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Helping Occupational Therapy Students Manage Stress on Level II Fieldwork: A Program Evaluation of a Pilot Online Mindfulness Program

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A Program Evaluation of a Pilot Online Mindfulness Program

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Abstract

Monitoring and addressing student stress has become increasingly important, particularly in health profession academic programs, the doctoral project's objectives were to establish a baseline of occupational therapy student stress levels using readily available stress measures and embed mindfulness-based active learning within online coursework to assist students in addressing their stress during Level II fieldwork. Participants included 20 entry-level masters and 21 entry-level doctorate students enrolled in Samuel Merritt University's occupational therapy program during summer and fall of 2018. The Stress Profile and Engagement in Meaningful Activities survey were used to establish a baseline; both measures showed that the participating students fell within the mean for appropriate stress levels and engagement in meaningful activities. The majority of students participated in five out of six learning modules and reported gaining benefits from the mindfulness modules. Students also reported using the modules multiple times throughout the week and provided descriptive examples of how they used the mindfulness modules.

Keywords: occupational therapy, student stress, mindfulness, active learning,

Chapter 1 Introduction

Rising levels of perceived stress have been reported by both undergraduate and graduate students. Undergraduate college students have reported behaviors and symptoms around perceived stress that are consistent with anxiety, depression, and suicidality (Regehr, Glancy, & Pitts, 2013). Graduate students have described increasing stress levels that impact performance (American College Health, 2018).

The perceived stress of students has been monitored by a number of health professions during academic and clinical training. Nursing, physicians, and physical therapists have been monitoring student stress levels and identifying interventions for over 25 years (Bartlett, Taylor & Nelson, 2016; Dyrbye, Thomas & Shanafelt, 2006; Hope & Henderson, 2014; Frank & Cassady, 2005). In a study conducted on nursing students during their clinical rotations, Moscaritolo (2009) concluded that both academic faculty and clinical instructors need to be aware that although stress around fieldwork is inevitable; it is essential to provide students with interventions so that their stress does not impact patient care. Preventing student stress from having a negative impact on patient care is of the utmost ethical importance. Also, maintaining healthy practitioners is another important goal. Pereira, Barbosa, de Rezende, & Damiano, (2015) found that using a short course around stress helped medical students cope with their increasing levels of anxiety and prevent burn out. Healthcare provider burn out is growing concern and one that may have its roots in student preparation.

Some health professions have introduced interventions for students to help them manage perceived stress. The nursing and medical student literature have investigated interventions for decreasing the stress of their students (Moscaritolo, 2009; Pereira et al., 2015). Providing students with health and wellness information have been shown to make a positive difference in

helping students feel they have tools to manage their stressors. (Higgins, Lauzon, Yew, Bratseth, & Morley, 2009). Using interventions such as peer mentors (Phillips, 2017), reflective journaling (Raterink, 2016), yoga and mindfulness training (Schure, Christopher, & Christopher, 2008) have all been shown to decrease anxiety in other healthcare students.

Occupational therapy has limited research on perceived stress in students or interventions that have been shown to support students during didactic courses and fieldwork. At this time, occupational therapy accreditation standards and guidelines do not include recommendations for monitoring student stress. Currently, only two small studies of occupational therapy student stress levels have been conducted (Chang et al., 2017; Pfeifer, Kranz, & Scoggin, 2008). Both studies found that the majority of master's level students in their didactic coursework reported feelings of being overwhelmed and confused. Chang, et al., (2017) noted that, of the occupational therapy students she studied, 79% indicated moderate stress but only 3% were unable to sustain the meaningful occupation.

To date, Samuel Merritt University has not evaluated student stress during the graduate level occupational therapy program. Occupational therapy has limited published information on the stress levels of its students during fieldwork and has not established a baseline in this area. Evaluating student stress is a vital self-monitoring strategy for occupational therapy educational programs and Samuel Merritt University (SMU).

Thus, the objective of this doctoral project was to establish a method to monitor student stress in the occupational therapy educational program at Samuel Merritt University and evaluate whether active learning experiences helped students manage stress on Level II fieldwork.

Chapter 2 Review of Literature

Perceived Stress

Stress is a common tenet in the modern world, but it is defined differently by various sciences. In biology research, stress might be measured in cortisol levels or other physiological responses, while in psychology the sociological or behavioral responses are examined. When examining the perceived stress of students and appropriate interventions, it is essential to understand the underlying concept of perceived stress.

Richard Lazarus, considered one of the founders of the Transactional Model of Stress, defines psychological stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 19). This definition focuses on the interplay between the person, their appraisal or perception of the situation, and their resources. For purposes of this project, this was the definition of perceived stress. Emphasis on perception was used to indicate that biological markers such as cortisol levels were not being used, but instead, student self-report were utilized.

Stress and mental health

The impact of stress on mental health has been well documented. In a study that compared baccalaureate nursing students to non-nursing students, a statistically significant difference was found between the nursing students who had more diagnoses and treatments for anxiety in the 12 months of the study than the non-nursing students (Bartlett, Taylor, & Nelson, 2016). In a systematic review looking for depression, anxiety, and burnout in American and

Canadian medical students (Dyrbye, Thomas, & Shanafelt, 2006), the authors found a high

prevalence of depression and anxiety at levels that were higher than in the general population or

with age-matched peers. The authors examined a number of factors related to the mental health

of medical students. Of importance to this doctoral project was the finding that "perceptions of

stress were found to correlate with depression, anxiety, somatic symptoms, and health problems,

and to predict future risk of depression" (Dyrbye et al., 2006, p. 361). The authors go on to

suggest there is a need for better measures of stress perception.

Another concerning finding from the systematic review was the impact student stress

may have long-term on medical students. They note that student distress may impact academic

performance, attrition, substance abuse and contribute to academic dishonesty. They indicate

that "distress can be devastating to the individual student by contributing to substance abuse,

broken relationships, decline in physical health, poor self-care and even suicide" (Dyrbye et al.,

2006, p. 361).

Measures of perceived stress

There are a number of measures of perceived stress. The studies examined in the two

systematic reviews used depression inventories as well as anxiety scales (Dyrbye, et al., 2006;

Hope & Henderson, 2014). In the systematic review by Dyrbye, et al., they listed that some of

the more common anxiety measures included Beck Anxiety Inventory, Emotional

State Questionnaire, Satisfaction with Life Scale, and Symptom Checklist Anxiety-90. They

commented that these instruments are all considered standard tools in the assessment of mood

disorders. Given that these instruments are all used in clinically assessing anxiety or mental

health diagnoses and they were not deemed appropriate as baseline measures for occupational

therapy students.

The Engagement in Meaningful Activities Survey (EMAS) is a brief self-assessment designed to measure perceptions of meaning in activity participation (Goldberg, Brintnell, & Goldberg, 2002). In a study by Eakman (2011), the validity of EMAS on samples of college students and older adults provided support for using the EMAS in occupational therapy practice. Chang, et al., (2017) appears to have been the first to explore whether the EMAS might also be useful with occupational therapy graduate students.

The Stress Profile is a tool that can help with stress risk appraisal. It provides insight into the specific lifestyle and health behaviors that can be impacting an individual (Nowack, 1999b, p. 2). A review of the psychometric properties of the Stress Profile indicated that it was normed on a non-clinical adult population that included people employed in healthcare (Nowack, 1999b, Chapter 4). In addition, the profile had strong test/retest reliability. In her research, Chang et al., also used the Stress Profile to assess occupational therapy graduate students (2017).

Perceived Stress in Higher Education

Educators in the United States have reported that college students are reporting alarming levels of perceived stress. Researchers have been tracking anxiety and mental health needs in this population and found that college students are describing behaviors and symptoms around perceived stress that are consistent with anxiety, depression, and suicidality (Regehr, et al., 2013). At the undergraduate level, the 2013 American College Health Assessment II found that 46.8% of undergraduate students felt academics were "traumatic or very difficult to handle" and that 28.5% noted "overwhelming anxiety in the last two weeks" (American College Health Association, 2018, p. 15).

Graduate students' perception of their stress levels is also increasing and impacting performance. In a 2016 report, the American College Health Assessment indicated that 16.7% of

graduate students report anxiety has impacted their academic performance (American College Health Association, 2018). The combined dataset of undergraduate and graduate students in the 2013 version of this same study found that 60.9% of students felt overwhelming anxiety and 46.8% of respondents reported "academics" were either "traumatic or difficult to handle" in the last 12 months (American College Health Association, 2013).

Nursing, physicians, and physical therapy have been monitoring student stress levels and identifying interventions for many years. In the nursing literature, Moscaritolo (2009) examined student stress on clinical rotations and provided interventions around clinical reasoning to address this stress. The author concluded that both academic faculty and clinical instructors need to be aware that stress around fieldwork is common. She shared high levels of perceived stress had previously been found to impact healthcare students and, expressed concern that these levels of stress may impact the future of nursing. Working with students during their professional preparation may help them learn how to address the stress in their lives and prevent or decrease the amount of stress they carry forward into their professional lives.

Perceived Stress in Occupational Therapy Education

Interest in perceived stress of occupational therapy students was the focus of an American Occupational Therapy Association (AOTA) conference poster and subsequently published research in the American Journal of Occupational Therapy (Chang et al., 2017). This study was designed to understand how graduate students in occupational therapy perceived common stress factors. The authors intended to use the data to determine whether there would be a need for developing course work around stress coping strategies. The researchers used the Stress Profile (Nowack, 1999a) and Engagement in Meaningful Activities Survey (EMAS) (Eakman, 2012) to examine the stress levels of entry-level occupational therapy students. The

participants included seventy-two OT graduate students the majority of whom were women. The EMAS was used to examine whether occupational therapy students applied the foundational concepts of occupation and meaningful activities in their own lives. The Stress Profiles was used to examine overall stress and specific areas of coping such as lifestyle, personality, social network, and cognitive coping skills. The findings indicated that approximately 20% of occupational therapy graduate students reported that they were experiencing stress at a level that prevented them from engaging in meaningful activities of daily life and 79% indicated moderate stress but only 3% were unable to sustain the meaningful occupation (Chang et al., 2017).

The authors concluded that engagement in meaningful activities helped the students achieved occupational balance and cope with stress. They also recommended implementation of stress management training in educational programs to help recognize stress in themselves and achieve personal life balance.

Evidence-Based Programs to Manage Perceived Stress

Several educational interventions have strong evidence that support students' mental health: mindfulness, reflective journaling, and educational interventions.

Mindfulness-based interventions have been used for stress reduction and management in a wide variety of populations. Mindfulness has its roots in Buddhism (Cullen, 2011) and was defined by Kabat-Zinn as "the awareness that emerges through paying attention, on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment'' (as cited in Irving, Dobkin, & Park, 2009, p. 62). In clinical psychology, mindfulness interventions focus on the five facets of observing, describe, not reacting, not judging, and acting with awareness (Cash & Whittingham, 2010). There has been extensive research on mindfulness-based interventions as related to mental health in general and specific populations.

In a self-report survey of 106 participants who were members of a mindfulness organization or were undergraduate students, higher levels of nonjudge and act-aware facets were correlated with lower levels of depression, anxiety, and stress (Cash & Whittingham, 2010). Some studies have shown that mindfulness-based stress reduction (MBSR) programs were beneficial for health care professionals (Irving et al., 2009; Shapiro, Astin, Bishop, & Cordova, 2005). A randomized trial of an eight-week MBSR program for all health care professionals in a setting (n=38) found the program reduced stress and increased the quality of life and self-compassion (Shapiro et al., 2005). A review of ten research studies on MBSR programs for health professionals found benefits in the areas of both physical and mental health (Irving et al., 2009). In a four-year study on the effectiveness of a mindfulness-based stress reduction course offered to graduate counseling students, the authors found that the students reported positive influences in their personal and professional lives such as becoming less reactive to stress-related or anxiety-provoking events (Schure et al., 2008).

Reflective writing is another stress-management approach for health profession students. In one study, reflective writing was used with graduate nursing students to improve critical thinking skill development and encourage reflection by the students (Raterink, 2016). During a two-semester clinical experience in a graduate nurse practitioner program, students were assigned a clinical scenario and then asked them to reflect on how the scene did or did not effectively represent an identified skill or habit. Initially, the students expressed confusion over the skill or habit that was represented and felt that the reflection process was more difficult than expected, but over time they improved and were more likely to be able to describe how they might use this skill or habit in the future. Clinical educators used initial rubrics to provide feedback and later modified modify the scoring system to create a more detailed rubric of

advanced clinical reasoning. Reflective journaling provided the students the opportunity to develop critical thinking skills and to reflect on their experience during their clinical rotations while allowing the faculty to have a systematic way to provide feedback on that experience. This study concluded that reflective writing may be helpful in developing new critical thinking skills.

A number of health care educational programs provide classes or workshops which teach healthy coping methods and assist students in learning about the impact of unmanaged stress. Pereira, et al., (2015) found that using a course that taught healthy coping methods helped medical students deal with their anxiety and burn out. Their study used a pre- and post-test model to collect data from Brazilian medical students who took an elective course that offered strategies for coping with professional stress. At the end of the course, 67% of students reported fewer symptoms of stress, 76% found it helpful to adopt new coping strategies and 90% reported that what they learned helped them identify stressors and share their new knowledge with colleagues. This study indicated that students were interested in learning how to cope with stress and shared their learning with others in health care.

There are a number of larger studies of interventions to address mental health in academic settings. Regehr, et al., (2013) conducted a systematic review and meta-analysis examining the effectiveness of interventions that addressed stress reduction in university students. They noted that, in their analysis of 24 studies which included 1431 students, cognitive, behavioral, and mindfulness interventions were all associated with a decrease in anxiety symptoms. They commented that despite variability in type and length of interventions or location and type of university program, interventions were helpful in reducing student

anxiety (Regehr, et al., 2013, p. 7). Cognitive, behavioral, and mindfulness approaches were effective for addressing stress in university students and should be made widely available.

Summary

The literature was used to select baseline measures of student stress and occupational engagement and design a pilot stress management educational program for occupational therapy students. The Stress Profile and EMAS were selected to establish a baseline of stress and engagement in occupational therapy students. Mindfulness-based education modules were embedded into the OT curriculum to help graduate occupational therapy students manage student stress.

The objectives of this doctoral project at Samuel Merritt University were to:

- Obtain baseline levels of perceived stress in occupational therapy students at the end of the didactic part of the program

- Pilot an educational program for managing perceived stress during students' Level II fieldwork

- Evaluate students' perceptions of the pilot program.

Chapter 3 Approach

Doctoral Project Approach

The purposes of this doctoral project were two-fold. It began by obtaining baseline data on student's stress and engagement before Level II fieldwork. Then in the next phase of the pilot program, the approach sought to develop, implement, and evaluate a pilot program of active learning experiences to help master's and doctoral students manage stress during their first Level II fieldwork. Baseline data collection occurred in a meeting with students approximately one month before the beginning of Level II fieldwork.

The pilot program began with a mini-lecture, self-assessment using the Stress Profile and EMAS and an individual goal setting activity. The pilot program of active learning consisted of a series of mindfulness-based self-care modules, embedded in the online coursework given during the occupational therapy students at SMU first Level II fieldwork experience. The active learning experiences were not graded and not mandatory. Each activity opened at the beginning of the week and then was followed up by a brief nongraded survey to track whether students used the active learning tools offered and felt it was beneficial.

The use of Samuel Merritt University occupational therapy students as participants in this project required a review by the Institutional Review Board (IRB); approval was obtained from Samuel Merritt University (SMUIRB# 18-011). Also, an IRB exemption request from St. Catherine University was also requested (Protocol 1063) and subsequently granted. Informed consent was not required as the information gathered was part of normal educational practices and any information obtained was considered secondary data. This project proposed to establish a baseline on stress, engagement in meaningful activities, and provide active learning modules

addressing mindfulness-based self -care as part of the normal education practice in fieldwork coursework. This was a pilot program on how best to deliver the material to students and assess their needs. Students were provided with the assessment tools on stress but were not tracked whether they completed them or turned them in. Also, the active learning tools were anonymous and thus not affiliated with the student's grades.

Participants

Students from a cohort of entry-level doctoral and master's level occupational therapy program at Samuel Merritt University who were enrolled in the Level II fieldwork for summer and fall of 2018 were selected. Information on the cultural or ethnic background and other demographic characteristics of the students were not collected.

Baseline Data Collection

Pre-fieldwork Meeting and the Introduction of the Project

The project began during the pre-fieldwork meeting where the students were provided with two self-assessment tools. In the introduction to the tools, students were informed that the tools to be used were the Stress Profile and The Engagement in Meaningful Activities Survey (EMAS). Students were also notified that the purpose of the tools was to gain insight into their personal stress profile and to understand how they were (or were not) engaging in meaningful activities as a way of coping with stress. Each packet was numbered and students were told to put no identifying information about themselves on the tools. Students self-scored these two items after taking them.

After completing the Stress Profile and EMAS, students were asked to remain and attend a mini-lecture on the importance of managing stress to optimize performance during the transition from classroom to Level II fieldwork. The focus of the mini-lecture was on reviewing

mindfulness practices learned in a previously attended wellness course and helping them

integrate that into their self-care practice.

Students were asked to set goals for their upcoming fieldwork experience based on their

results on the Stress Profile and EMAS. Those goals were written down on worksheets.

Students were encouraged to take photos of their scores on the self-assessment tools and goals

sheets, but to turn in the numbered packets to the researcher assistant at the back of the room.

These activities concluded the pre-fieldwork meeting portion of this project. The next

phase included the fieldwork students participating in learning modules six times during the 12

weeks of their Level II fieldwork experience.

Active Learning Modules

Learning activities related to mindfulness were introduced to the students through the

Canvas online portal. Students were asked to review the activity early in the week. Each

module took no more than 10 minutes to review. At the end of the module, each student was

provided access to an anonymous survey embedded in the Canvas online portal. Students were

asked to share their experience around each mindfulness activity after using it for a week. The

surveys were nongraded and contained no more than three questions. The questions were a

combination of Likert items and open-ended questions.

During the 12th week of fieldwork, students were asked to reflect on goals and write a

brief self-assessment on whether they met their goals. The combination of stress assessment

tools, goal writing, active learning modules, and goal reflection were used to evaluate the pilot

program

Measures

Engagement Meaningful Activities

The EMAS is a brief self-assessment designed to measure perceptions of meaning in activity participation (Goldberg et al., 2002). In a study by Eakman (2011), the validity was examined of the EMAS samples of college students and older adults and concluded that the EMAS has application in the field of occupational therapy practice. The EMAS is a 12-item survey that allows subjects to rate whether a statement on activity engagement is rarely true (1 point), sometimes true (2 points), usually true (3 points), or always true (4 points). Scores are then compiled and can be classified as either low (EMAS<20), Moderate (EMAS 29-41), or high (EMAS >41). For college students, a mean score of 33.4 was provided as an average. The OT students in this study were being compared to the mean of 33.4 (Eakman, 2012).

Stress Profile

The Stress Profile (Nowack, 1999b, p. 1) is a self-assessment questionnaire of factors that may affect "physical health and psychological well-being" in the following areas:

- Stress

- Health Habits (including Exercise, Sleep/Relaxation, Prevention Eating/Nutrition)

- Social Support Network

- Type A Behavior

- Cognitive Hardiness

- Coping Style (including Positive Appraisal, Negative Appraisal, Threat Minimization, and Problem-Focused Coping)

- Psychological Well-Being

A review of the psychometric properties of the Stress Profile indicated that it was normed on a non-clinical adult population that included people employed in healthcare (Nowack, 1999b, Chapter 4). The manual for the profile indicates that for the 14 content scales the median

reliability estimate for internal consistency was .72 from a range of .51 -.91 (Nowack, 1999b, p. 23). The Stress Profile has 123 questions divided into six major categories of stressors that people can experience in their work or personal life. Respondents use a Likert scale to summarize their frequency or satisfaction on each item and may complete the survey in approximately 20 minutes.

The Stress Profile is a tool that can assess stress risk. It provides insight into the specific lifestyle and health behaviors that can be impacting an individual (Nowack, 1999b, p. 2). In the directions for taking the Stress Profile, the author calls stressors "hassles" and classifies them into the following groups: health hassles, work hassles, financial hassles, family hassles, social hassles, and environmental hassles.

Surveys on Mindfulness Modules

The pilot study on mindfulness was provided to graduate students from Samuel Merritt University in a combined entry-level masters and an entry-level doctoral course before embarking on their first Level II fieldwork experience in summer and fall 2018. For the master's level students, there was no further coursework, and they graduated after they completing fieldwork. The doctoral students returned to campus after fieldwork and will spend an additional year working on their capstone projects.

Pilot Online Mindfulness Educational Program

Description of Mindfulness Intervention

Mindfulness intervention was embedded in online course assignments six times during fieldwork during Summer 2018, Level II fieldwork. Students were provided with mindfulness modules and then presented with an online link to rate the activity based on whether they had

previous exposure to this mindfulness practice, how they participated in the activity, and whether they found active learning module useful. Modules were individual and non-graded. Surveys were anonymous. For this portion of the project, students were provided a mindfulness educational program that was based upon the work of Forsyth, J. P., & Eifert, G. H. (2007) and Rogers (2016). Both of these authors provide simple mindfulness exercises that students could do on their own. The instructional methodologies of the intervention were weekly mindfulness modules embedded in the online coursework required during their fieldwork rotation and provided a link to a survey after each module that allowed students to share their experience with the mindfulness modules.

Format of Modules

Throughout the Level II fieldwork experience, students were introduced to six mindfulness modules.

Module 1 – Gatha Meditation

Gatha Meditation is a Koru mindfulness exercise focuses on breathing in and out for several minutes and being present in the moment (Rogers, 2016, p. 78). Students were encouraged to acknowledge their own experiences around the thoughts, worries, and fears of starting the new experience of fieldwork but not judge their feelings. The activity provided simple breathing and focusing meditation that students could use during the week to calm and re-center. As part of the coursework on students were given a link to an anonymous survey where they could share their experiences with this active learning module.

Module 2 – Guided Imagery

Guided Imagery is a mindfulness exercise that helps focus the mind through the use of a image and scrip which encourages students to think only of the present. Students were told that guided imagery could be a way to calm the mind if they felt their thoughts racing at night or needed a moment at lunchtime to unwind. The "5-minute vacation" link was given as an option to use on their phones or at home to help create a feeling of calm. Students were given this link to a YouTube video entitled "5-minute vacation" https://www.youtube.com/watch?v=3LAmYS6kb7k and were introduced to this exercise in the third week of fieldwork. An anonymous survey was available to complete and share reactions to this exercise.

Exercise 3 – Gratitude

Gratitude based activities were adapted from coursework developed by Tietz to address self-care for healthcare professionals (Tietz, 2017,p. 115). It was selected after the author spoke a Samuel Merritt University Student Occupational Therapy Association event. During the fifth week of fieldwork, this exercise instructed students to write down ten things they are grateful for using a list format and then at the end of each subsequent day write down 3-5 things they were grateful for. The author felt that this exercise allowed her and other health care professionals to reduce negative emotions, increase sensitivity, patience, empathy, and self-esteem.

Exercise 4 – Limiting beliefs

Limiting Beliefs was also developed by Tietz. In her book, she discusses how the way individuals speak to themselves internally can have an impact on behavior. She discourages the use of negative self-talk and encourages examining internal limiting beliefs. In this exercise (Tietz, 2017, p. 49) students were given a prompt to write one belief they believe limits them. The example provided is that a student must be perfect. The next prompt has the student write out the truth – for example, that the student has resources to learn and both the supervisor and client understand the role a student. This exercise was provided during the seventh week when students are expected to be carrying fifty percent of an entry level therapist's caseload. The survey questions were presented at the end of the week.

Exercise 5 – Sharing compliments

Sharing compliments had student giving compliments three times a day for a week to other people they encountered (Rogers, 2016, p. 174). The students were encouraged to actively

avoid focusing on negative thoughts and instead focus on noticing the good and positive experiences this week. This activity was introduced in the tenth week of fieldwork.

Exercise 6 – One good deed.

One good deed is a tenet of mindfulness that states, changes in behavior can lead to changes in thoughts. The one good deed exercise has students perform one good deed without any expectations and write about how it impacted the rest of their day (Rogers, 2016, p. 153). This activity was provided in the final week of fieldwork to assist students in seeing the positive changes in themselves and to express gratitude for the experience and included a follow-up survey.

During the final week of the course, students were invited to review their goals online and share whether they met those goals through an ungraded assignment. The prompt for this discussion was "Thinking back on the goals you set before starting fieldwork how did you do? Did you meet your expectations and personal goals? Share things that helped you and things that hindered you." Given that this data was not anonymous, it was not included in this project.

Their responses to the Stress Profile, EMAS, goal setting worksheet, goal setting discussion, and anonymous online surveys were collated and used as aggregate data.

Chapter 4 Outcomes

Student Participants

The students who agreed to participate in the pilot program consisted of six male students and 35 female students for a total of 41. Of this group, 21 were entry-level doctorate students (three males and 18 females), and 20 were entry-level master's students (15 females and five males). The Stress Profile and Engagement in Meaningful Activities Survey were provided to and completed by a total of forty-one students in masters or entry-level doctoral occupational therapy program at Samuel Merritt University. Due to the anonymity of the active learning profiles, it is unclear how many students completed the baseline measures but did not participate in the pilot program.

Baseline Measures

Stress Profile

The Stress Profile has 15 subtests, which are scored individually. To organize the results, similar subtests were grouped together.

Health behaviors. The first group of subtests were general perception of stress level based on self-report. On the subtests for Stress, Health Habits, Exercise, Rest/Sleep and Eating, the students mean T score was between 40 and 60 indicating that as a group the students demonstrated neither low nor high-perceived levels of stress. The mean scores for Eating and Stress indicate that the students were demonstrating behaviors that would allow them to maintain appropriate standards of health. This was not true for the subtest titled Health Habits, Exercise and Rest/Sleep means which fell closer to the 40 T cut off and indicates that the students are closer to the risk range for health maintained. Between 20% for health habits and 39% for

rest/sleep are falling below the 40 T cut off range indicating they are not practicing behaviors

oriented to health.

Table 1

Health Behaviors Subtests

Stress Profile Subtest	M	SD	Min	Max	T ≥60	T<40
Stress	53.27	11.38	36	93	5	4 (10%)
Health Habits	48.75	12.43	22	75	7	8 (20%)
Exercise	48.32	11.81	28	69	7	8 (19%)
Rest/Sleep	42.2	9.86	22	68	2	16 (39%)
Eating	52.34	12.09	24	78	10	7 (17%)

Note. Stress -60T or higher indicates high-perceived levels of work/life stress x 3 months
40T or lower indicates low perceived stress
Health Habits, Exercise, Rest/Sleep, and Eating -60T or higher indicates individual is practicing behaviors oriented to health
50T or higher is at least maintaining currently accepted standards for health while 40T or below indicates individual is not practicing behaviors oriented to health.

Risk and Prevention Behaviors. The risk and prevention subtests are examining to what

extent participants are using preventative health and hygiene practices to maintain their own

health. The prevention subtest includes items such as does the participant obtain regular health

check-ups and avoiding others who are ill. The second subtest included in Table 2 is the Alcohol,

Recreational Drugs, and Cigarette (ARC) cluster. This score is obtained by scoring the final three

Prevention items separately to receive a T score. If this score is above 60, then this indicates

what the Stress Profile authors consider a Health Risk Alert. The questions in this area ask

specifically about substance abuse and cigarette smoking. The authors chose these particular

items because of the serious health risks they pose but also have effective strategies for

addressing these negative health behaviors.

Table 2 shows that the mean Samuel Merritt University occupational therapy students for

Prevention were 50.58 (12.09) and the mean for ARC score was 55.05 (8.69), which are below

the health, risk level. It should be noted that this is viewing the data in the aggregate. It raises

concerns when the scores are looked at individually where on the prevention subtest a total of 15

students or 23% fell in the Health Risk Alert range, with T scores that were above 60. On the

ARC subtest, 17 students had T scores above 60 and while the majority of students fell below the

health risk level, 13% of students are abusing alcohol, recreational drugs, and cigarettes in a

manner that is a health risk.

Table 2

ARC &Prevention subtest

Stress Profile Subtest	Mean	SD	Min	Max	T $\geq$60	T 49-59	T<40
Prevention	50.58	12.09	20	80	15	10	9 (23%)
ARC	55.05	8.69	39	69	17	18	5(13%)

Social and Behavioral Subtests The next group of Stress Profile subtests that were

grouped included Social Support, Type A Behavior, and Cognitive Hardiness. The Social

Support subtest examines whether the subject feels that they have people who they can count on

for emotional support and how satisfied he/she is with that support. On this subject, the

occupational therapy students indicated that they had great satisfaction with their social support

network and obtained a mean score of 68 with no students falling below the 40 T cutoff. This

was one of the highest scores on the Stress Profile.

The Type A Behavior examines whether the subject expresses more Type A behaviors in

the face of life or work stress. These include cynical mistrust, anger, and hostility and have been

implicated in poor health outcomes (Nowack, 1999b). Individuals who score above 60 T tend to

show more Type A behaviors than those with lower scores.

The Cognitive Hardiness section examines the subject's view of life's changes and risks

and whether they can view them as either challenges or opportunities for growth. Those with

scores over 60 T tend to have a strong sense of control in their life. Those with scores below 40

T tend to report feeling more alienated from their families and work. They do not view

themselves as having control in their lives and are more vulnerable to illness in times of stress.

On both of the Type A Behavior and the Cognitive Hardiness subtests, the mean scores fell

between 40-60 and indicate that students are neither thriving nor struggling in these areas. Of

concern is that 24% of students had a T score below 40 indicating they feel alienated from family

and work.

Table 3

Social, Behavioral Factors

Stress Profile Subtest	Mean	SD	Min	Max	T >60	T<40
Social Support	68	11.45	40	80	32	0 (0%)
Type A Behavior	48.41	10.39	24	64	5	7(17%)
Cognitive Hardiness	46.71	9.62	22	64	5	10 (24%)

Coping Strategy Subtests. The final group of Stress Profile subtests all examined

specific coping strategies for stress. These include Positive Appraisal, Negative Appraisal,

Threat Minimization, Problem-Focused, and Psychological Well Being. Each of these is

different ways of coping with stress and indicates an overall presence or absence of satisfaction

with life. In each of these subtests, the students' scores fell between 40-60 indicating that while

they are not frequent users of a strategy, they do not lack the strategy.

There were 15% of students whose T scores indicate they are not utilizing positive appraisal as a coping strategy and 10% of students who are. In negative appraisal, 39% of students have scores indicating the use of self-blame, criticism or catastrophic thinking. The Threat Minimization score also fell at 39% indicating that these students have a tendency to dwell on stressors. The Psychological Well Being score showed that, as a group, the students are not completely satisfied with their lives nor are they in a psychologically vulnerable state. A total of seven students or 17%, had a T score of above 60 indicating high satisfaction while eight students or 19% had a T score below 40 indicating a vulnerability to physical or psychological stress.

Table 4

Coping Strategy Subtests

Stress Profile Subtest	Mean	SD	Min	Max	T >60	T<40
Positive Appraisal	48.12	9.73	28	76	4 (10%)	6 (15%)
Negative Appraisal	57.41	12.9	30	80	16 (39%)	4 (10%)
Threat Minimization	50.29	15.1	24	80	16 (39%)	10 (24%)
Problem Focused	47.9	13.21	19	72	7 (17%)	10 (24%)
Psychological Well Being	49.02	10.59	22	70	7 (17%)	8 (19%)

Note. Positive Appraisal – Scores of 60 T or higher indicate a frequent use of positive self-talk strategy while scores of 40T or lower suggest the absence of a strategy for coping with stress.
Negative Appraisal – Scores of 60T or higher indicates self-blame, criticism or catastrophic thinking when coping with stress.
Threat Minimization – 60 T or higher indicates the frequent use of decreasing the significance or not dwelling on stressor's while 40T or lower suggests absence of strategy
Problem Focus – 60 T or higher indicates a frequent use of making active attempts to change environmental stressors or own behavior when coping with stress while 40 T or lower indicates the absence of a strategy for coping with stress
Psychological Well Being – Scores of 60 T or higher indicate satisfaction with themselves and enjoyment of life while 40T or lower indicates lack of comfort and vulnerability to physical or psychological disease.

Engagement in Meaningful Activities Survey

The EMAS was also given to the students as part of the baseline measures. They completed and scored this survey immediately following taking the Stress Profile. This measure classifies subjects as having either low, moderate or high perception of meaning in their activities. For this measure a low measure is considered scores below 29, moderate is 29-41 and high scores are above 41. The sample mean for Samuel Merritt student participants was 33.4 ($SD = 5.8$, $Min = 22$, $Max = 44$), the moderate range of engagement for this measure.

<div align="center">Active Learning Modules</div>

In the weeks following the completion of the baseline measures, the student began their Level II fieldwork rotations. During this period, there were weekly assignments on the online learning system, Canvas. During this 12-week Level II fieldwork rotation, active learning modules around mindfulness and stress reduction were embedded into the coursework. The active learning modules provided learning resources, activities, and had non-graded surveys to obtain feedback on the student experiences. In five out of six surveys, students expressed positive regard for the learning module and either indicated that they found it helpful or would use in the future.

Gatha Meditation

The first module provided a Gatha meditation activity, and the follow-up survey inquired on prior exposure, use, and perceived helpfulness. For this module, there was a high response rate with n=29. The majority of students had prior exposure and used Gatha meditation during the week that it was offered through the active learning module. The majority of students, 74% found the Gatha meditation helpful while 25% did not.

Table 5

Gatha Meditation Usage

Gatha Meditation	Yes	No	Somewhat
Prior Exposure	3%	97%	
Used during week	87%	13%	
Found helpful	74%	25%	1%

Note. n=29

Question 1 – Have you been exposed to Gatha Meditation prior to this week? Question 2 Where and when did you use Gatha meditation this week? Question 3 Did you find the meditation helpful? Why or Why not?

The students provided some positive statements in the comments section.

- "When I was not sure how to respond to several projects piling up. I took a moment used the mantra and began to see that by making subtle shifts I could accomplish my tasks with less effort."

- "I used it after a few challenging sessions with patients where I felt like I didn't know what I was doing."

The students who did not use the meditation or did not find it helpful generally commented on not feeling stressed, so they did not feel they needed it.

Guided Imagery

The next active learning module was Guided Imagery. This activity also had a high response rate with n=29. A total of 81% reported having prior exposure to this mindfulness practice and after using it during the week, 68% indicated that they would use it again.

Table 6

Guided Imagery exposure

Guided Imagery	Yes	No	Maybe
Prior Exposure	81%	19%	
Use Again	68%	28%	4%

Note. n=29

Question 1 Have you used guided imagery prior to this week? Question 2 How often did you use the provided guided imagery video this week? Question 3 Would you use guided imagery again in the future?

This active learning module provided a video link to brief YouTube video providing a brief guided imagery exercise. The second question of the follow up survey asked whether the students used this particular video. The majority of students used this video between 1-3 times.

Table 7

Use of Guided Imagery video

Guided Imagery	*Once*	*Between 1-3 times*	*Daily*
How often did you use this week	26%	59%	15%

Note. n=29

These tables indicate that the majority of students used the Guided Imagery more than once and over half would use again. The students appeared to recall their previous exposure to this mindfulness practice from their didactic coursework and were able to apply the information to themselves.

Gratitude

The next active learning module was titled gratitude with n= 27. This activity had students write down things they were grateful for the first day and then asked them to continue to write things down daily. The majority of students (54%) continued to write down things they were grateful for and indicated that they found the task helpful (52%).

Table 8

Gratitude usage

Gratitude	*yes*	*no*	*somewhat*
Continued write-down	54%	42%	

Found Helpful	52%	4%	44%
Would continue	61%	29%	9%

Note. n=26 Question 1 After the first day did you continue to write down 3-5 things you are grateful for? Question 2 Did you find writing down thins you were grateful for helpful? Question 3 Would you continue to write down thins you are grateful for? Why or why not?

When asked if they would do this activity in the future the students responded favorably. One student commented "Yes, because it is easy to get caught up in responsibilities and it's easy to be tired/agitated after a long day of work/school. Sometimes we have days where nothing goes our way; patients don't want to work with us, CI says something that may rub us the wrong way, our thoughts try to tear us down. But if we remember why we do what we do, why we dedicated our lives to this career, it's easier to let things go."

Another student shared the observation that, "Yes, I think this exercise was helpful. I found that it helped to keep things in perspective when I was feeling overwhelmed or discouraged."

The students who did not find this activity helpful tended to comment on being busy or not feeling like they needed to write it down. One student shared: "It's a great practice, but hard to remember to do." While another stated, "No because although it was a nice gentle reminder, I would rather think about it on my commute to work than write it down."

Limiting Beliefs

The Limiting Beliefs active learning module addressed the negative self-talk that students can sometimes exhibit. The Stress Profile examined this in the Negative Appraisal subtest and, while the mean indicated that most students fell below the cut off for unhealthy levels of negative self-talk, 16 individual students or 39% tended toward self-blame, criticism and catastrophic thinking. This activity was geared toward changing those behavior patterns.

Table 9

Awareness of Limiting Beliefs

Limiting Beliefs	*Yes, but did not do*	*Yes, actively worked on*	*No*
Previously aware of limiting beliefs	42%	54%	4%

Note. n=24 Question 1 Prior to this week were you aware of your own limiting beliefs?

Limiting Beliefs	*Yes*	*Somewhat*	*No*
Did writing help you change beliefs	29%	71%	0%

Note. Question 2 After writing down your truth, did you find that your limiting beliefs changed?

Table 9 shows that according to this active learning module, 54% of the students had been previously aware of their own limiting beliefs and had actively worked on this trait while 42% were aware but had not addressed it. The majority of students reported writing down their limiting beliefs only helped them somewhat. One important note is that while 71% of students felt this helped them "somewhat", the comments they made about this activity were overwhelmingly positive. Many of the comments were similar to these:

- "I have realized that I would not say the things to others that I say to myself in my head and that I do have more knowledge after two years of school than I give myself credit for."

- "In a previous reflection with my CI, she pointed out that I was making a lot of negative self-talk comments. I didn't realize how much my inner-voice was critiquing my performance. After that, I made a conscious decision to trust the process and believe in myself, and things began to change. For an entire week, I was not nervous before my sessions, and it was such a relief. I am capable and realizing this simply required self-acknowledgment and self-reflection."

- "Writing down my limiting beliefs and truths has helped me focus and feel less anxious. I have felt overwhelmed by my limiting beliefs, and it has clouded my mind and distracted me during fieldwork. Now that I'm aware of it, I know that I can acknowledge it and move on."

Of the 23 students who wrote comments on this exercise, 21 of the comments were positive and expressed that they had changed the way they viewed themselves.

Sharing Compliments

The next activity was sharing compliments and was assigned in week ten of the 12-week rotation. This activity had only one student participate. This student reported that they were able to share a compliment with three different people each day that week and that they a noticed change in themselves. The student wrote a brief comment about complimenting a colleague on a presentation and was pleased with how much the other person appreciated the compliment. This module had the smallest n, and it is unclear why this was so different from the other learning modules.

One Good Deed

The final active learning module was entitled One Good Deed and had an n of 19. This was one of the smallest participant groups. The rapid increase from the previous modules *n* indicates that the timing of the previous learning module may have had an impact on participation. The One Good deed activity had a positive response with 95% of the participants reporting that they were able to do one good deed.

Table 10

Use of one good deed

One Good Deed	Yes	No	Maybe
Able to do 1 good deed	95%	5%	
Notice a change	56%	33%	11%

Note. n=19 Question 1Were you able to complete one good deed? Question 2 Did you notice a change in the behavior of the other person? Question 3 Share how you felt when doing your good deed. Did you see a change in the behavior or outlook? Any changes in the recipient of your good deed?

Once again the comments students made were overwhelmingly positive, despite 33% feeling they did not notice a change. Sixteen out of seventeen comments were positive, some examples include:

- "I felt amazing doing one good deed for others. At first, I felt weird and nervous, but when I saw the recipient's demeanor change, I knew it was the right thing to do. Sometimes we take the little things for granted, and throughout this whole experience I have learned to appreciate everything that comes my way, either good or bad, and grow from it. Thank you for having us take part in this exercise."

- "I decided to buy lunch for a doctor who was standing in line behind me in the cafeteria line. I also thanked her for everything she does, and let her know that she is appreciated.

She was surprised that I wanted to do this for her, and thanked me for my words. She

then paid for the person after her. Not sure how long this pattern lasted, but it was really

neat!"

Summary

The Stress Profile and the EMAS were used to obtain baselines around student

stress. The data viewed in the aggregate indicated that students generally were not exhibiting

unhealthy levels of stress and continued to participate in meaningful activities. Of concern were

the students who were not well represented by the mean and whose scores fell above or below

health cutoffs.

The use of six active learning modules embedded every two weeks in the students online

learning platform yielded positive results. The participation rates for the modules varied. The

first two active learning modules were Gatha Meditation and Guided Imagery which both had

n=29. The lowest participation was for the sharing compliments module, where n=1. The one

good deed module had a n=19, limiting beliefs had a n=24 and gratitude had a n=26. This

indicates that for the majority of the modules over half the students utilized online learning

modules around mindfulness even when it was not required or providing them educational

rewards such as points.

Chapter 5 Discussion

This doctoral project was conducted at Samuel Merritt University and proposed to obtain baseline data on perceived stress and provide a pilot intervention program to students during fieldwork. The perceptions around stress in occupational therapy students had not been well studied and no evidence-based interventions for addressing stress in occupational therapy students were found in the literature. Other healthcare professions had examined this issue and this provided a starting place for identifying student stress and creating appropriate interventions.

Occupational therapy education is changing. There is a lively discussion around whether the profession should move to an entry-level doctorate. In the last thirty years, the profession has moved from a bachelor's level entry to a master's level entry. Based on data from the American College Health report with increasing demands in educational level, there are reported increased levels of stress for students (American College Health Association, 2018).

Record numbers of students are entering occupational therapy programs around the county and yet we know little of their experience. In the American Occupational Therapy Association's annual review of academic programs, it was noted that in 2017-2018, there were 19,262 students preparing for a master's level entry as an occupational therapist and 2,086 students preparing for an entry-level doctorate in occupational therapy (Harvison, 2018). The total number of students preparing to become occupational therapists during this period was 21,348. This is a dramatic increase from 2007 when there were only 12,246 students studying to enter the field of occupational therapy. With increasing numbers of students, comes increasing responsibilities toward those students. In a profession that prides itself on being client-centered, it is also important for educators to remain student-centered.

For Samuel Merritt University's occupational therapy department the first step in learning about the student experience around stress was to establish a baseline using the Stress Profile. In examining the data obtained from the Stress Profile, on all subtests the mean scores for the students indicated that they were reporting behaviors that would maintain appropriate levels of health. The data when viewed in the aggregate was reassuring. The means obtained on all subtests fell between 40 and 60 T indicating appropriate responses to stress.

 Yet, when examining the scores of those who fell below the health maintenance level, the data is more concerning with 20% of students not reporting appropriate health habits, 39% not reporting appropriate rest/sleep, and 19% not exercising enough to maintain health. Similar concerns are raised in the ARC cluster, where the data shows that while the majority of students are reporting appropriate health prevention behaviors, there were 13% who fell at health risk alert level around their use of alcohol, recreational drugs and cigarettes. In a cohort of 41 students this means that five students are exhibiting risky behaviors in this area.

Similar findings occur in the coping strategy subtests. The majority of students are using stress coping strategies geared toward health maintenance, yet 39% of students reported using negative appraisals of self-blame, criticism and catastrophic thinking. The same number was found on the threat minimization subtest where 39% of students reported they tend to dwell on stressors and not about what they could do about stressful situations.

Per the EMAS the students are also remaining engaged in meaningful activities at levels comparable to other college students. As an individual's need for meaningful activities throughout the lifespan is a cornerstone of occupational therapy, it is crucial that we monitor whether our future practitioners are able to remain engaged during their education. Based on the data from this pilot program, occupational therapy students are understanding the need to

practice meaningful activities during their professional development despite the pressures and struggles of graduate school

The Stress Profile and EMAS are simple to administer and allow students insight into their stress and engagement. Continuing to identify ways that students and occupational therapy educators can monitor the stress of their students is an essential next step for the profession. The data from other healthcare professions shows us that ignoring student stress places students at risk for ongoing depression, anxiety or suicidality (Dyrbye et al., 2006)(Hope & Henderson, 2014). By allowing future occupational therapists to self-assess their stress, the profession is helping vulnerable students to gain insight into themselves.

Knowing that stress is rising in students across the county and, noting that the mean from the Stress Profile did not accurately capture the experience of some students, this project sought to identify whether students would use active learning modules around mindfulness. The data from this project shows that students did use five out of six active learning modules when they were embedded into the curriculum during Level II fieldwork. In the comments section of each follow up survey, students reported positive insights and experiences around all of the mindfulness-based modules.

Half of the modules provided activities that addressed the stress the students were under through such mindfulness practices as meditation, guided imagery and limiting beliefs. Some students need for healthy coping strategies during a period of transition was supported by the data in the Stress Profile which that showed 24% of students had poor cognitive hardiness and did not have a strong sense of control in their lives. By providing simple calming mindfulness tasks and examining limiting beliefs a new way of managing their stress was offered in a non-threatening manner through the online modules.

Other active learning modules used the mindfulness concept of positive behaviors create positive thoughts. The one good deed, gratitude and sharing compliments modules all sought to help students create positive experiences with others. Interestingly, the Stress Profile data indicated that this group of students had strong social support and these three modules had the lowest participation rates. It may be that because the students felt socially connected they had less of a need for these modules or it may be because these modules fell later in the semester, students had less time to participate. An example of this is when only one student participated in the Sharing Compliments active learning module offered in the 10th week. In the future, the timing of the modules will be adjusted to see how that impacts student engagement.

Overall, the students utilized the online active learning modules around mindfulness during their first fieldwork rotation. Students used the self-reflective modules more than other modules and shared insightful comments about their own growth and development through the follow up surveys. Even when students reported they were unsure or did not believe they were helped by a specific module, their comments during the free write portion of the follow up surveys were consistently positive. Providing an opportunity for self –reflective writing on the impact the mindfulness activity had on them appeared to be an important part of the learning process for these students.

All of these students had previously been exposed to mindfulness-based stress reduction as part of the occupational therapy curriculum in a course entitled "Health and Wellness". Yet including these activities in didactic coursework appears to lead students to believe that these are treatment techniques for future clients. By offering these activities during the transition from the classroom to the fieldwork, students were able to utilize these practices as part of their own self -

care. A number of the comments expressed surprise at how helpful they found the mindfulness practices.

Limitations

The limitations of this project included needing to use stress measures that were approved by the Samuel Merritt University Institutional Review Board (IRB). While some studies identified other stress measures that could be used to assess student stress, the IRB felt that any tool that could be considered a diagnostic measure would be inappropriate for this study. This limited the assessment tool options. While the Stress Profile is very specific in its data and offers non-threatening insight into ways stress may be impacting the subject's life, it is an awkward tool to score. The typical time to score was indicated in the manual to be less than 20 minutes, but students took up to 45 minutes to self-score. Based on the notes students wrote in the margins, they viewed the data regarding academic testing and struggled to understand that an average score was appropriate in this situation. Some students wrote out what a high score would be in the margins of the score sheet.

Another limitation was the data was collected anonymously: those students who did have scores indicating unhealthy amounts of or coping with stress could not be identified and provided with assistance.

A final limitation was that while the students wrote personal goals for their fieldwork experience during the initial meeting, this data was unable to be included in this pilot program because when the students reviewed the goals at the end of the study, they did not maintain anonymity.

Recommendations

Given the positive responses to the mindfulness-based active learning modules, it is important to continue to offer the baseline stress measures and active learning modules to students as they transition to fieldwork. Offering this program at the end of the didactic coursework may be only one of the ways of integrating this learning into the curriculum. Embedding more active learning modules around stress reduction into other coursework, especially those courses that students report finding very challenging. Utilizing non-graded optional mindfulness stress reduction practices in a variety of classes may assist students in recognizing this evidence based self-care tool. The coordinator of the interprofessional education team has expressed interest in using a similar model in their coursework and this will allow nursing, physical therapy, and podiatry students also to benefit from this model

 In reflecting upon the baseline tools there are a few areas for improvement. Providing self-assessment tools earlier in the program could be helpful in facilitating self-awareness for students around the stress of graduate school.

While it would increase the expense of this project the use of the auto score function for the Stress Profile might be a more efficient way to obtain scores and provide the students with reports that are specific to their experience. This was not explored for this study because anonymity could not be maintained within the auto score generator. If in the future anonymity was not a feature of the program then analyzing whether risk on the Stress Profile correlated with performance problems in the classroom or on fieldwork could also be explored.

The EMAS was simple to score and aligned with occupational therapy values but it did not provide detailed information about their engagement. The use of the Life Balance Inventory would allow auto scoring while providing more details to the students on the areas of their life

that are feeling balance vs. unbalance. Perhaps different assessments could be provided at different times during the education sequence, thus helping students to practice monitoring their stress levels and self-care needs.

The concerns about assisting students who lack healthy stress coping strategies in an ethical way while not violating students' right to privacy may be addressed by the use of a coded identifier and an outside person retaining the key. This could be a joint project with the student health center who offers a number of mindfulness-based workshops as well as individual counseling.

This project brought forth some important information on how to help occupational therapy students manage stress during their Level II fieldwork using online mindfulness learning modules. While the majority of students have healthy stress coping techniques and are engaged in meaningful activities, there are some students who are struggling. Providing anonymous self-assessment tools and online mindfulness education is one way we can provide insight and support to these future occupational therapists.

The profession is changing at a time when college students are experiencing increasing levels of stress and mental health symptoms. Gathering information and providing resources to occupational therapy students is part of our ethical responsibility and this project demonstrated one way to accomplish that.

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Appendices

Appendix A. Student Recruitment Template

Dear Student,

   As part of my capstone project for my doctorate at St. Catherine University I am inviting you to participate in a pilot program evaluation that examines the stress level of OTD students before and during fieldwork. Your participation in taking the surveys is optional and there will be no data collected that can personally identify you. Participation or non-participation will not impact your grade for fieldwork in any way. As a review your grade for fieldwork is based on your score on AOTA's fieldwork performance evaluation as completed by your fieldwork site fieldwork educator.

   For this pilot program evaluation, you will be asked to complete the Stress Profile and the Engagement in Meaningful Activity Survey. Both of these questionnaires have been used on other OT students at other universities. You will be asked to complete these two items at the start of fieldwork. By completing these surveys you are providing implied consent For comparison purposes, we have numbered the surveys. For example, you will note that the surveys are in a packet and each survey has the same number in the upper right hand corner. The Stress Profile has the same number as the Engagement in Meaningful Activities which has the same number as the Goal setting worksheet. This will allow comparison between Stress Profile scores and goal setting or the Engagement in Meaningful Activities. There is no tracking of who gets what number survey.

Please do not put any identifying information on the survey. In addition, there will be some mindfulness exercises embedded in your coursework. During fieldwork, you will be asked whether you found these exercises useful via anonymous surveys on Canvas.

The total amount of time to complete these surveys should be 60 minutes for the pre-fieldwork surveys, lecture and goal setting. In addition, it is estimated that completing the mindfulness activities embedded in Canvas should take no more than 15 minutes each week for 6 weeks, thus the total amount of time asked of you over the course of the semester is 150 minutes.

If you have any questions, please feel free to contact Domenique Embrey at 510-701-5990 or dcembrey@stkate.edu

Appendix B. Experimental Subject's Bill of Rights

EXPERIMENTAL SUBJECT'S BILL OF RIGHTS The rights stated below are the rights of each person who is asked to be in a research study. As an experimental subject, I have the following rights:

1. To be told what the study is trying to find out;
2. To be told what will happen to me and whether any of the procedures, drugs, or devices is different from what would be used in standard practice;
3. To be told about the frequent and/or important risks, side effects, or discomforts of the things that will happen to me for research purposes.
4. To be told if I can expect any benefit from participating, and, if so, what the benefit might be;
5. To be told of the other choices I have and how they may be better or worse than being in the study;
6. To be told what sort of medical treatment is available if any complications arise;
7. To refuse to participate at all or to change my mind about participation after the study is started. This decision will not affect my right to receive the care I would receive if I were not in the study;
8. To receive a copy of the signed and dated consent form;
9. To be free of pressure when considering whether I wish to agree to be in the study.

Appendix C. Script for presentation of surveys

Thank you for being willing to participate in a pilot program evaluation that examines the stress level of OT students before and during fieldwork. Your participation in taking the surveys is optional and there will be no data collected that can personally identify you. For this pilot program evaluation, you will be asked to complete the Stress Profile and the Engagement in Meaningful Activity Survey. Both of these questionnaires have been used on other OT students at other universities. You will be asked to complete these two items at the start of fieldwork. For comparison purposes, the surveys will be numbered. Please do not put any personally identifying information on the surveys. You will also be asked to set some personal goals around fieldwork. In addition, there will be some mindfulness exercises embedded in your coursework. After each exercise, you will be asked whether you found these exercises useful via an anonymous Canvas survey.

In the packet provided, there is Stress Profile, the Engagement in Meaningful Activities Survey and a blank paper for setting goals. The surveys are numbered solely for keeping them together.

I will be leaving the room now but once you have completed the surveys, please fasten them together with the paper clip provided and drop in the box provided in the back of the room. Professor Goli Hashemi will remain in the room to collect the surveys from the box.

Appendix D. Data Collection Instrument

Appendix D.1 EMAS

The Engagement in Meaningful Activities survey is available publicly at:
http://dolivewell.ca/wp-content/uploads/2015/05/Engagement-in-Meaningful-Activities-Survey_May-2015.pdf
Below is the survey.

Engagement in Meaningful Activities Survey*
"Below is a list of statements about your day to day activities. Please read each one carefully and choose the answer that best describes to what extent each statement is true for you. Take your time and try to be as accurate as possible."
1. The activities I do help me take care of myself.
2. The activities I do reflect the kind of person I am.
3. The activities I do express my creativity.
4. The activities I do help me achieve something which gives me a sense of accomplishment.
5. The activities I do contribute to my feeling competent.
6. The activities I do are valued by other people.
7. The activities I do help other people.
8. The activities I do give me pleasure.
9. The activities I do give me a feeling of control.
10. The activities I do help me express my personal values.
11. The activities I do give me a sense of satisfaction.
12. The activities I do have just the right amount of challenge.
1-Rarely, 2-Sometimes, 3-Usually and 4-Always

Scoring is conducted by summing the responses (ranging from 1=Rarely to 4=Always) of the 12 EMAS items for a possible score range of 12-48. Persons may be classified as perceiving the meaningfulness of their activities as being either low (EMAS < 29), moderate (EMAS 29 – 41) or high (EMAS > 41); sample means (standard deviations) for the EMAS include: college students 33.4 (5.8), post 9/11 veterans with disabilities in post-secondary education 29.7 (7.7), and community-dwelling older adults 36.4 (6.2).

Appendix D.2– Stress Profile Summary

The Stress Profile manual describes the Stress Profile as a self-assessment tool that provides scores in fifteen different areas related to stress and health risk (Nowack, 1999b). It also includes a response bias measure and a measure of inconsistent responding. The Stress Profile scales were based on the work of cognitive – transactional approach to stress and coping developed by Lazurus and his colleagues. The norms are obtained from a sample of 1,111 men and women, ages 20-68 from a variety of working situations.

The Stress Profile has 123 items and is appropriate for those who can read at an 8th grade reading level. Most people are able to complete the Stress Profile in 20-25 minutes. Scores can fall into the following ranges:

Extremely High – At least 99% of respondents got a lower score on this scale

Very High – At least 84% of respondents received a lower score on this scale

Average – At least 31% of the respondents received a higher score and at least 31% received a lower score

Low Average – At least 69% of respondents received a higher score

Very Low – at Least 84% of respondents received a high score

Extremely Low – at Least 99% of the people who took the Stress Profile received a high score on this scale.

The author cautions that when looking at Stress Profile results some scales use a high score that points to a health resource and a low score suggests a health risk. The exception to this are Stress, Type A, Negative Appraisal and the ARC item cluster which use an opposite scale with high scores indicating a health risk and low scores indicating a health resource.

The Inconsistent Responding Index (10 pairs of questions) and the Response Bias Index (5 questions) are used to identify whether the answers indicate an unusual and not consistent responding pattern.

The subtests are defined as follows:

Stress – This six item subset examines the subjects experience of daily hassles in a three-month period. It looks at health, work, personal finances, family, social obligations and environmental/world concerns. Stress is defined "as the experience of major and minor irritants, annoyances, and frustrations (hassles)" of daily living. Scores of 60 T or higher indicated high perceived levels of work and life stress over the previous 3 months. Scores that are below 40 T indicate low levels of perceived stress.

Health Habits – This area examines the specific actions the subject does to maintain and improve both physical and psychological well -being. The total number of questions for this subset is 25 with exercise (3) rest/sleep (5) eating/ nutrition (5) prevention (11) and within prevention the ARC item cluster (3). For all areas except the ARC cluster a score of 60 T or higher indicates the individual is practicing behaviors that would support health maintenance on a regular basis while scores of at least 50 T or higher indicate that the subject is at least maintaining current standards for health maintenance.

The ARC cluster is important as it specifically looks at the use of Alcohol, Recreational drugs, and Cigarettes and identifies them as presenting serious risks to health. The ARC cluster is scored separately because of the serious health risk these habits pose. A high score on the ARC item cluster indicates a "Health Risk Alert".

Social Support Network – Examines whether the respondent is satisfied with the network of people that they can count on for emotional support, advice, information, love and assistance. It

specifically inquiries about people at work and away from work. It has a total of 15 questions

and those with a score of 60T or higher tend to report higher satisfaction with their support

network than those with scores lower than 40 T

Type A Behavior – This ten-item subtest examines whether the subject has a particular pattern

of responding to the pressures of daily life or events by seeing them as challenges or threats.

Those who exhibit Type A behaviors on a consistent basis are more at risk for job burnout, or

physical illness and depression or anxiety. Those subjects with a score of 60 T or higher

indicates that the subject is exhibiting Type A behaviors more frequently than those with loser

scores.

Cognitive Hardiness – This thirty-item section looks for a sense of commitment and strong

interest in work, family or hobbies on a day to day basis. It looks for a sense of belonging with

friends, work and family. It is thought that a person with a high cognitive hardiness score views

daily life changes as challenges and not threatening. A score of 60 T or higher indicates that a

respondent believes they have control over their life and feel satisfied with their life. Those with

scores below 40 T are more likely to report feeling alienated form work and family life.

Coping Style – Examines the most common way that subject deals with work and life threats,

pressures and challenges. It does not have a summary score and for each area a score of 60 T or

higher indicates a frequent use of that strategy for coping with stress while a score of 40 T

indicates an absence of this strategy by the subject. The Coping Style section includes the

following areas:

     Positive Appraisal – Five questions on whether the subject focuses on the positive in

order to minimize pressures or challenges.

Negative Appraisal – Also, five questions and examines whether subject is focusing on the negative aspects of problems, pressures or challenges

Threat Minimization – Five questions that examine whether the subject deliberately minimizes the significance of the issues they are facing.

Problem Focus – Has four questions that seek to identify whether the subject attempts to respond to pressure or meet challenges by changing a situation or taking action.

Psychological Well- Being - This has twelve questions that look at whether the subject feels they have experienced satisfaction and psychological well-being during the last 3 months. Those with scores of 60 T or higher report themselves able to enjoy life, feel content with their family and work relationships and are satisfied with their achievements. Those with scores below 40 T are more likely to report feeling a lack of comfort in their lives. There are periods in all lives where subjects may feel discomfort but when these feelings persist over a period of time they can increase the subjects vulnerability to illness.

Interpretation of Results – The authors encourage users to use the data as important information on how to cope effectively with stress. They encourage the user to develop a personalized stress and health management program by using the data to guide areas that need work and increase awareness of how their own behaviors are impacting them

Appendix E. Template for Active Learning Modules

Throughout their Level II fieldwork experience, students are required to answer questions through an online educational platform called Canvas. For this pilot program, mindfulness questions will be embedded into the platform via assignments. These assignments are not required and do not impact a student's grade. They are solely offered as a tool to students to help them manage stress. The tools are based not only on research but also are activities that they have been exposed to in their didactic coursework throughout the program. While these activities have not been used in fieldwork portion of their education prior to this semester, if this research shows they are helpful to students they will be continued in future classes. It is for this reason that this is considered a program evaluation study.

These exercises on mindfulness will be as follows:

Exercise 1- Gatha Meditation, a Koru mindfulness exercise that focuses on breathing in and out for several minutes and being present in the moment (Rogers, 2016, p. 78)

Exercise 2 – Guided Imagery, a mindfulness exercise that helps focus the mind and reducing anxiety. Students will be given a link to a YouTube video entitled "5 minute vacation" https://www.youtube.com/watch?v=3LAmYS6kb7k

Exercise 3 – Gratitude, an exercise adapted from coursework on self-care for health care professionals (Tietz, 2017, p. 115) that has students writing 10 things they are grateful for

Exercise 4 – Limiting beliefs, an exercise (Tietz, 2017, p. 49) that has students write one belief they believe limits them and then the truth. Example is provided that has limiting belief be that student must be perfect and then truth is that they have resources to learn and that they need to keep patient safe.

Exercise 5 – Sharing compliments, an exercise that has student giving compliments three times a day for a week (Rogers, 2016, p. 174).

Exercise 6 – One good deed. One tenet of mindfulness is that behavior can lead to changes in thoughts. The one good deed exercise has students perform one good deed without any expectations and write about how it impacted the rest of their day (Rogers, 2016, p. 153).

After each exercise or activity on mindfulness there will be a link to an anonymous quiz on Canvas. Each quiz will ask the same three questions about the exercise:

1) Have you used (insert name of mindfulness activity here) prior to this week?

    a. Yes, I have used (insert name of mindfulness activity) before on a regular basis.

    b. Yes, I was exposed but did not use regularly

    c. No this is new to me

2) How often did you use the (insert name of mindfulness activity) this week?

    a. Once

    b. Between 1-3 times

    c. Daily

3) Would you use (insert name of mindfulness activity) again in the future?

    a. This question provides a space for answers.

Procedures

Using Canvas the mindfulness exercises will be added as assignments to the fieldwork course between weeks 2-11. There will be no mindfulness exercises on weeks 1, 6 and 12 as there are other assignments those weeks. The use embedded mindfulness activities on

Canvas will not be graded and students will be given anonymous surveys through Canvas on each mindfulness activity. Their responses will be collated and used as anonymous qualitative data.

Here is a sample of the survey questions for the Gatha exercise.

Questions

1) Have you been exposed to Gatha Meditation prior to this week?

☐ No this was new to me

☐ Yes in a class or in the community but I did not practice it

☐ Yes and I use it occasionally

☐ Yes and I use it regularly

2) Which of the following locations, did you Gatha meditation?

☐ Home before fieldwork

☐ At fieldwork site

☐ Home after fieldwork

☐ Other community location

3) How helpful did you find Gatha meditation?

☐ Very helpful

☐ Helpful at times

☐ Not Helpful

4) Would you use Gatha meditation again?

☐ Very Good Chance

☐ Some Chance

☐ Very Little Chance

☐   No Chance

5) Any other comments you would like to share about Gatha meditation?

Appendix F. Goal Setting worksheets

Simple worksheets were provided to students to assist them in writing goals. They were

numbered in correspondence with the Stress Profile and EMAS. Students choose from two

designs and told to use whichever tool works for them. No identifying information was

requested but students will be encouraged to use their own smart phone to take a picture of

this worksheet and reflect of their own personal goals upon completion.

Appendix G. Letter of Support

March 18, 2018
Samuel Merritt University
450 30th St. 4th floor
Oakland, CA 94609

Re: IRB Letter of Support for Domenique Embrey

Dear Institutional Review Board Chair and Members:

I am writing this letter of support for one of our colleagues, Domenique Embrey. It is our intention to support Domenique Embrey's research as described below. This support includes allowing her to invite our occupational therapy students to participate in her research, use online resources such as Canvas, allow access to classrooms and offices normally available to her, and allow her to use the statistical supports available to faculty of Samuel Merritt University.

Research Overview

Project Summary: The purpose of this study is to provide program evaluation in the area of occupational therapy student stress within an entry level master's and doctoral program at Samuel Merritt University and provide active learning experiences to help students manage stress on Level II fieldwork.

This research project plans to assess occupational therapy student stress so that a baseline can be established for ongoing monitoring of master's level and doctoral level occupational therapy student stress at Samuel Merritt University. For this study, the participants will be given the Stress Profile and the Engagement in Meaningful Activities Survey at the beginning of their clinical rotation. Specific mindfulness exercises will be added to the coursework that students complete online during their coursework. At the conclusion, of fieldwork, the Stress Profile, the Engagement in Meaningful Activities, and a follow up questionnaire about the mindfulness exercises will be administered.

Objectives

The long-term objective of this doctoral project is to monitor student stress in the occupational therapy educational program at Samuel Merritt University and provide active learning experiences to help students manage stress on Level II fieldwork.

Background and Rationale

Many health professions monitor non-academic factors like stress that may impact student performance in clinical education and fieldwork. Other health professions have monitored stress as students' progress through the program and conduct research to monitor trends and baseline levels in the progression. At this time, occupational therapy accreditation standards and guidelines do not include recommendations for monitoring student stress. There are a few studies in occupational therapy that document baseline levels of stress in students. To date, Samuel Merritt University has not evaluated student stress during the program and yet the informal reported level of stress from our students has increased as well as the reports of stress related performance on fieldwork.

Sincerely,

Kate Hayner, EdD, OTR/L   Craig Elliott PhD
Associate Professor and Chair   Assistant Vice President
Department of Occupational Therapy   Enrollment and Student Services
Samuel Merritt University   Samuel Merritt University
Oakland, CA   Oakland, CA
khayner@Samuelmerritt.edu   celliott@samuelmerritt.edu
510-879-9279   (510) 879-9252

Appendix H. CITI Certificates

H.1 Embrey Completion Report

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)
COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details.
See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Domenique Embrey (ID: 5348637)
- **Institution Affiliation:** St. Catherine University (ID: 2557)
- **Institution Email:** dcembrey@stkate.edu
- **Institution Unit:** Occupational Therapy
- **Phone:** 5107945990

- **Curriculum Group:** Social & Behavioral Research - Basic/Refresher
- **Course Learner Group:** All IRB applicant investigators and advisors: Social and Behavioral Research
- **Stage:** Stage 1 - Basic Course
- **Description:** Choose this group to satisfy CITI training requirements for investigators and staff involved primarily in Social/Behavioral Research with human subjects.

- **Record ID:** 18544430
- **Completion Date:** 30-Jan-2016
- **Expiration Date:** 29-Jan-2020
- **Minimum Passing:** 80
- **Reported Score*:** 93

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
History and Ethical Principles - SBE (ID: 490)	30-Jan-2016	5/5 (100%)
Defining Research with Human Subjects - SBE (ID: 491)	30-Jan-2016	4/5 (80%)
Assessing Risk - SBE (ID: 503)	30-Jan-2016	5/5 (100%)
Informed Consent - SBE (ID: 504)	30-Jan-2016	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	30-Jan-2016	4/5 (80%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	30-Jan-2016	5/5 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify?k1d0xd791-881b-4c0a-9a88-d6d6f5fa46b-18544430

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

H.2 Bass Completion Report

CITI PROGRAM

Completion Date 18-Nov-2017
Expiration Date 17-Nov-2021
Record ID 23707152

This is to certify that:

Julie Bass

Has completed the following CITI Program course:

Social & Behavioral Research - Basic/Refresher (Curriculum Group)
All IRB applicant investigators and advisors: Social and Behavioral Research (Course Learner Group)
2 - Refresher Course (Stage)

Under requirements set by:

St. Catherine University

Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w64cc1180-c2ea-425b-acca-cdc7602858b1-23707152