highlighted student priorities for mental health support, wherein 37% of students selected the expansion of campus counseling staff and 20% indicated increased tele counseling services would be helpful. While increasing the number of diverse, trained providers is a key strategy for addressing mental health services demand, this will not fully address the rising need as there was a shortage of providers prior to the pandemic. A primary prevention approach is also needed to provide students with tools for maintaining well-being at a critical time in their lives and reducing the need for “downstream” clinical intervention.

A task-sharing model for delivering preventive mental health programs is a promising approach to addressing the increasing demand and limited task-force capacity [13]. Task-sharing approaches, whereby mental health or other services are shifted to non-mental health providers such as community health workers, have demonstrated significant promise in lower- and middle-income countries as well as in rural mental health settings in high income countries [13]. Further, a review of nine promising task-sharing models highlighted three programs that had been successfully implemented in Canada and Australia to support youth mental health and were led by teachers, school staff, peers, and youth workers [14]. In campus settings in the U.S., a task-sharing model, in which staff already working with students delivers prevention programming can enhance the acceptability of the program to students, the feasibility of implementation, and promise for scalability through a train-the-trainer model. Additionally, this is accomplished at a relatively low cost to institutions given that it utilizes staff already engaging with and supporting students. Given the increases in student mental health concerns and limited services to address them, it is essential to evaluate evidence-based prevention programs that can be effectively delivered using a task-sharing approach.

### ***1.3 The Well-being of Campus Staff***

The well-being of higher-education staff is also a significant concern and may contribute to students’ experiences and well-being. Staff report mental health problems and burnout related to unreasonable work demands, and low control, support, or positive relationships [15]. As with students, the COVID19 pandemic exacerbated these concerns, causing staff to feel increased levels of stress and burnout. Counseling center staff were significantly affected. According to a report by Mantra Health, of 120 U.S. colleges and universities, 91% of campus counseling center directors and clinicians reported experiencing burnout during the fall of 2020 [16]. Exhaustion and burnout were felt by student affairs staff and administrators too. According to a report from NASPA of 957 student affairs professionals, 84% of respondents reported that stress and crisis management responsiveness may cause them to leave the field [17]. This data underscores why college presidents rated staff well-being as their third highest concern in 2020 [18].

### ***1.4 Previous Campus Interventions to Promote Well-being***

College campuses increasingly address student mental health through prevention approaches that aim to increase well-being and resilience and decrease mental health challenges. An increasingly adopted approach is group programs that combine mindfulness-based interventions

with cognitive behavioral therapy. A meta-analysis of studies among college students shows that interventions that combine these can significantly improve student levels of anxiety and depression [19]. In a review of social emotional learning interventions in higher education, Conley [20] found that mindfulness programs demonstrated effectiveness at improving SEL and well-being, and the cognitive-behavioral interventions and relaxation programs also yielded significant benefits to SEL and well-being. Research by Moè [21] explored the effectiveness and maintenance of self-managed well-being practices, including gratitude and self-compassion, and their findings underscore the importance of designing practices that college students can apply personally. Campuses have been tasked with piloting and evaluating well-being programs in various settings, including those outside a clinical environment. For example, programs focused on well-being are offered as a course for credit [22], integrated into residential halls [23], or presented via web-based technology [24]. The COVID19 pandemic increased the need to further evaluate the effectiveness of online programs. Pilot studies have shown that brief online mindfulness and compassion-based programs are feasible with university students and can significantly decrease stress and anxiety [25-27]. Our two prior studies evaluating a prevention program that integrated cognitive-behavioral coping strategies and mindfulness practices showed improvements in students' effective coping, stress-management, mindfulness, and mental health indicating its promise for addressing student mental health [28, 29]. The positive impact of this program was also demonstrated when it was offered in accessible settings for students, including a campus counseling center, student affinity groups, and courses for credit, through a task-sharing model whereby groups were offered by staff (e.g., academic advisors). Participants demonstrated significant improvements in perceptions of stress, emotion dysregulation, coping, social connection, and self-compassion, as well as decreased anxiety [29].

### **1.5 The Current Study**

In this study, we evaluated the effectiveness of university staff members in delivering a mindfulness-based cognitive-behavioral coping-enhancement program for students. As the study was conducted during the COVID19 pandemic, the program was adapted for online delivery. The program, Be REAL (Resilient Attitudes & Living), has previously been evaluated and found to be effective in improving student well-being [28, 29]. This program's novel pieces include a combination of cognitive-behavioral coping strategies with mindfulness practices, a relatively brief duration, and delivery by staff through a task sharing model. Building on prior research, the current study aimed to replicate findings that the program was effectively delivered through a task-sharing model by campus staff, evaluate an online adaptation of Be REAL for students, and include assessments of campus-based staff well-being. Our questions were: 1) To what extent does an online version of Be REAL hold promise for improving the mental health and well-being of undergraduate college students? 2) How effective and feasible is a task-sharing model in expanding prevention programs for students? and 3) To what extent does Be REAL hold promise for improving the mental health and well-being of university staff and supporting their work with students?

## 2. Methods

### 2.1 Participants

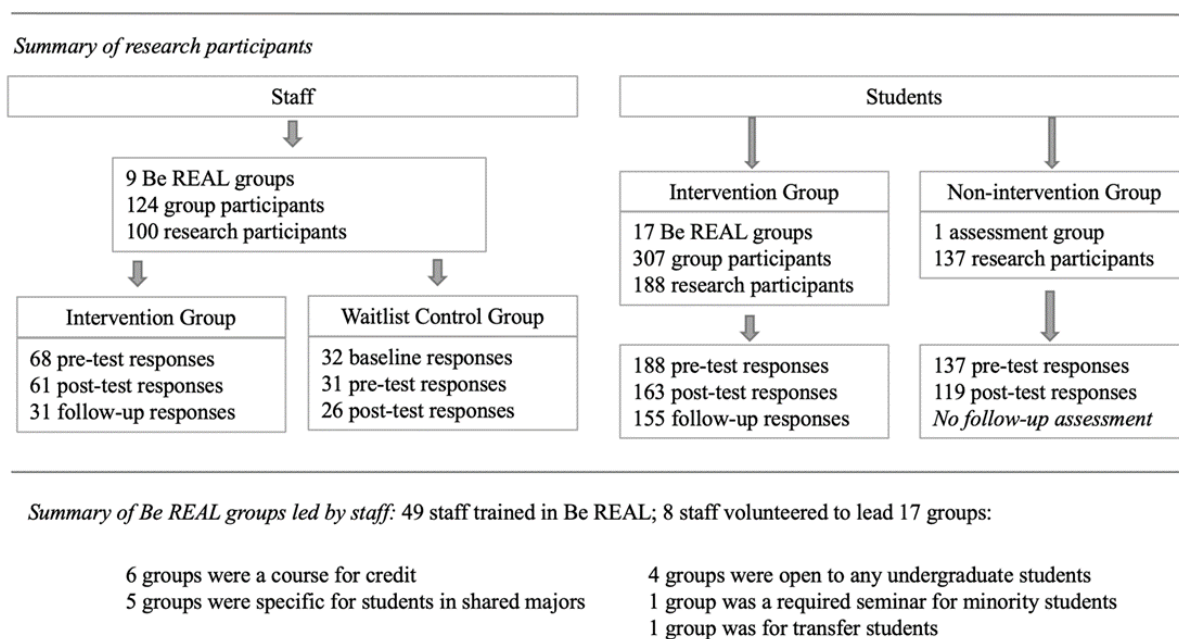
Study participants included 100 staff and 325 students at a large tri-campus university in the U.S. Participants' gender and race/ethnicity are shown in Table 1. Staff enrolled in Be REAL groups advertised across campus and offered at no cost. After signing up, staff received an email sharing details about the research, and the facilitator would share talking points about the study in the first session. Of the 124 staff who participated in 9 different groups, 100 volunteered to participate in the research and completed the pretest (intervention group) or baseline (waitlist control group [WLC]) assessment; 87 participants completed the posttest assessment and 31 the follow-up. Staff indicated their highest level of education as 11.5% J.D, M.D., or Ph.D., 71.3% Master's degree, 2.3% some graduate school, and 14.9% college or university graduate level. Thirty-five percent of staff reported receiving other mental health services.

**Table 1** Student and staff gender and race/ethnicity.

<b>Gender</b>	<b>% of students</b>	<b>% of staff</b>
Women	70.8%	89.5%
Men	25.5%	8.1%
Gender fluid, gender non-confirming or other	3.7%	2.4%
<b>Race/Ethnicity</b>	<b>% of students</b>	<b>% of staff</b>
African American/Black	5%	7.4%
American Indian or Alaska Native	2%	0%
Asian	37%	25.6%
Latinx or Hispanic	16%	9%
White	38%	58%
Other	2%	0%

Of staff participating in Be REAL, 49 completed the facilitator training after their Be REAL group ended. Staff interest in the facilitator training ranged from a desire to lead the full 6-week Be REAL program to integrating the practices into their advising. Eight staff members offered 17 groups of the full program to a total of 307 students as part of this study. Staff received a \$400.00 honorarium for their participation in bi-weekly research meetings and completion of weekly fidelity checklists and a post-program reflection survey. Using their own department channels, staff informed students of the opportunity to participate in the Be REAL program or to participate in an assessment-only comparison group. To invite students to participate in the research, staff were provided with talking points, students were emailed enrollment information, and a research coordinator joined the first class to briefly share study details. Although staff shared information about the study with students and provided the research team contact information for students, research staff enrolled students in the study and collected data via online surveys. Study enrollment was voluntary, and staff were not informed which students enrolled in the research. Of all 307 students enrolled in Be REAL, 188 volunteered to participate in the study and completed the pretest assessment at the beginning of their group's term. Posttests were completed by 163 students (87%) at the end of the term, and 155 (82%) students completed the 3-month follow-up assessment. An

additional 137 students volunteered to participate in an assessment-only group. These students were informed about the study by the staff who were trained to deliver Be REAL, and were students who were not participating in a Be REAL group. The assessment-only group completed pretest assessments at the beginning of the term; 119 (87%) completed posttest assessments at the end of the term. See Figure 1: Study Implementation for details.



**Figure 1** Study Implementation.

Five percent of students identified as international. Sixty-one percent of the students reported receiving financial aid, and 30% reported their parents did not have a college degree. Twenty-two percent of students reported receiving mental health support services. There were no significant differences between the intervention and comparison groups on any of these demographic variables or on study pretest measures, indicating the students in the comparison group were comparable to the students who participated in the intervention.

## 2.2 Procedures

All study procedures were approved by the University of Washington’s Human Subjects Division, and informed, signed consent was obtained from all participants prior to their participation in the study. Study measures were administered using REDCap electronic data capture tools hosted at the University of Washington [30]. Participants were compensated \$20.00 for completing the first assessments and \$25.00 for a final assessment using electronic gift cards. We obtained data from staff who received training to deliver Be REAL, from students who participated in the Be REAL intervention, and from students recruited by staff trained in Be REAL but who did not participate in the intervention (comparison group). Study participants completed pretest, posttest and 3-month follow-up assessments. All students in Be REAL, regardless of being enrolled in the research, were asked to complete a feedback survey when their group ended. Student groups were offered during the academic quarter 2020-2021. Students who did not participate in Be REAL completed the same pretest and posttest assessments as program participants, but not a follow-up assessment. For staff,

there were intervention and waitlist groups, with the waitlist group completing a baseline assessment prior to completing pre- and posttest assessments, allowing a comparison of staff who had not yet received the intervention with those who had. Staff Be REAL groups were offered from the spring quarter in 2020 through spring 2021 so that staff could receive training prior offering Be REAL to students. Pretest and posttest assessment for all research participants were administered at the beginning and end of an academic quarter, separated by 8-10 weeks.

### 2.3 Intervention

Be REAL is a group program that includes 9 hours of intervention (e.g., 90 minutes over six consecutive weeks; 60 minutes over 9 consecutive weeks). Each session includes a combination of contemplative practices (e.g., breathing practices, guided meditation, yoga) and training in cognitive-behavioral coping and emotion regulation skills (e.g., balanced decision making, radical acceptance, and cognitive reframing). Each session highlights skills related to four areas: reducing stress, managing emotions, coping with challenging situations, and building connections and compassion (see Table 2 for an overview) [29]. The training model for campus staff includes their participation in Be REAL followed by a facilitator training, including practice teaching, for a total of 16 training hours. Competencies emphasized in the facilitator training include guiding mindfulness and self-compassion practices, introducing cognitive behavioral skills, group facilitation strategies, and inclusive, trauma-informed teaching [28, 29]. As part of the facilitator training, staff agree to offer Be REAL in its entirety and to a high level of fidelity. Permissible adaptations included changing examples to match a particular student group (e.g., major, identity-specific groups, etc.). In this study, within the context of the COVID19 pandemic and university policies, all groups and facilitator trainings were held online via Zoom. The program developers and trainers agreed upon adaptations to ensure the online version was engaging, such as using breakout groups for small group activities, and best practices in using online features.

**Table 2** Summary of content and skills in each of the Be REAL Intervention’s six weeks.

Week	Key Topics, Skills and Practices
1	<i>Topics:</i> Group Introductions, Overview of Concepts, Introduction to the Stress Response <i>Practices:</i> Tuning into the Breath; Yoga; Mindful Listening
2	<i>Topics:</i> Understanding Thought Patterns, Wise Mind <i>Practices:</i> Stress Check; Labeling Thoughts; Be in the Pause Breathing; Connecting with My Values; Mindfulness of Others
3	<i>Topics:</i> Emotion Regulation, Coping Skills <i>Practices:</i> +2 Breathing; Yoga; Mindfulness of the Senses; Name it to tame it, Holding a Stone; 3-2-1 (3 things you can see, 2 things you can touch, 1 thing you can hear); Willing Hands
4	<i>Topics:</i> Window of Tolerance, Radical Acceptance, Common Humanity <i>Practices:</i> Tuning into the Breath; Soften, Soothe, Allow; Progressive Muscle Relaxation; The 3Ps: Pause, be Present, Proceed; Just Like Me

- 5        *Topics:* Cognitive Reframing, Radical Acceptance, Self-Compassion  
          *Practices:* +2 Breathing; Gratitude Meditation; Taking in the Good; Anchor Phrases
- 6        *Topics:* Interactive review, writing a letter to your future self  
          *Practices:* Stress Check; Be in the Pause Breathing; Peace & Kindness Meditation
- 

The Be REAL groups for staff were open to any interested staff member from the university's three regional campuses. Be REAL attracted staff holding various positions, with the majority of staff serving in student-facing positions (e.g., academic advisors, student affairs professionals). The breadth of departments and programs represented by staff is notable. For example, participants included staff serving undergraduate and graduate students, numerous academic departments, student services (e.g., student conduct, residential life), health and wellness units (e.g., counseling center), and cultural and community-based centers (e.g., ethnic cultural center, disability resources). Student groups were implemented in various settings across campus to connect with diverse populations. In groups specific to students from historically minoritized backgrounds, staff facilitating Be REAL had a shared racial, ethnic and/or linguistic background. Staff from specific departments promoted and led Be REAL to students within their academic units. It was also offered to targeted populations (e.g., transfer students) and as a general credit-bearing course. The purpose of offering Be REAL across multiple academic settings was to reduce barriers to support by meeting students where they were naturally learning and spending time.

## **2.4 Measures**

At all time-points, students and staff completed self-report measures assessing mindfulness, perceptions of stress, emotion regulation, executive control, coping, self-compassion, anxiety, depression, and indicators of well-being including resilience and flourishing. Students completed two additional measures of social connectedness and happiness. Staff completed two additional measures of work-related burnout and self-efficacy. Measures were selected to assess the program targets of reducing stress, improving emotion regulation, enhancing active coping, and building connections, as well as the expected impact on well-being and mental health.

### **2.4.1 Dispositional Mindfulness**

Dispositional mindfulness was assessed using the 15-item Mindful Attention Awareness Scale [31] which assesses present attention or lack of awareness. Participants rate statements such as "I find myself doing things without paying attention," and "I rush through activities without being really attentive to them," on a 6-point scale (1 = almost always - 6 = almost never). Internal consistency of 0.80-0.87 has been reported, and alpha was 0.88 in this study.

### **2.4.2 Perception of Stress**

Perception of stress was assessed using the General Life Events Schedule [32] which includes 18 moderately and highly stressful events (e.g., moving, losing a job or friend). Respondents indicated whether each of events occurred in the past year and, if so, how stressful it was on a 3-point scale (not stressful, a little stressful, very stressful). Examples include "You moved or there was a change in your living situation," and "A close family member had medical problems". Scale scores were the



sum of the stressfulness ratings. Cronbach's alpha is inappropriate for life events scales because the occurrence of these life events is assumed to be independent. This measure has been used broadly in the literature [33] and been shown to predict adjustment problems and substance use in adolescents [34].

#### 2.4.3 Emotion Dysregulation

Emotion dysregulation was measured using the brief 18-item Difficulties in Emotion Regulation Scale [35], scored so that it represented deficits in awareness, understanding, and acceptance of emotions, impulse control, and access to emotion regulation strategies. Participants rate statements such as "I pay attention to how I feel," and "When I am upset, I become out of control," on a 5-point scale (1 = almost never - 5 = almost always). Internal consistency reliability of 0.97 has been reported, and alpha was 0.79 in this study.

#### 2.4.4 Executive Control

Executive control was assessed using the attention (5 items) and inhibitory control (7 items) subscales of the Adult Temperament Questionnaire - Short Form [36]. Participants rate statements such as "I am often late for appointments" and "I can keep performing a task even when I would rather not do it," on a 7-point scale (1 = extremely untrue - 7 = extremely true). Attention control reflects the capacity to focus and shift attention to relevant stimuli; inhibitory control assesses the capacity to suppress inappropriate approach behaviors. Alpha for the combined subscales was 0.76.

#### 2.4.5 Coping

Coping was assessed with the COPE Inventory - Short Form [37], which asks participants what they do or feel during a stressful event using a 4-point scale (1 = "I usually don't do this at all" to 4 = "I usually do this a lot"). We used 24 items assessing 8 types of coping behaviors (3 items each). Disengagement strategies include *denial* (i.e. "I refuse to believe that it has happened") and *distraction* (i.e. "I turn to work or other substitute activities to take my mind off things"). Engagement strategies include *active* (i.e. "I concentrate my efforts on doing something about it"), *planning* (i.e. "I make a plan of action"), *restraint* ("I force myself to wait for the right time to do something"), *positive reappraisal* (i.e. "I try to see it in a different light, to make it seem more positive"), *humor* (i.e. "I laugh about the situation"), and *acceptance* (i.e. "I get used to the idea that it happened"). Alphas for the subscales were: active = 0.70, planning = 0.71, positive reappraisal = 0.69, acceptance = 0.66, denial = 0.71, and disengagement = 0.60.

#### 2.4.6 Self-compassion

Self-compassion was measured using the 12-item Self-Compassion Scale-Short Form [38] which assesses dimensions of self-kindness, self-judgement, common humanity, isolation, mindfulness, and over-identification on 5-point scale (1 = almost never - 5 = almost always). Response options include "I'm intolerant and impatient towards those aspects of my personality I don't like," and "I try to see my failings as a part of the human condition". Internal consistency of 0.80-0.92 has been reported, and was 0.87 in this study.

#### 2.4.7 Social Connection

Social connection was assessed only in students with the 14-item Positive Relations with Others subscale of the Psychological Well-being measure [39]. This measure assesses the extent to which an individual has satisfying relationships with others, concern for others, is capable of empathy, and understands give and take of relationships. Participants respond with 'yes' or 'no' to statements such as "Most people see me as loving and affectionate," and "I don't have many people who want to listen when I need to talk." Ryff [39] reported a test-retest reliability of 0.83, internal consistency reliability of 0.91, and indicated validity by associations with higher life satisfaction and self-esteem. Alpha in this study was 0.82.

#### 2.4.8 Well-being

Well-being was indicated with measures of resilience, flourishing, and happiness (students only). On the 6-item Brief Resilience Scale [40] respondents indicated on a 5-point scale their ability to cope with and recover from stressful situations (1 = strongly disagree - 5 = strongly agree). Examples include "I tend to bounce back quickly after hard times," and "I have a hard time making it through stressful events". Internal consistency ranging from 0.80 - 0.91 has been reported, and was 0.87 in this study. Well-being was also assessed using the 8-item Flourishing Scale [41]. Respondents indicate on a 7-point scale (1 = strongly disagree - 7 = strongly agree) their agreement with items such as "I am engaged and interested in my daily activities," and "I lead a purposeful and meaningful life". Alpha was 0.89. Happiness was measured with the Subjective Happiness Scale [42], a 4-item measure assessing trait happiness. Each item uses a Likert scale from 1-7, and an example item is "In general, I consider myself: " with response options of 1 = Not a very happy person to 7 = A very happy person. Internal consistency between 0.79 and 0.94 has been reported [42] and was 0.85 in this study.

#### 2.4.9 Mental Health

Mental health was assessed as symptoms of anxiety and depression. Anxiety symptoms were measured using the widely-used 7-item Generalized Anxiety Disorder (GAD-7) scale designed to assess probable generalized anxiety disorder [43]. Participants rate statements such as "Feeling nervous, anxious or on edge," and "Worrying too much about different things," on a 4-point scale (0 = not at all to 3 = nearly every day). Adequate reliability, construct and criteria related validity have been reported [43]. Alpha was 0.88 in this study. Depression symptoms were assessed using the 9-item Public Health Questionnaire (PHQ-9), which measures depressive symptom severity [44]. Participants rate statements such as "Feeling down, depressed, or hopeless," and "Little interest or pleasure in doing things," on a 4-point scale (0 = not at all - 3 = nearly every day). Internal consistency has been reported to be 0.86-0.89, and was 0.85 in this study.

#### 2.4.10 Burnout

Burnout was assessed only in staff using the 10-item burnout subscales from the Professional Quality of Life Measure (ProQOL) [45]. Participants rated items assessing feeling overwhelmed, worn out, ineffective and unsupported in their work. Internal consistency of 0.75 has been previously reported, and was 0.71 in the current study.

#### 2.4.11 Advising and Teaching Self-efficacy

Advising and Teaching Self-efficacy was also assessed only in staff and was measured using an adapted versions of the Mindfulness in Teaching Scale (MTS) [46] and the Teacher Efficacy - Short Form (TE-SF) [47]. In the MTS, 14 items were adapted to read “working with students” instead of “teaching” to reflect the broader nature of advisors in campus settings. Participants indicated on a 5-point scale how true statements were (e.g., “I rush through my work with students without being really attentive to them”). In the TE-SF, 12 items were adapted to refer to working with students versus teaching or managing a classroom environment. Participants indicated how effective they felt in supporting students on a 5-point scale to questions such as “How effective are you at helping students value learning?” (1 = Not at all - 5 = very effective). Internal consistency reliability was 0.89.

### **2.5 Analytic Plan**

The study aimed to examine the benefit of Be REAL to both the students and staff participating in the intervention. All data were analyzed using SPSS. First, we examined correlations among potential covariates, pretest variables and missingness. For students, potential covariates that were examined included: sex, race/ethnicity, gender identity, year of entry at the university, prior mental health problems, parent education, first in family to attend college, and whether the participant was an international student. In addition, program related covariates were examined, including the quarter of the academic year that the participant received the program and the number of sessions attended. Second, we tested the potential benefits of Be REAL to students. Regression analyses were conducted to test program effects for students who participated in the intervention compared with those who did not on posttest measures controlling for pretest measures. These analyses examine relative differences in changes from pretest to posttest related to receiving the intervention, and the standardized regression coefficient ( $\beta$ ) provides an estimate of treatment effect size. Repeated-measures ANOVAs were used to examine average levels over time and changes in outcome measures from posttest to follow-up to assess sustained program effects (i.e., no difference between posttest and follow-up) in students who participated in the Be REAL intervention, given that follow-up assessments were not conducted with the comparison group.

To examine potential benefits to staff, regression analyses were conducted to compare staff who participated in the Be REAL intervention to a waitlist group who completed baseline assessments but received the intervention in the following academic quarter. These analyses show the relative benefits to staff of participating in the intervention and  $\beta$  provides an estimate of treatment effect size. Dependent samples t-tests were used to examine the changes in outcomes from pretest to posttest in all staff who participated in the Be REAL intervention, combining the treatment and waitlist groups.

Intent-to-treat analyses were used in which missing posttest or follow-up values were substituted with the available prior value. As a result, all analyses were conducted on the full samples of 325 students and 100 staff who completed pretest assessments. This addresses bias that might be introduced by attrition and retains power for analyses. Benjamini-Hochberg correction for false discovery rate [48] was used to address alpha inflation given multiple comparisons. Reported  $p$ -values are unadjusted, with those remaining significant after correction in bold text.

### **3. Results**

#### **3.1 Student Intervention Effects**

##### 3.1.1 Covariates

Potential psychosocial covariates that were examined included: sex, race/ethnicity, gender identity, year of entry at the university, prior mental health problems, parent education, first in family to attend college, and whether the participant was an international student. Student sex, gender identity, prior mental health problems, and parent education level were related to the pretest levels of the study variables, and were included as covariates in all subsequent analyses. In addition, program related covariates were examined, including the quarter of the academic year that the participant received the program and the number of sessions attended. Neither of these were related to pretest or posttest levels of the study variables, and these were not included in analyses.

##### 3.1.2 Treatment Effects

Student pretest, posttest and follow-up means and standard deviations for no-treatment control and intervention groups are presented in Table 3. Intervention effects were examined using regression analyses in which posttest levels of intervention targets were regressed on pretest levels, covariates (student sex, gender identity, prior mental health problems, parent education level), and a dichotomous variable indicating intervention or control status (Table 4). The intervention was related to significant improvements in mindfulness, self-compassion, flourishing, resilience, happiness, emotion regulation problems, executive control, active coping, social connection, depression and anxiety symptoms. These effects were maintained at follow-up as indicated by no significant difference between posttest and follow up levels (Table 3). The program did not have significant effects on reduced perceptions of stress or use of denial coping.

**Table 3** Student pretest, posttest and follow-up descriptive statistics for no-treatment control and intervention groups.

	No Treatment Control (n = 133)		Intervention (n = 187)			<i>t</i> -test for posttest to follow-up difference	<i>p</i>
	Pretest M(SD)	Posttest M(SD)	Pretest M(SD)	Posttest M(SD)	Follow-up M(SD)		
<b>Reducing Stress</b>							
Mindfulness	3.53(0.75)	3.42(0.82)	3.44(0.81)	3.55(0.84)	3.70(0.84)	4.06	<0.001
Perceptions of Stress	12.39(7.91)	11.32(8.53)	12.00(6.90)	10.30(7.39)	9.87(7.21)	0.58	0.563
<b>Managing Emotions</b>							
Emo Dysregulation	1.82(0.63)	1.77(0.64)	1.84(0.56)	1.67(0.55)	1.64(0.55)	0.91	0.366
Executive Function	3.20(0.82)	3.15(0.82)	3.10(0.71)	3.22(0.74)	3.20(0.74)	0.25	0.801
<b>Coping with Challenging Situations</b>							
Active	1.79(0.54)	1.77(0.59)	1.74(0.56)	1.91(0.52)	1.92(0.55)	0.35	0.731
Denial	0.58(0.72)	0.56(0.73)	0.48(0.63)	0.56(0.71)	0.66(0.80)	1.74	0.084
<b>Building Connections and Compassion</b>							
Social Connection	0.71(0.23)	0.70(0.22)	0.67(0.21)	0.71(0.21)	0.70(0.21)	1.11	0.271
Self-compassion	1.68(0.65)	1.71(0.69)	1.66(0.65)	2.04(0.65)	2.08(0.68)	1.11	0.269
<b>Overall Well-being</b>							
Flourishing	4.26(1.06)	4.24(1.12)	4.24(1.00)	4.51(0.94)	4.55(0.96)	0.33	0.743
Resilience	3.06(0.79)	3.02(0.85)	2.96(0.77)	3.16(0.71)	3.19(0.73)	0.58	0.561
Happiness	3.19(1.28)	3.18(1.31)	3.15(1.31)	3.43(1.19)	3.42(1.22)	0.25	0.802
Depression Sxs	9.87(6.01)	10.36(6.52)	10.15(6.20)	8.67(5.65)	7.79(5.75)	2.36	0.019
Anxiety Sxs	8.47(5.33)	9.30(5.38)	9.43(5.34)	8.20(5.05)	7.49(4.89)	1.83	0.069

M is the mean; SD is the standard deviation

**Table 4** Results of multivariate regressions predicting student mindfulness, coping and well-being outcomes.

	Pretest Outcome			Treatment Effect		
	<i>b</i>	$\beta$	<i>p</i>	<i>b</i>	$\beta$	<i>p</i>
<b>Reducing Stress</b>						
Mindfulness	0.74	0.69	<0.001	<b>0.22</b>	<b>0.13</b>	<b>0.001</b>
Perceptions of Perceived Stress	0.82	0.76	<0.001	-0.95	-0.06	0.103
<b>Managing Emotions</b>						
Emo Dysreg	0.70	0.70	<0.001	<b>-0.13</b>	<b>-0.11</b>	<b>0.006</b>
Exec Function	0.83	0.81	<0.001	<b>0.17</b>	<b>0.11</b>	<b>0.001</b>
<b>Coping with Challenges</b>						
Active	0.74	0.75	<0.001	<b>0.17</b>	<b>0.16</b>	<b>&lt;0.001</b>
Denial	0.64	0.59	<0.001	0.06	0.04	0.357
<b>Building Connections and Compassion</b>						
Soc. Connection	0.81	0.82	<0.001	<b>0.04</b>	<b>0.10</b>	<b>0.003</b>
Self-compassion	0.73	0.70	<0.001	<b>0.34</b>	<b>0.25</b>	<b>&lt;0.001</b>
<b>Overall Well-being</b>						
Flourishing	0.77	0.77	<0.001	<b>0.28</b>	<b>0.14</b>	<b>&lt;0.001</b>
Resilience	0.76	0.76	<0.001	<b>0.23</b>	<b>0.15</b>	<b>&lt;0.001</b>
Happiness	0.72	0.76	<0.001	<b>0.27</b>	<b>0.11</b>	<b>0.005</b>
Depression	0.70	0.70	<0.001	<b>-2.07</b>	<b>-0.17</b>	<b>&lt;0.001</b>
Anxiety	0.64	0.66	<0.001	<b>-1.93</b>	<b>-0.18</b>	<b>&lt;0.001</b>

Bold text indicates significance at  $p < 0.05$  after Benjamini-Hochberg correction. Reported  $p$  values are unadjusted.  $b$  = unstandardized regression coefficients,  $\beta$  = standardized regression coefficients. Analyses conducted controlling for covariates: participant sex, gender identity, prior mental health problems, parent education.

### 3.1.3 Differential Treatment Effects

We explored whether the intervention effects differed by student demographics or identity variables including sex, race/ethnicity, gender identity, prior mental health problems, parent education, first in family to attend college, receipt of financial aid, and whether the participant was an international student. We did so by examining the effects of demographic and identity variables on posttest levels of each outcome controlling for pretest levels and treatment effects. Participant sex, gender identity, prior mental health problems, receipt of financial aid, and being an international student were unrelated to posttest levels. Having a parent with higher education modestly predicted greater increases in posttest levels of executive control ( $\beta = 0.068$ ,  $p = 0.040$ ), social connectedness ( $\beta = 0.075$ ,  $p = 0.021$ ), and greater decreases in depression ( $\beta = -0.095$ ,  $p = 0.018$ ) and anxiety ( $\beta = -0.131$ ,  $p = 0.002$ ). Being the first in a family to attend college was modestly related to greater increases in posttest levels of stress ( $\beta = 0.078$ ,  $p = 0.047$ ). With regard to students' race and ethnicity, students who identified as American Indian/Alaskan Native reported greater increases in posttest levels of flourishing ( $\beta = 0.092$ ,  $p = 0.012$ ) but lower resilience ( $\beta = -0.081$ ,  $p =$

0.026). Students who identified as African American or Black ( $\beta = -0.092$ ,  $p = 0.029$ ) and Asian American ( $\beta = -0.154$ ,  $p = 0.021$ ) reported lower posttest levels of flourishing.

### **3.2 Staff Intervention Effects**

Staff pretest, posttest and follow-up means and standard deviations for WLC and intervention groups are presented in Table 5. In regression analyses examining the treatment vs WLC effects on posttest measures, controlling for pretest levels, there were significant improvements in staff self-efficacy, self-compassion, active coping, denial coping, resilience, burnout, and anxiety. However, none of these effects remained significant after the correction for multiple tests (Table 6). Non-significant differences from posttest to follow-up indicated that treatment effects were maintained at 3-months (Table 5). Intervention and WLC participants were combined to examine pretest to posttest change for all staff who participated in Be REAL. Dependent-sample paired t-test analyses showed that there were significant improvements in self-efficacy, self-compassion, perceptions of stress, executive function, active coping, flourishing, resilience, burnout, anxiety, and depression, after correction for alpha inflation (Table 7). There were no significant differences from pre- to posttest on emotion dysregulation or denial coping.

**Table 5** Staff pretest, posttest and follow-up descriptive statistics for waitlist control and intervention groups.

	Waitlist Control (n = 32)		Intervention (n = 68)		Follow-up M(SD)	<i>t</i> -test for posttest to follow-up difference	<i>p</i>
	Pretest M(SD)	Posttest M(SD)	Pretest M(SD)	Posttest M(SD)			
<b>Advising/Teaching</b>							
Self-efficacy	3.33(0.58)	3.35(0.51)	3.51(0.50)	3.71(0.57)	3.74(0.54)	0.59	0.557
<b>Reducing Stress</b>							
Mindful							
Self-compassion	2.14(0.80)	2.08(0.72)	2.05(0.74)	2.26(0.71)	2.27(0.79)	0.41	0.681
Perceptions of Stress	1.76(0.50)	1.81(0.52)	1.93(0.73)	1.81(0.63)	1.80(0.66)	0.09	0.931
<b>Managing Emotions</b>							
Emo Dysregulation	1.26(0.42)	1.34(0.40)	1.43(0.47)	1.36(0.40)	1.34(0.44)	1.37	0.177
Executive Function	3.51(0.65)	3.45(0.61)	3.39(0.71)	3.47(0.64)	3.45(0.70)	1.39	0.171
<b>Coping with Challenging Situations</b>							
Active	1.90(0.48)	1.93(0.47)	1.92(0.46)	2.08(0.47)	2.10(0.52)	0.39	0.698
Denial	0.26(0.41)	0.31(0.49)	0.18(0.33)	0.12(0.26)	0.13(0.30)	0.38	0.709
<b>Overall Well-being</b>							
Flourishing	3.89(0.64)	3.88(0.63)	3.81(0.77)	3.96(0.89)	3.99(0.86)	0.42	0.679
Resilience	3.55(0.66)	3.47(0.66)	3.22(0.85)	3.43(0.75)	3.45(0.79)	0.27	0.789
Burnout	2.48(0.46)	2.44(0.51)	2.49(0.52)	2.34(0.55)	2.35(0.55)	0.32	0.750
Depression Sxs	6.52(4.59)	6.35(3.80)	7.40(5.66)	6.28(5.11)	6.38(4.87)	0.66	0.512
Anxiety Sxs	6.97(4.69)	7.90(5.05)	7.65(5.21)	6.35(4.61)	6.92(4.91)	1.37	0.177

M is the mean; SD is the standard deviation.



**Table 6** Results of multivariate regressions predicting staff mindfulness, coping and well-being outcomes comparing treatment with waitlist-control.

	Pretest Outcome			Treatment Effect Treatment vs. WLC		
	<i>b</i>	$\beta$	<i>p</i>	<i>b</i>	$\beta$	<i>p</i>
<b>Advising/Teaching</b>						
Self-efficacy	0.85	0.78	<0.001	<b>0.21</b>	<b>0.18</b>	<b>0.003</b>
<b>Reducing Stress</b>						
Mindful						
Self-compassion	0.68*	0.71	<0.001	0.25	0.18	0.043
Perceptions of Stress	0.55*	0.64	<0.001	-0.16	-0.13	0.175
<b>Managing Emotions</b>						
Emo Dysregulation	0.58*	0.69	<0.001	-0.11	-0.13	0.144
Exec Function	0.67*	0.70	<0.001	0.14	0.11	0.193
<b>Coping with Challenges</b>						
Active	0.63*	0.61	<0.001	0.13	0.16	0.030
Denial	0.44*	0.43	<0.001	-0.18	-0.24	0.026
<b>Overall Well-being</b>						
Flourishing	0.92*	0.81	<0.001	0.20	0.11	0.113
Resilience	0.64*	0.73	<0.001	0.23	0.15	0.046
Burnout	0.86*	0.78	<0.001	-0.14	-0.13	0.047
Depression	0.61*	0.71	<0.001	-0.85	-0.09	0.295
Anxiety	0.59*	0.62	<0.001	<b>-2.52</b>	<b>-0.25</b>	<b>0.008</b>

Bold text indicates significance at  $p < 0.05$  after Benjamini-Hochberg correction. Reported  $p$  values are unadjusted.  $b$  = unstandardized regression coefficients,  $\beta$  = standardized regression coefficients.

**Table 7** Dependent sample t-test for staff pretest to posttest change for intervention and waitlist groups combined.

	Pretest M(SD)	Posttest M(SD)	<i>t</i> -test ( <i>df</i> = 86)	<i>P</i>
<b>Advising/Teaching</b>				
Self-efficacy	3.49(0.48)	3.69(0.56)	<b>5.76</b>	<b>&lt;0.001</b>
<b>Reducing Stress</b>				
Mindful				
Self-compassion	2.05(0.72)	2.22(0.70)	<b>3.60</b>	<b>0.001</b>
Perceptions of Stress	1.90(0.67)	1.76(0.63)	<b>2.65</b>	<b>0.009</b>
<b>Managing Emotions</b>				
Emo Dysregulation	1.39(0.45)	1.34(0.39)	1.99	0.049
Executive Function	3.41(0.64)	3.49(0.67)	<b>2.16</b>	<b>0.034</b>
<b>Coping with Challenging Situations</b>				
Active	1.92(0.44)	2.10(0.43)	<b>4.96</b>	<b>&lt;0.001</b>
Denial	0.22(0.39)	0.18(0.39)	1.65	0.103

<b>Overall Well-being</b>				
Flourishing	3.83(0.73)	4.00(0.81)	<b>3.58</b>	<b>0.001</b>
Resilience	3.29(0.80)	3.49(0.76)	<b>3.70</b>	<b>&lt;0.001</b>
Burnout	2.46(0.51)	2.33(0.53)	<b>4.21</b>	<b>&lt;0.001</b>
Depression Sxs	7.17(5.18)	6.04(4.78)	<b>3.49</b>	<b>0.001</b>
Anxiety Sxs	7.94(5.15)	6.75(4.97)	<b>3.02</b>	<b>0.003</b>

M is the mean; SD is the standard deviation. Bolded values are significant at  $p < 0.05$  after Benjamini-Hochberg correction. Reported  $p$  values are unadjusted.

### **3.3 Student Feasibility and Acceptability**

To assess feasibility and acceptability of the online program, we analyzed student attendance and feedback. Of the research participants who self-reported attendance, 64% of students attended all 6 sessions, with 89% attending 4 or more sessions. In between sessions, facilitators shared PDFs summarizing content and digital newsletters with links to online practices so students had an opportunity to review and practice missed content and skills. After the final Be REAL session, students ( $n = 177$ ) completed online feedback surveys. More than 92% of students strongly agreed or agreed that Be REAL helped them learn skills for the four program targets (reducing stress, managing emotions, coping, building connections and compassion). Students expressed satisfaction with the online version with 78% agreeing or strongly agreeing that it allowed them to develop a sense of connection with facilitators and participants, and 94% indicating they felt comfortable doing mindfulness practices online. Students indicated that a variety of online teaching features were useful, with high ratings for using breakout rooms for small group discussions, and a group chat box. There were also six open-ended questions, such as “Please give examples of the practices you use and how they have changed how you respond to daily life” and “What did you like the most about the program”. Student reflections include. These consistently reflected that students were able to identify practices they learned that were beneficial to them. Additionally, several participants noted that they appreciated the diversity and range of practices offered so that they could explore what best supported them. Some sample comments included: “I liked that it gave me so many ways that I can cope with stress,”; “I use the breathing exercises to help focus me when I’m feeling overwhelmed,”; “I’ve been using radical acceptance and acknowledgement to better handle my emotions. Before using these techniques, I was having extremely bad anxiety.”; and “...my favorite part of the program was getting introduced and re-introduced into different short physical exercises that can activate the parasympathetic system. It’s surprising how much relief can come from such short and simple exercises.”

### **3.4 Staff Feasibility and Acceptability**

Self-reported attendance and feedback was also collected from staff; 64% attended all 6 sessions, with 100% attending 4 or more sessions. 108 staff participants provided feedback, with 99% agreeing or strongly agreeing that the information presented was useful. More than 95% of staff strongly agreed or agreed that Be REAL helped them learn skills for program targets. Staff responded to the online related questions, with 70% agreeing or strongly agreeing that the online format allowed them to develop a sense of connection with others, and 88% feeling comfortable doing mindfulness practices online. One theme emerging from responses to open ended questions was

how the practices support them in their work. Staff noted, “Investigating my emotions and mindful listening is something I strive to do every day now. Working on myself allows me to be more present and helpful with people in my personal and work life,” and “I use cognitive reframing to always assume the best intentions in other people, and in the process I don’t get as frustrated and have more empathy.” Staff also shared the practices supported their self-regulation skills, commenting “I have a lot more compassion for myself. I accept my emotions and I categorize my thoughts,” and “The emotions sessions were really helpful to me. I also really, really appreciated the repetition of the point of being present, pausing, giving space.” Staff also commented that the facilitators’ inclusivity and reminders about the diversity participants’ experiences was supportive.

### **3.5 Task Sharing Feasibility and Acceptability**

We assessed the feasibility and acceptability of the task-sharing model through feedback from the Be REAL Facilitator Training and reflection surveys from staff after they led a group. From 29 staff who completed feedback surveys, on a five-point scale from strongly agree to strongly disagree, 76% of staff strongly agreed and 24% agreed the Facilitator Training helped them better understand the program flow and format; 45% strongly agreed and 55% agreed that it helped them learn new or more effective ways to engage students in discussions about well-being practices and skills. In open ended questions, numerous staff noted the benefits of the scripted manual, the flexibility to adapt elements of the program to be responsive to their students, practice teaching with one another, and the multitude and variety of program materials and resources (PowerPoint slides, a website for ongoing training, handouts, and audio recordings). As one participant shared, “Leading the mindfulness exercises with the more experienced facilitators observing [us] was really helpful. Hearing examples and personal stories from [the facilitators] about their experiences leading groups was also great.”

In post-group reflections among the 8 staff members who led Be REAL, 6 shared that facilitating did not add excessive work to their day while 2 expressed that it did increase their workload. In open ended questions on what support would be helpful in facilitating the program, staff indicated that having more prepared digital materials in advance of their groups and support from their supervisors in balancing responsibilities could reduce the added workload. Staff also expressed personal and professional satisfaction with facilitating Be REAL, with a theme of how the program allowed them to connect more effectively with students. In their reflections, staff noted, “Facilitating Be REAL has allowed me to connect with students outside of my department,” “I am able to connect with my students more as well as give them an opportunity to connect with students outside of our department.,” and “Be REAL continues to allow me to connect with students I otherwise wouldn’t and...[is] a good reminder to practice what I preach and be more mindful with my own self-care.”

## **4. Discussion**

This study demonstrated that an online mindfulness-based cognitive-behavioral coping enhancement program, Be REAL, can improve the well-being and mental health of college students and staff. It further demonstrated feasibility, acceptability, and effectiveness through a task-sharing model whereby campus staff facilitated the groups. The two-pronged approach to supporting staff and student well-being was intentional so that the task-sharing model did not exacerbate burnout

among staff. This study builds on two previous evaluations demonstrating Be REAL significantly improved student well-being and mental health when offered in-person.

The first aim was to evaluate the extent to which an online version of Be REAL holds promise for improving the mental health and well-being of undergraduate college students. Our evaluation compared the benefits to students participating in Be REAL online with students in an assessment-only group. The results demonstrate program-related benefits to students across all domains assessed. Specifically, participating in Be REAL was related to significant improvements in mindfulness, self-compassion, flourishing, resilience, happiness, emotion regulation problems, executive control, active coping, social connection, depression and anxiety symptoms. Further, these benefits were maintained in a 3-month follow-up. However, unlike previous research on Be REAL [29], there were no significant improvements to perceptions of stress or denial coping. One hypothesis is that there were more stressful events happening during this time given the COVID19 pandemic, so their perceptions of stress might have been based on a higher number of stressors. Students were highly satisfied with the online program and indicated that it enabled them to connect with students and facilitators and that they felt comfortable engaging remotely. It may be important to consider that students were already taking college classes remotely while this study was conducted. Thus, some students may have different preferences for online programs as they return to campus. Overall, the program benefits, high rates of attendance, and positive feedback indicate that online well-being promotion programs indeed hold promise for supporting students. While other effective programs exist [19], few if any prior programs have used a task-sharing model for implementation. The effective implementation by campus staff together with the combination of mindfulness and cognitive behavioral content offers a unique and promising approach to addressing college student mental health.

The second aim was to assess the effectiveness and feasibility of a task-sharing model in expanding online prevention programs for students. This study replicated previous findings that Be REAL being offered by campus staff can significantly improve student well-being and mental health. Feedback from the Be REAL facilitator training program indicated the task-sharing model is feasible and acceptable to staff. As previously noted, the benefit and effectiveness of a task-sharing model is that it is relatively low cost and it can increase the acceptability of mental health programming [13]. After staff were trained to deliver Be REAL, there were no ongoing costs since they integrated the program into existing programming efforts for students. The only exception was compensation for an instructor to lead Be REAL as a general studies course. Further, most staff indicated that facilitating Be REAL was professionally satisfying and did not increase their workload. However, some staff did state it increased their workload, affirming that consideration must be given to existing responsibilities. Overall, our findings indicate that a task-sharing model, training staff to deliver prevention interventions to students across diverse campus settings, is a model for increasing accessibility and feasibility of preventive mental health programs.

In considering the first two study aims, it is useful to examine the results relative to the findings of our previous studies. In the first study that included a waitlist control comparison group, the program was delivered by study staff with experience as mindfulness instructors as opposed to university staff [28]. The effect sizes were modest to moderate in size, suggesting that somewhat larger effects might have been obtained when the program was delivered by mindfulness instructors. In the second study, the program was delivered by university staff, however, the study did not include a comparison group, but rather only examined pretest/posttest differences [28]. In

that study, treatment effect sizes were also modest to moderate. Thus, the treatment effects in the current study were somewhat more modest in size compared to our prior study, suggesting that the task-sharing approach might lead to some decrement in treatment effectiveness despite comparable improvements in terms of significant effects. This suggests that enhancements to staff training might be needed.

The third aim was to assess whether Be REAL could also improve the mental health and well-being of university staff, potentially supporting their work with students. There were few significant intervention effects when comparing intervention and WLC participants and after correction for alpha inflation, potentially due to the relatively small sample size. When the intervention and WLC staff participants were combined, results indicate there were significant pretest to posttest improvements in self-efficacy, self-compassion, perceptions of stress, executive function, active coping, flourishing, resilience, burnout, anxiety, and depression, with no significant differences in emotion dysregulation or denial coping. The online version of Be REAL demonstrated high acceptability and feasibility among staff, with excellent rates of attendance and satisfaction.

Staff reported increased self-efficacy and anecdotally shared that participation in Be REAL has improved their individual work with students and colleagues. As one academic advisor shared, “Be REAL has changed how I approach advising, how I have compassion for self and students. I also really liked that this helped build community among staff.” Staff have also reflected that participation in Be REAL is contributing to a cultural shift in their units and departments toward greater well-being. For example, in teams where multiple staff participated in Be REAL, they have shared that the program has given them a common language for discussing stress, coping with challenges, and offering support to one another. As one staff member reflected after integrating Be REAL practices into their team, “It has made us a more open team about our mental health and needs and allowed folks to step in for others with kindness when they need a break.” Furthermore, although not a formal part of Be REAL, staff members self-organized a community of practice to stay connected to each other and the program material. During this monthly meet-up, they alternate facilitating practices, leading a discussion centered on a theme from Be REAL, and sharing facilitation tips.

These findings indicate that a task-sharing model, particularly one that centers staff well-being, is a viable approach to promoting student well-being. The value of investing in staff well-being as a means to support students is not a new idea. Similar conclusions have been made in the social and emotional movement within the K-12 system - that supporting the social and emotional mindsets of the teachers, administrators, and leadership in the schoolhouse is necessary to enhancing the social and emotional well-being of students [49]. Overall, equipping staff with skills and mindsets to cope with stress effectively, supporting their mental health and well-being overall, and contributing to their professional development makes way for developing a culture of well-being on college campuses for all.

#### **4.1 Effectiveness of Online Delivery**

Be REAL was developed to be delivered in person, but was adapted for online delivery during the COVID19 pandemic. It is useful to note some of the adaptations that contributed to effectiveness and satisfaction equivalent to the in-person program. Adaptations included slightly shortening the psychoeducational components to give participants more discussion time, use of breakout rooms to build personal connections, and camera-use options. In addition, in bi-weekly group check-in

meetings, staff expressed being attentive to student needs that came up through the COVID19 pandemic. For example, some facilitators invited students to post their reflections anonymously on shared documents prior to group discussions. Other strategies included having more breakout sessions for small group discussions and then inviting students to report back to the larger group about themes and offering small movement or standing breaks.

#### **4.2 Limitations and Future Directions**

This study expanded previous research on Be REAL to assess the program's impact when delivered online. Despite the contributions to research on scalable models to promote mental health among college students, there are still several limitations. First, it was not feasible to randomize participants due to the implementation nature of the program and study. Second, there were modest rates of participation in the study by students and staff enrolled in the program. One contributing factor to low study enrollment may have been the COVID19 pandemic, which decreased engagement in clinical trials in the U.S. by 38% during the first few months of the pandemic [50]. Another factor contributing to low rates of participation might have been the length of the assessments, which took participants 20-30 minutes to complete, despite participants being compensated for completing them. Third, assessments were self-report and future studies could measure biological or clinical changes, as well as benefits to student academic achievement. Studies focusing on campus staff could assess their integration of program practices and concepts into teaching, advising, and mentoring. Fourth, the treatment effect sizes were modest in magnitude. Finally, while assessing the broader impact of Be REAL was beyond the scope of this study, such research could contribute to understanding how to effectively cultivate a campus culture of well-being and positive mental health.

#### **5. Conclusions**

College campuses have been seeing increases in student mental health concerns for the last few years, and these were exacerbated by the COVID19 pandemic. These concerns arose not only for students but also for campus staff. These increases came at a time when campus mental health resources were already stretched. Colleges are therefore tasked with promoting well-being through a variety of mediums, such as counseling, group programs, or courses, and formats including in-person and online. This study underscores that online prevention programs can significantly improve the well-being and mental health of college students and staff. Given that the program evaluated, Be REAL, has also been found to be effective in supporting student well-being when offered in-person, it presents campuses with a variety of formats to offer students as well as an ability to quickly pivot online if needed for future public health emergencies. Finally, this study expands discussions and research on how colleges can broaden programming to create community and connection among students and staff, whereby everyone on campus is thriving.

#### **Author Contributions**

RL and LL were co-principal investigators, developed the intervention, designed the study and were lead authors on the manuscript. MK led campus outreach to recruit staff and students, facilitated staff groups, and contributed to the manuscript. RL, LL, and MK co-led the staff facilitator

trainings. LL conducted the majority of the analyses. KM participated in student and staff recruitment, contributed to the analyses, and the manuscript.

### Competing Interests

The authors have declared that no competing interests exist.

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