A Mindfulness-Based Intervention for University Students: A Feasibility Study

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ABSTRACT

Background: Koru is a 4-week group mindfulness-based intervention that previously demonstrated psychological benefits in university students through its offering via a counseling center (Greeson, Juberg, Mayatan, James, & Rogers, 2014).

Aim: This study examined the feasibility of Koru offered universally to students via collaborative outreach (i.e., student interest, attendance, adverse events, participant acceptability, and participant willingness to complete assessments).

Method: Across five semesters, Koru was advertised via flyers, emails to student organizations and faculty and staff, and counseling center referrals at a southeastern public university with 29,000-students. Interested students were randomly assigned to Koru or a waitlist. In-person Koru groups took place in classrooms on campus. Assessments included practice logs, program evaluations, and pre- and post-intervention surveys measuring mindfulness and psychological symptoms.

Results: Interest was sufficient to offer 2-3 groups per semester (171 students). Of those assigned to Koru, 44.4% completed 3-4 sessions and 34.9% did not attend any sessions. The adverse event rate was 2.9%. Evaluations were positive and all participants attending the last session completed them. The response rate was 29.0% for log completion and 17.9% for survey completion.

Conclusion: Results support student interest in, and acceptability of Koru offered to all students on campus outside of a counseling center. Data collection was challenging.

INTRODUCTION

College is a period of increased vulnerability for mental health challenges. Most college students in national studies reported above average to tremendous stress levels, which increased up to and during the pandemic (American College Health Association, 2019; Son, Hegde, Smith, Wang, & Sasangohar, 2020). High stress increases the risk for mental health problems (Liu, Stevens, Wong, Yasui, & Chen, 2019), which is greatest during the college years for common mental disorders (Jones, 2013). Depression and anxiety are the most prominent mental health problems in college students, which both increased up to and during the pandemic (Center for Collegiate Mental Health [CCMH], 2019; Son et al., 2020).

Rising rates of mental health problems correspond to a 30-40% increase in counseling center utilization not accounted for by enrollment increases (Xiao et al., 2017), indicating an overload of counseling center capacity to meet student mental health needs. As a result, students may experience waitlists and session limits (CCMH, 2016). Also, many students experiencing distress do not seek mental health services (Cunningham et al., 2017), primarily due to attitudinal barriers reflecting stigma-related concerns and perceptions that treatment is unnecessary (Ennis et al., 2019). These students may be more likely to seek help through alternate services such as stress management, where they can learn how to manage distress outside the counseling center (Cunningham et al., 2017). Thus, it is challenging for universities and colleges to determine how to use available resources to address student mental health needs.

Mindfulness-based interventions (MBIs) may be an attractive option for addressing these issues. Research supports the safety and psychological benefits of MBIs in college students, including reductions in the most experienced mental health issues of stress, depression, and anxiety (Dawson et al., 2019). Mindfulness has become part of popular culture, making MBIs less stigmatizing and an attractive alternative service some students may be more amenable to (Byrne, Bond, & London, 2013). MBIs are commonly implemented in a group format, requiring fewer resources. They can be offered via different venues independently or collaboratively, such as counseling centers, mental health training clinics, and college courses. In addition, MBIs can be offered as a stepped-care model component, adjunct to mental health services, an alternative for those not willing to seek mental health services, or as part of broader mental health promotion and mental illness prevention programming (Cunningham et al., 2017).

Some college and universities are integrating a public health approach to addressing mental health needs (Parcover, Mays, & McCarthy, 2015) and MBIs fit well with this approach. A public health approach complements traditional mental health services for students with diagnosable mental disorders by including promotion and prevention programming for all students (i.e., universal prevention), students at risk for mental health problems (i.e., selective prevention), and those experiencing mental health problems not severe or prolonged enough to meet diagnostic criteria (i.e., indicated prevention; Mrazek & Haggerty, 1994). Such an approach may reach a greater percentage of students in need, prevent the development of mental health problems, promote positive mental health, lessen mental illness stigma, and normalize help-seeking (Parcover et al., 2015).

An increasing number of colleges and universities are offering MBIs to address student mental health concerns (Dawson et al., 2019). While there are varying definitions of mindfulness, it is commonly conceptualized as bringing one's complete attention to experiences occurring in the present moment, in a nonjudgmental way (Bishop et al., 2004). This entails remaining present with one's bodily sensations, thoughts, feelings, whether pleasant, neutral, or unpleasant, with an accepting stance. MBIs help individuals develop their innate ability to cultivate mindfulness in an experiential way by practicing various kinds of mindfulness meditation. Most practices combine a focus on an object

such as the breath or sensations, with simultaneous awareness of other phenomena. Additionally, many MBIs include home practice and a didactic component whereby facilitators help participants gain insight from their practice experiences using various mindfulness principles (e.g., such as impermanence and acceptance stemming from Buddhist teachings; Levine, 2009).

In a recent meta-analysis of MBIs with college students, the most common MBI duration was eight weeks; however, duration did not significantly influence results (Dawson et al., 2019). An 8-week commitment can be a participation deterrent due to time, economic, job, or school constraints. There are briefer MBIs, requiring less time to participate and fewer resources to implement, including a few developed specifically for college students. One such MBI called Koru was developed by two psychiatrists who, through years of experience teaching mindfulness to university students, systematically identified key elements to an effective MBI for this population. They integrated these elements into the standardized 4-week in-person group MBI called Koru, including organizational factors (e.g., number and length of sessions), teaching factors (e.g., active teaching style), and student factors (e.g., use of conventional language; Rogers, 2013). In addition to the MBI components mentioned previously, Koru includes several mind and body practices designed to aid in more immediate stress reduction and assigned readings to enable a deeper understanding of mindfulness and its applicability to daily life. To aid in establishing and maintaining the quality of Koru facilitation, there is a Koru teacher certification process and facilitator manual. In a randomized controlled trial, Koru offered through a university counseling center resulted in significantly greater reductions in stress and sleep problems and increases in mindfulness and self-compassion in Koru participants compared to a waitlist control group (Greeson, Juberg, Maytan, James, & Rogers, 2014).

MBIs with college students have been shown to be safe and beneficial (Dawson et al., 2019). Offering MBIs utilizing a universal prevention approach has a number of potential benefits, including reaching a greater percentage of students in need (Parcover et al., 2015). Koru is a standardized brief MBI developed for college students that has demonstrated benefits when offered via a university counseling center (Greeson et al., 2014). The purpose of the current study was to determine the feasibility of implementing and collecting data pertaining to the Koru MBI offered universally outside of a counseling center as part of collaborative university outreach. Specifically, the following aspects were examined: student interest in, attendance in, and acceptability of Koru, the potential for adverse events, and student willingness to complete home practice logs, program evaluations, and pre- and post-intervention surveys. If shown to be feasible, this would provide support for continuing research in this area to examine the efficacy of Koru offered universally via collaborative outreach efforts.

METHODS

Study Design & Procedures

This study employed an experimental research design embedded within a universal prevention offering of Koru to university students from spring 2017 through spring 2019 semesters. This offering was a collaborative effort between the university's clinical health psychology doctoral program and counseling center. Interested students completed an online screening assessing eligibility and availability for Koru offerings. Eligible students were randomly assigned to Koru or a waitlist control group (invited to participate in future Koru offerings). To help ensure that a sufficient number of students showed up for the Koru group, students randomized to Koru were asked to confirm their

intention to participate in the group when emailed an invitation. If they did not confirm, another student was invited. Koru participants were asked to complete a daily home practice log and anonymous evaluation at the end of the last session. Participants were emailed requests to complete online surveys within one week before and after the MBI. They provided informed consent electronically prior to the pre-survey. Koru participation was not contingent on completing surveys, as the primary interest was to provide a supportive service to students universally regardless of their willingness to participate in research. Gift cards were provided for survey completion during several semesters ($5-15 per survey when funding was available). The university Institutional Review Board approved the study, including a waiver of parental consent to enable participation of students aged 17, and a waiver of signed consent to enable online participation in survey completion.

Participants

Koru was advertised to students at a southeastern public university via campus flyers, emails to student organizations reflecting diversity, advisors, program directors, a faculty and staff listserv, and counseling center referrals. Eligibility criteria included being at least 17 years of age and a student at the university.

MBI

The MBI adhered to the Koru Mindfulness for Emerging Adults curriculum outlined in the manual, "Mindfulness for the Next Generation" (Rogers & Maytan, 2012). It is a 4-week group-based program meeting once per week for 75 minutes along with: (1) weekly readings from "The Mindful Twenty-Something" book (Rogers, 2016), (2) 10-minutes of recommended at-home daily meditation practice, which could be facilitated with guided meditations on the Koru website or Koru app, and (3) practice log completion on hard copies or via the Koru app. Group meetings consist of practicing and processing 2-3 mindfulness practices (e.g., body scan, walking meditation) and mind-body skills (e.g., diaphragmatic breathing, guided imagery), mindfulness teaching points, check-ins, and problem-solving obstacles to home practice. Groups were capped at 12 participants and held in small classrooms on campus. Students were able to borrow a book from the facilitators or access it electronically via the university library. Each group was co-facilitated. The primary facilitator of each group was a certified Koru teacher and faculty member of the clinical health psychology doctoral program. Secondary facilitators were provided brief training by the primary facilitator and included counseling center counselors and clinical health psychology doctoral students. Facilitators monitored for adverse events during sessions, through email communication, and review of practice logs and evaluations.

Measures

The Koru home practice logs and evaluation forms are standardized forms provided in the manual (Rogers & Maytan, 2012). The practice log assessed meditation type, duration, date, time, and reflections. In addition, the log assessed an everyday activity they planned to do that day with full awareness, and two things they were grateful for. The Koru evaluation form included open-ended items about the most meaningful part of Koru, what they would do differently in their life as a result of Koru, and if there was anything they would change about Koru. Practices taught were rated on a scale from 1 (*Not a fan*) to 5 (*Loved it*), and respondents indicated if they would recommend Koru to other students. The form also included space to provide feedback about other aspects of Koru (e.g., class discussion, the

book, home practice, etc.). Pre- and post-surveys included the same psychometrically sound measures: the Perceived Stress Scale (PSS; Cohen & Williamson, 1988); the Patient Health Questionnaire - 9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001); the Generalized Anxiety Disorder Scale – 7 (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006); and the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006).

Data Analysis

Data analyses were performed using IBM SPSS version 24. Interest in Koru was determined by number of students who completed online screening. Koru attendance was determined by rates of completion (percent who attended all four sessions) and dropout (percent who missed the last two sessions). The percentage of Koru participants who had an adverse event was calculated. Student willingness to provide data was determined by percent of Koru participants who completed practice logs and evaluations, and survey response rate for participants completing pre- and post-intervention surveys.

Student acceptability of Koru was determined through analysis of evaluation data. Categories were derived from responses to open-ended questions using content analysis, a systematic procedure to determine the presence of certain words or concepts within texts and subsequent assignment of categories to those sections of text, which enables the researcher to analyze frequencies of categories quantitatively (Stemler, 2001). The lead researcher reviewed responses to identify categories, created a codebook with category names and descriptions, and coded for the presence of categories in each participant's responses. Another research team member used the codebook to code responses, and no discrepancies occurred between the researchers' codings. Percentages of participants whose responses reflected each category, percent who would recommend Koru, and means for ratings of practices taught were calculated.

RESULTS

Interest in Koru Offerings

Nine Koru groups were offered across five semesters, with 1-2 groups per semester and 5-11 participants per group. Figure 1 is a flow diagram of progress through the phases of recruitment, intervention allocation, and attendance. Of the individuals who indicated interest in Koru, all but five were eligible ($n = 171$, 97.2%), resulting in about 34 interested students per semester. Faculty and staff applicants were excluded. The majority were female (80.5%) and White (67.5%), with 20.1% identifying as Black, 4.5% multi-racial, 3.9% Asian, and 3.9% Latinx. Ages ranged from 18-63 years, with 52.5% undergraduate and 47.5% graduate students. This sample was over-representative of women and graduate students compared to the student population. The most common ways students heard about Koru were from faculty and staff (38.6%) and flyers posted on campus (24.4%), with 5.8% indicating a referral from the counseling center.

Figure 1. Recruitment, Allocation, and Attendance Flow Diagram

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┌──────────────┐                    ┌─────────────────────────────────────┐
│   Interest   │                    │  Assessed for eligibility (n=176)   │
└──────────────┘                    └─────────────────────────────────────┘
                                                      │
                                                      │      ┌──────────────────────────────┐
                                                      ├─────▶│ Excluded (n=5)               │
                                                      │      │  • Did not meet inclusion     │
                                                      │      │    criteria                   │
                                                      │      └──────────────────────────────┘
                                                      ▼
                                        ┌─────────────────────────────┐
                                        │     Randomized (n=171)      │
                                        └─────────────────────────────┘
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                                 ┌────────────────────┴────────────────────┐
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┌──────────────┐   ┌─────────────────────────────┐   ┌─────────────────────────────────┐
│  Allocation  │   │  Allocated to Koru (n=106)  │   │ Allocated to waitlist (n=65)    │
└──────────────┘   └─────────────────────────────┘   └─────────────────────────────────┘
                                 │
┌──────────────┐   ┌─────────────────────────────┐
│  Attendance  │   │  4 sessions (n=25)          │
└──────────────┘   │  3 sessions (n=22)          │
                   │  2 sessions (n=11)          │
                   │  1 session (n=11)           │
                   │  No sessions (n=37)         │
                   └─────────────────────────────┘
                                 │
                   ┌─────────────────────────────┐
                   │  Dropped out (n=22)         │
                   └─────────────────────────────┘
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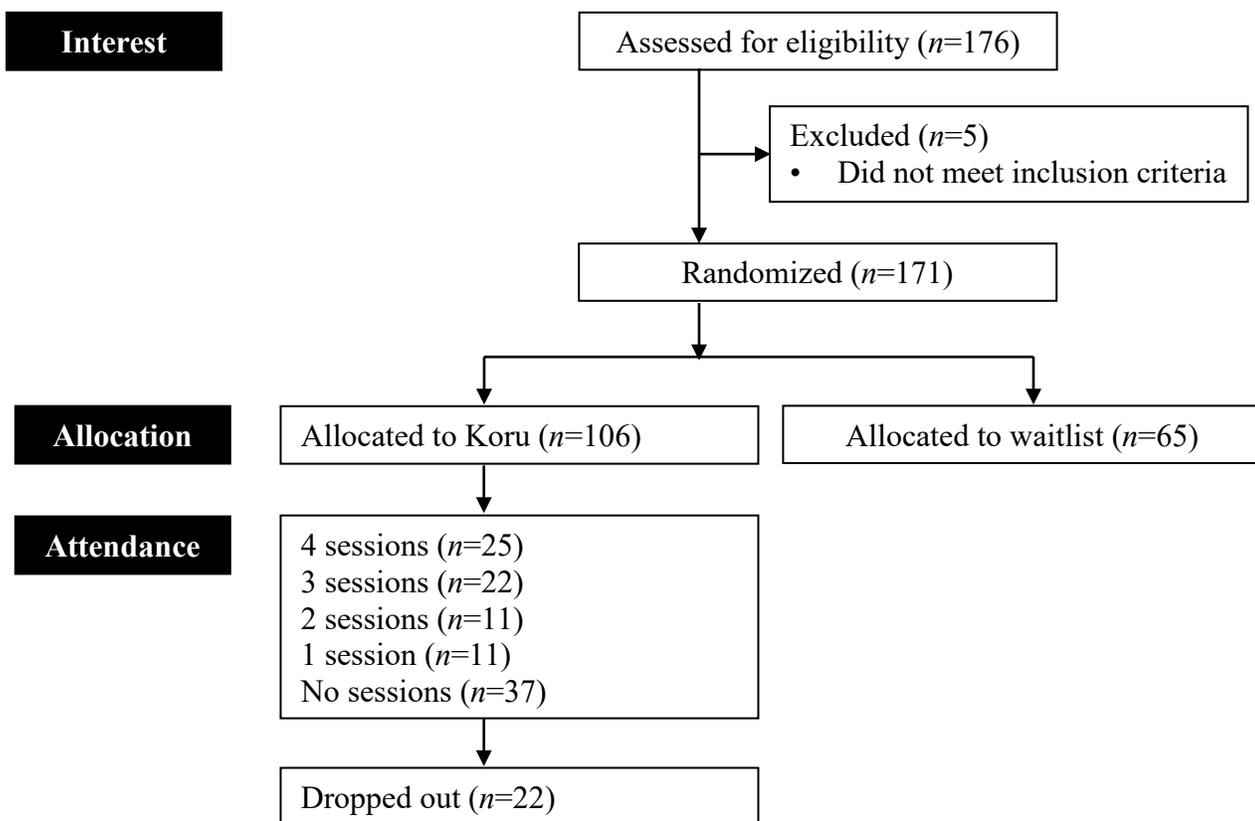
Koru Attendance

Random assignment of students was uneven, resulting in 62.0% in the Koru group and 38.0% in the waitlist group (Figure 1). This was attributed to an oversight in randomization implementation that occurred as a result of the step involving Koru invitees confirming their intention to attend. Of those invited to participate in Koru, 80.2% confirmed their intention to attend, 23.6% completed Koru (i.e., attended all four sessions), 20.8% attended three sessions, 10.4% attended two sessions, 10.4% attended one session, and 34.9% did not attend any sessions (15.1% of which had confirmed). Of those attending at least one Koru session ($n = 69$, 81.2%), the average attendance was 2.86 sessions and 31.9% dropped out (missed the last two sessions).

There were no significant demographic differences between those who attended at least once and those who did not. Of the 65.1% who attended at least once, the majority were female (79.7%), White (62.3%), and graduate students (52.2%). Graduate students had significantly greater attendance ($M = 3.19$ sessions) than undergraduate students ($M = 2.53$), $t(64) = 2.61$, $p = .01$. Attendance did not differ by gender or race/ethnicity.

Koru Adverse Event Rate

Two participants (2.9%) verbally shared with facilitators that they had an adverse event during the guided imagery practice. They were each followed up with to discuss their experience and provide support. No reports of adverse events were made via email, logs, or evaluations.

Koru Acceptability

Analyses of evaluations (n = 34) showed 100% of Koru participants would recommend Koru to other students. Table 1 displays ratings and descriptions of the mind/body and meditation practices taught. On average, all practices were rated positively. The two calming mind/body practices were rated the highest followed by the labeling meditation, all of which had neutral to positive ratings. Some negative ratings were made for the other meditation practices and the energizing mind/body practice (which was rated the lowest).

Table 1. *Ratings and Descriptions of Practices Taught in Koru*

Practice	M	SD	Min	Max	Description
Guided imagery	4.7	0.5	3	5	Mind/body exercise: using all senses while imagining being in a comfortable and safe place.
Belly breathing	4.5	0.7	3	5	Mind/body exercise: breathing deeply, engaging the diaphragm while inhaling.
Labeling meditation	4.3	0.7	3	5	Mindfulness meditation: noticing and labeling thoughts and feelings.
Eating meditation	4.2	0.9	2	5	Mindfulness meditation: focusing on sensations involved in eating.
Body scan meditation	4.1	1.3	1	5	Mindfulness meditation: focusing on physical sensations in the body.
Gatha meditation	3.8	1.4	1	5	Mindfulness meditation: focusing on a gatha (series of words) and linking it to the breath.
Walking meditation	3.6	1.2	1	5	Mindfulness meditation: focusing on sensations in the feet and body while walking slowly.
Dynamic breathing	3.5	1.1	1	5	Mind/body exercise: combines deep breathing that engages the diaphragm with body movements to energize the body.

The most common categories of responses to open-ended evaluation items are shown in Table 2. All participants described a part of Koru they found meaningful and a positive change they would make in their lives due to Koru. Many indicated they would not make any changes to Koru, some suggested more sessions, and some made suggestions that did not form a category (20.6%, n = 7, e.g., "music during appropriate meditations").

Regarding feedback on different aspects of Koru, common categories of responses reflected more positive than negative feedback. Common categories of responses regarding check-ins and discussions reflected *liking* them (32.4%, n = 11), finding them *helpful* (20.6%, n = 7), and gaining *insight from hearing about others' experiences* (20.6%, n = 7). Common response categories regarding the book indicated generally *liking and enjoying* it (29.4%, n = 10), *specific aspects*

liked (26.5%, *n* = 9), *not reading as much as they wanted* (20.6%, *n* = 7), *planning to come back* to it and use it in the future (20.6%, *n* = 7), and that it was an *easy, quick read* (14.7%, *n* = 5). Common response categories about home practice indicated it being *useful and beneficial* (29.4%, *n* = 10), and how they *worked to find what worked for them* (23.5%, *n* = 8). Common response categories regarding guided mediations on the app or website reflected finding them *helpful and easy to use* (20.6%, *n* = 7), and *liking the app* specifically (14.7%, *n* = 5). Common response categories related to home practice logs indicated *finding them helpful* (35.3%, *n* = 12) and *liking the accountability* (14.7%, *n* = 5).

Assessment Completion

Practice logs were submitted each week by 29.0% (*n* = 20) of Koru participants, and all who attended the last Koru session (*n* = 34, 49.3% of those who attended at least once) completed the evaluation. Table 3 shows survey completion rates. Twice as many participants completed pre-surveys than post-surveys. The response rate for completing both surveys was 17.9%. Koru participants had a higher response rate than control participants. Despite efforts to increase survey completion, only the offer of a $15 gift card per survey resulted in a substantial increase in responses (42.9%). For the sample who completed pre- and post-surveys (*n* = 24), ages ranged from 18-45 years (*M* = 27.38, *SD* = 8.07). The majority were female (87.5%), White (75.0%), and graduate students (58.3%).

Table 2. *Common Categories of Responses to Evaluation Open-Ended Questions*

Response category	%	n	Sample quote
Question: What part of the class was most meaningful to you?			
Learning and practicing the skills	50.0	17	"Dedicated time to learn and practice the skills we are trying to develop."
Peer group sharing	26.5	9	"Hearing other students' experiences. They validated my own feelings without them knowing."
Facilitator feedback/encouragement	14.7	5	"The instructor gave feedback to our daily practice very often, which made this course much more meaningful."
Question: As a result of this class, what will you do differently in your life?			
Formal mindfulness practice	44.1	15	"I will continue to practice meditation at least 10 min per day."
Informal mindfulness practice	29.4	10	"I will be more conscientious about incorporating mindfulness into activities such as walking and my work routine."
Being more present/in the moment	29.4	10	"Will be more aware of my surroundings and be in the moment."
Question: Was there anything you would have changed or added?			
Not change anything	41.2	14	"Nothing. This is great!"
More sessions	26.5	9	"More than 4 sessions."

Table 3. *Survey Completion*

Group	Pre		Post		Pre and post	
	n	%	*n*	%	*n*	%
Koru	45	65.2	21	30.4	15	21.7
Control	19	29.2	11	16.9	9	13.9
Total	64	47.8	32	23.9	24	17.9

DISCUSSION

Universal offerings of MBIs as part of collaborative university outreach efforts may be a resource-efficient option for addressing university students' mental health concerns and mitigating common barriers to support-seeking. Greeson et al. (2014) previously demonstrated the efficacy of the Koru MBI offered to university students through a university counseling center, resulting in significant decreases in stress and sleep difficulties, and increases in mindfulness and self-compassion. The current study examined the feasibility of a universal prevention offering of Koru on a southeastern public university campus as part of collaborative outreach. Results support student interest in and acceptability of Koru, the likelihood to continue after attending one session, and limited responsiveness to assessments.

Students at this large, public university indicated sufficient interest in the Koru MBI to offer 2-3 groups per semester across five semesters. This finding supports that there is interest in a universal prevention MBI offered on campus outside of a counseling center. It also supports the idea that colleges and universities can offer MBIs through independent or collaborative efforts of trained facilitators in counseling centers, graduate mental health training programs (Parcover, Coiro, Finglass, & Barr, 2018), wellness centers, or integrate MBIs into college courses (Weis, Ray, & Cohen, 2021).

Study results indicate that once students engage with Koru, they are likely to continue. Of the students attending Koru at least once, about one third attended all four sessions and about two-thirds attended at least three sessions. Given the competing demands on college students' time, having two-thirds of participants choose to attend most of the sessions indicates that they may have perceived ongoing benefits from attendance. The 35% drop-off observed from expressed interest to actual participation and 32% drop-out rate after initial participation suggest a need to remove obstacles to participation. Some suggestions for removing barriers include offering an informational session so students who are curious about Koru can learn more and have an opportunity to have any questions or concerns addressed and offering make-up sessions to Koru participants if they miss a session so that they are able to catch up instead of dropping out.

Another possibility for removing participation obstacles is offering MBIs online, presumably making the program more convenient and accessible, especially for students who may experience barriers (e.g., those with physical or mental health conditions or disabilities; family or job responsibilities). Online MBIs is a burgeoning area of research.

A recent meta-analysis of randomized controlled trials assessing the effects of online MBIs on mental health published between 2015-2020 found them to have a significant low (anxiety) to moderate (stress, depression) impact (Sommers-Spijkerman, Austin, Bohlmeijer, & Pots, 2021). There were 13 studies with university student samples in which the MBIs were described as mindfulness-based (not including eight that also integrated acceptance or self-compassion) and delivered via website (not including seven delivered via a mindfulness app). Given none of these MBIs were delivered via a virtual online classroom or video conferencing, it is not surprising that they were noted as lacking facilitator guidance, which was shown in the overall meta-analysis to relate to stronger effect sizes. However, it does not appear that any have directly compared different formats. The format type (e.g., in-person versus online, online synchronous versus asynchronous, online facilitated versus self-guided, and blended) that is most accessible and beneficial for university students warrants further investigation.

The results also indicated that adverse event reporting was low (3%). Both adverse events occurred during the guided imagery practice in different sessions and may have been related to prior trauma. Guided imagery is not a mindfulness practice, but one of a few mind/body practices taught in Koru. The facilitator asks participants to choose to imagine a place where they feel completely comfortable and safe for practice. In future facilitation of this practice, the importance of choosing a place they do not have unpleasant memories or associations with was more strongly emphasized by the facilitators. Facilitators of guided imagery and mindfulness meditation should be aware that, while these practices are generally considered safe (U.S. Department of Health and Human Services, 2016), some participants may experience adverse reactions, such as those with a history of trauma, abuse, or mental illnesses in which psychosis or dissociation occur (Kubes, 2015; Zhu, Wekerle, Lanius, & Frewen, 2019). Recommendations for facilitators include integrating trauma-informed modifications designed to support safety and stability (Treleaven, 2018), addressing the topic during a pre-group orientation or initial group session, and monitoring for adverse experiences (Wong, Chan, Zhang, Lee, & Tsoi, 2018).

While 100% of Koru participants in attendance during the last session completed the anonymous evaluation, this represents just under half of those who attended at least one session. Strategies for obtaining evaluations from those who do not complete Koru or who do not attend the last session are needed to obtain a more complete evaluation. It is likely that those who attended the last session perceived more benefit from Koru and found it to be more acceptable than those who did not.

All participants who completed evaluations indicated that they would recommend Koru to other students. The average ratings of all taught practices were positive. Interestingly, the two highest rated practices were mind/body practices: guided imagery and diaphragmatic breathing. The inclusion of mind/body practices in Koru was intended to provide skills that may lead to more immediate relief of psychological distress. Mindfulness skills can take more time to learn, and in the beginning stages participants may experience increased awareness of psychological distress. This finding supports the inclusion of mind/body practices in an MBI for college students to provide reinforcement for continuing participation while mindfulness skills develop. An MBI like Koru that integrates other stress management practices taught with a mindfulness approach (e.g., bringing attention back to the practice when the mind wanders, noticing and labeling thoughts and emotions that arise) may be ideal for the general college student population. This would provide other stress management practices to students not inclined to meditation while teaching how to bring mindful awareness into those practices.

Insight into student experiences of Koru can be gained from their reports of the most meaningful part of Koru, what they will do differently as a result of Koru, and feedback about different aspects of Koru. Most central are the skills – learning and practicing in session and integrating into daily life via formal home practice and informal practice. This finding aligns with meta-analytic results of universal promotion and prevention programs in college students that are skill-oriented with supervised practice being the most effective (Conley, Durlak, & Kirsch, 2015). Another key element is the social aspect of the group, specifically peer group sharing. This is mirrored by study findings of benefits of the group element of MBIs (Coholic, Dano, Sindori, & Eys, 2019; Cormack, Jones, & Maltby, 2018). Social processes occurring in group MBIs, such as normalization, making connections with others, and gaining support from peers, can be beneficial (Coholic et al., 2019). A third key element is the importance of facilitator encouragement and feedback. A component of successful MBIs with college students, an active teaching style supports progress and helps with overcoming obstacles (Rogers, 2013). A greater appreciation of these social processes can lead to enhanced MBI facilitation and understanding of mechanisms of change.

Less than a third of Koru participants logged home practice, and those who did provided mixed feedback about logging. It is important that facilitators receive information about participant home practice efforts so that they can support MBI engagement and mindfulness integration into daily life. This is underscored by the significant association between adherence to home practice recommendations and outcomes (Parsons, Crane, Parsons, Fjorback, & Kuyken, 2017), and quality of home practice mediating that relationship (Goldberg, Knoeppel, Davidson, & Flook, 2020). In the current study, home practice information was obtained from practice logs (via app or printed copy) and check-ins during sessions. More participants preferred the app log, and others have found smartphone apps to be useful for obtaining home practice information (Parsons et al., 2020). While feedback about check-ins during sessions was positive, not all participants shared during check-ins. Future researchers should continue to examine ways to facilitate sharing and provide feedback about home practice.

For this universal offering of the Koru MBI to university students, Koru participation was not contingent upon completing surveys. This is likely the main contributor to the low response rate for completing pre- and post-surveys (18%). Difficulty obtaining survey responses has been reported in other MBI research (e.g., Parcover et al., 2018). Before conducting efficacy studies of university student MBIs, researchers should test out strategies to maximize survey response rate, such as making receipt of the MBI contingent upon survey completion, providing time in-session to complete surveys, and/or providing incentives.

Limitations

The current study findings should be considered in light of its limitations. Most students who indicated interest in and participated in Koru were female and White. This demographic make-up is consistent with the majority of MBIs with college students meta-analyzed by Dawson et al. (2019), which may reflect populations from which the samples are drawn. However, it may also indicate gender and race/ethnicity self-selection biases. Current findings may not generalize to students who are non-female and other races/ethnicities. Suggestions for increasing diversity of MBI participants include offering sessions in university cultural centers and having diversity in MBI facilitators. Future research should examine ways to increase MBI cultural relevance to improve engagement in MBIs of underserved communities. Another limitation of the study is the uneven distribution to Koru and waitlist control groups. This

feasibility study was helpful in identifying a problem in randomization implementation, which can be addressed in future studies.

CONCLUSION

University students are interested in a universal prevention MBI offering as part of collaborative university outreach. The Koru MBI was perceived favorably, supporting its acceptability. Strategies are needed to help move more students from interest to attendance and maintain their attendance. Efforts are needed to improve data collection to test efficacy, conduct program evaluations, and determine the amount and quality of home practice. Further MBI development work is recommended regarding the integration of additional trauma-sensitive mindfulness techniques, enhancing MBI cultural relevance, and comparing different delivery modes.

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Author's Note

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