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Abstract

With the rigor of occupational therapy programs increasing to meet the demands of the diverse healthcare system, students are reporting stress and anxiety at an increasing rate. This mixed methods study assessed the outcomes of occupational therapy students who participated in a comprehensive mindfulness program that included interventions on grit, gratitude practice, and growth mindset. Twenty-four occupational therapy students participated in the 10-week mindful-based intervention program prior to a Level I fieldwork experience. Data was collected pre- and post-intervention using the 12-item Grit Scale, the Gratitude Questionnaire (GQ-6), the Motivated Strategies for Learning Questionnaire (MSLQ), journal entries, and a satisfaction survey at the completion of the program. Student outcomes included statistically significant changes in grit and gratitude. While growth mindset was not statistically significant, there were meaningful changes in reported self-regulation, both in the classroom and clinical experience. Infusing mindful-based curriculum into occupational therapy education can have a positive effect on both the occupational therapy student and subsequent clinical experiences, ultimately carrying over to therapeutic client interactions. Educators within academia and in clinical settings can utilize similar interventions to ensure students are holistically prepared to meet the demands of the current healthcare system.

Keywords

Occupational therapy, fieldwork education, mindfulness, gratitude

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Mindfulness in the Occupational Therapy Classroom: Infusing Grit, Gratitude Practice, and a Growth Mindset into Occupational Therapy Education

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ABSTRACT

With the rigor of occupational therapy programs increasing to meet the demands of the diverse healthcare system, students are reporting stress and anxiety at an increasing rate. This mixed methods study assessed the outcomes of occupational therapy students who participated in a comprehensive mindfulness program that included interventions on grit, gratitude practice, and growth mindset. Twenty-four occupational therapy students participated in the 10-week mindful-based intervention program prior to a Level I fieldwork experience. Data was collected pre- and post-intervention using the 12-item Grit Scale, the Gratitude Questionnaire (GQ-6), the Motivated Strategies for Learning Questionnaire (MSLQ), journal entries, and a satisfaction survey at the completion of the program. Student outcomes included statistically significant changes in grit and gratitude. While growth mindset was not statistically significant, there were meaningful changes in reported self-regulation, both in the classroom and clinical experience. Infusing mindful-based curriculum into occupational therapy education can have a positive effect on both the occupational therapy student and subsequent clinical experiences, ultimately carrying over to therapeutic client interactions. Educators within academia and in clinical settings can utilize similar interventions to ensure students are holistically prepared to meet the demands of the current healthcare system.

Introduction

College-age students today suffer from anxiety at a much higher rate than generations that precede them (American Psychological Association, 2018). Student anxiety and stress increases during the first semester and continues to fluctuate throughout the academic course (Bayram & Bilgel, 2008; Bewick et al., 2010). Academic performance, pressure to succeed, and post-graduate plans cause the most stress and anxiety for colleges students (Beiter et al., 2015). Students who report anxiety also report lower self-efficacy, decreased self-esteem, and low-stress tolerance, which can impact academic success and clinical performance (Artino, 2012; Derald et al., 2002). Students in allied health (AH) professions report mild to extremely severe mental health symptoms for anxiety and/or stress (Almhdawi et al., 2018). Anxiety increases as the AH students prepare to enter their clinical training (Almhdawi et al., 2018). While specific data is lacking around occupational therapy students, based on the rigor of the programs, it can be assumed they fall into many of the above statistics. Learning to better manage stress and anxiety would improve student academic success and clinical performance.

One evidenced-based approach that allows students to cope with stress and anxiety in a positive manner and achieve greater educational outcomes is mindfulness (with a focus on grit and growth mindset) and gratitude-based training. There is early indications that mindful and gratitude-based teachings result in positive outcomes for students (Bamber & Schneider, 2016; Gilmartin et al., 2017). Studies have shown that mindfulness training of health care professionals is associated with “connection to self and patient, attentive listening, error recognition and clinical insight” (Gilmartin et al., 2017, p. 1). Furthermore, while positively impacting the mental wellbeing of healthcare professionals, mindfulness is proven to reduce risk of burnout (Goodman & Schorling, 2012; Luken & Sammons, 2016), facilitate greater awareness and less distraction in clinical settings (Epstein et al., 2008; Zeidan et al., 2010) and positively impact patient-care outcomes relative to safety and reduction of error (Pezzolesi et al., 2013; Sibinga & Wu, 2010; Westbrook et al., 2010). Mindfulness practices are not exclusive to the training of medical and health professionals. The military, professional sports and other organizations are also gravitating towards using these methods to sustain success, develop resiliency, and improve quality of life within their organizations (Levey & Levey, 2019). Infusing mindfulness training with a focus on grit and growth mindset within the preparation of occupational therapy students may be beneficial for their future success.

Mindfulness

Mindfulness is a practice of clarity in consciousness, which is experienced in present time with no outside distractors (Brown & Ryan, 2003). It is a tool that allows people to be more aware of their physical and emotional state. The benefits of mindfulness include psychological and physical advantages such as improved mood, reduction in anxiety, an increased immune system, and overall improved feelings of increased well-being (Howell et al., 2008; Murphy et al., 2012; Zeidan et al., 2010). Mindfulness practices include mindful eating, yoga, mindful chores, body scans to promote body awareness, meditation, and much more (Dambrun, 2016; Nelson, 2017; Schmid et al., 2016; Singleton et al., 2014). Researchers’ findings suggest that even four days of

meditation training can enhance sustained attention; benefits that have previously only been connected to long-term meditators (Zeidan et al., 2010). Research shows that mindfulness practice is an effective method for regulating emotions. Being able to control one's emotions plays a significant role in being resilient, which in turn is a key component of grit (Duckworth & Gross, 2014; Oriol et al., 2017). In essence, the practice of mindfulness can be viewed as an important stepping-stone toward the discovery of grit.

Grit

Grit is a personal trait or quality that is defined as “perseverance and passion for long-term goals” (Duckworth et al., 2007, p. 1087). A gritty individual is one who is tenacious towards goals and maintains effort over time, despite challenges and failures. It is described as a key trait shared by most well-known leaders (Duckworth et al., 2007; Schimschal & Lomas, 2018). In a study of cadets at West Point, researchers determined that grit is a significant predictor of success and ability to reach one's goals. West Point cadets who scored highest on the Grit Test were 60% more likely to succeed than their peers (Duckworth et al., 2007). The notion of grit and mental toughness was also studied within Ivy League undergraduate students where students who had more grit also had higher grade point averages than their peers, even though these same students had lower standardized test scores (Duckworth et al., 2007). Other studies reported outcomes that “indicate that medical students have high levels of grit” (Miller-Matero et al., 2018, p. 111). Hodge et al. (2017) reported that individuals with higher grit were more likely to have higher engagement and greater academic productivity. The literature indicates that individuals with grit achieved difficult goals not solely on talent alone, yet sustained and focused application of talent over time. The concept of valuing sustained effort, perseverance, and the plasticity of talent is the idea behind growth mindset.

Growth Mindset

In addition to mindful-based training, the concept of increasing grit through growth mindset is also linked to increased student performance, self-awareness, self-regulation, and motivation (Dweck, 2007). Dweck defined growth mindset as “the belief that intelligence is not fixed and can be developed” and is a comparably strong predictor of achievement and success in students' lives (Claro et al., 2016, p. 8664). Hochanadel and Finamore (2015) found that students who demonstrated growth mindset valued effort and perceived ability as a malleable skill. In contrast, they also reported that a fixed mindset is a belief that one's talents are due to inborn traits (Hochanadel & Finamore, 2015). A meta-analysis of different types of interventions on self-regulation found that across 113 different studies, mindset interventions were significant predictors of goal setting (Burnette et al., 2013). Komarraju and Nadler (2013) found that of 407 undergraduate students, subjects in the high self-efficacy group maintained a growth mindset. The researchers stated that the integration of a growth mindset and self-efficacy in classroom curriculum can increase academic achievement. Mindset theory, in particular the growth mindset approaches, is noted to be beneficial in the preparation of other health professionals such as physicians and pharmacists (Cooley & Larson, 2018; Klein et al., 2017) yet has not been widely studied in occupational therapy. Dweck

(2007) discovered that a person's belief about themselves and their goals affects their grit indicating individuals who have more of a growth mindset tend to be grittier.

Gratitude

The sentiment of *gratitude* is experienced when an individual asserts that something good has happened to him or her, and recognizes that another person was principally responsible for that benefit (Watkins et al., 2012). The emotion of gratitude is closely connected to psychological well-being. Studies linked academic success with psychological well-being and adaptive coping strategies (Hixenbaugh et al., 2012; Lyubomirsky et al., 2005). Individuals who are grateful are also more likely to positively view personal growth. In one study, undergraduate students who kept gratitude journals on a weekly basis were more content with their lives as a whole and were more optimistic about the upcoming week than individuals who focused on negative or neutral occurrences of the week (Emmons & McCullough, 2003). If educators can teach students to think of negative experiences as something to be thankful for, and a necessary step in learning, students can embrace challenges and a growth mindset.

Research on the impact of mindfulness, growth mindset, and gratitude on stress and anxiety for college students continues to grow, however, limited information exists on highly rigorous academic programs such as occupational therapy.

Purpose

Occupational therapy programs have targeted didactic and professional training requirements due to accreditation which provide benchmarks for academic rigor. Academic standards inherently require active learning of meaningful content using higher-order thinking with graded cognitive expectations in the context of the profession (Draeger et al., 2013). The literature related to mindfulness, growth mindset, and gratitude suggest a multitude of ways for occupational therapy students to healthily cope with stress. As of 2014, mindfulness is offered in the majority of medical schools in the United States, but not in most allied health programs, such as occupational therapy (Barnes et al., 2017).

The research question guiding this study was:

What is the effect of teaching mindful and gratitude based practice to occupational therapy students on their self-report of grit, gratitude, and a growth mindset, in regards to fieldwork education?

The researchers hypothesized that after a 10-week mindful-based intervention protocol built into a clinical reasoning and fieldwork education course, students would demonstrate growth in each of the identified areas following a one-week, Level I fieldwork experience.

Methods

Study Design

The Institutional Review Board (IRB) granted approval prior to the start of the study. The study utilized a mixed methods approach. Quantitative and qualitative data were collected simultaneously using a concurrent embedded strategy (Creswell & Clark, 2017). The design offers several strengths, such as the ability to generate and test theory, to confirm findings, and to understand the research topic with a greater breadth and depth (Creswell & Clark, 2017). Further explanation of the procedures and data collection is offered below.

Procedures

The study was embedded in a graduate-level occupational therapy course focused on clinical reasoning and fieldwork education. Table 1 provides an overview of the 10-week program.

Table 1

*Overview of Mindfulness Protocol**

Week of Course	Topic	Objectives
Week 1	Introduction to Mindfulness-Part 1	Module on topics and relevance to clinical reasoning/ fieldwork education <ul style="list-style-type: none"> • What is mindfulness and why is it important? • 5 min practice (grounding meditation) • Homework: Issue journals, discuss “committing to practice”
Week 2	Connecting Mindfulness and Growth Mindset in Education-Part 2	Module on connection of mindfulness to growth mindset <ul style="list-style-type: none"> • Understanding fixed mindset • Homework/practice: Challenging your journey: Mandala/coloring activity
Week 3	Introduce Gratitude Mindful/Gratitude Journaling	Introduce gratitude <ul style="list-style-type: none"> • How do we use gratitude in our lives? • Foundations of mindfulness and gratitude in clinical practice • Revisit journals and discuss the addition of gratitude prompts (both during coursework and fieldwork) • Walking meditation
Week 4	Mindful Eating	<ul style="list-style-type: none"> • Discuss homework and common barriers to practice • Mindful eating activity & clinical connection • Homework: mindful eating

Week 5	Meditation	<p>The neuroscience of mindfulness & meditation</p> <ul style="list-style-type: none"> • Mindfulness meditation • Homework: Mindful chores
Week 6	Body Scan	<ul style="list-style-type: none"> • Instructor guided body scan/use in clinic • Resources handout • Homework: practice body scan
Week 7	Yoga	<ul style="list-style-type: none"> • Being present in the moment • Standing yoga practice • Homework: standing yoga practice
Week 8	Pleasant/Unpleasant Events (Grit)	<ul style="list-style-type: none"> • Discuss pleasant/unpleasant events • Meditation with difficult emotions • Homework: complete events chart (part of journal), body scan
Week 9	Willingness to Learn and Accept	<p>Understanding acceptance and letting go</p> <ul style="list-style-type: none"> • Download Breathe App and choose a meditation • Overview of 3 P's: Personalization, Pervasiveness, Permanence
Week 10	Prep for Fieldwork	<ul style="list-style-type: none"> • Gratitude prompts during fieldwork • Letter to patient or Fieldwork Educator • Connections to clinical reasoning

*Modified from Kindel, 2018; Willgens & Hummel, 2016; Wolf & Sherpa, 2015

Interventions took place in the classroom once a week for 15-30 minutes. Interventions are based in evidence regarding improving grit, a growth mindset, self-regulation, practicing gratitude, and overall mindful-based training (Kindel, 2018; Willgens & Hummel, 2016; Wolf & Serpa, 2015). After 14-weeks of didactic curriculum, all students engaged in a one-week (40 hour), Level I fieldwork experience in a traditional practice setting. Over the course of the one-week fieldwork, all students were required to complete eight journal reflections tied to learning objectives in the course.

Participants and Sampling

Participants included twenty-four purposely sampled individuals from a cohort of twenty-seven entry-level masters of occupational therapy students during the third semester of their professional education (three students opted out before the final post assessment). The homogenous group was chosen for characteristics of being in the clinical experiential phase of an occupational therapy program and are representative of the profession as a whole (American Occupational Therapy Association, 2018). The sample of twenty-four students included 92% female, all Caucasian, with an age range between 20-22 years. Prior to the initiation of the study, a graduate research assistant informed the students of the details of the study including the research questions and procedures, to eliminate any undue coercion from the faculty involved. The mindfulness

interventions embedded in the didactic portion of the class were a required component of the clinical reasoning course; therefore, all students enrolled in the course participated in the educational activities. The activities were non-graded, ensuring that participation in the study did not impact the grades for the course. Information regarding how the responses for each survey provided anonymous data for analysis was provided to the students enabling them to opt in or out of the data collection at any time during the study.

Instrumentation

The Grit Scale, developed by Angela Duckworth with established construct and predictive validity, is designed to identify traits that may be predictive of success (Duckworth et al., 2007). The version for the study has a total of 12 items and is self-rated on a 5-point scale. The scale has well-documented reliability and validity. For example, the Grit Scale demonstrated high internal consistency ($\alpha = 0.85$) for the overall scale and for each factor (Duckworth et al., 2007). Positive relationships between grit and outcomes, such as overcoming obstacles and diligence, provide additional evidence of criterion validity.

The Gratitude Questionnaire-Six-Item Form (GQ-6) is a six-item self-report questionnaire designed to assess individual differences in the proneness to experience gratitude in daily life (McCullough et al., 2004). The self-report requires respondents to answer each item on a 7-point Likert-type scale. According to the developers, psychometrics of the original GQ is satisfactory (McCullough & Emmons, 2002). Additional studies have found the tool to be reliable and valid (Giacalone et al., 2005; Kashdan et al., 2009).

Finally, the Motivated Strategies for Learning Questionnaire (MSLQ) measures the types of learning strategies, self-efficacy for learning and performance, self-regulation, management of effort, and academic motivation used by college students (Pintrich et al., 1993). The constructs of motivation and self-regulated learning in this tool are closely aligned with the core of growth mindset theory. The 81-item instrument uses a 7-point Likert scale. The reported internal reliability of the scale on the original validation study are between $\alpha = .52$ for the help-seeking section and $\alpha = .93$ for self-efficacy (Pintrich et al., 1993).

Data Management and Analysis

The quantitative data were collected using pretest-posttest measures to gain an understanding of students' change in grit, gratitude, and growth mindset/self-regulation following a 10-week educational intervention. The data collection occurred at two points. The first data collection occurred prior to the educational intervention, at the start of the Spring semester. The second data point occurred immediately following the Spring semester, when students had finished the clinical reasoning course sequence with mindfulness interventions and all subsequent Level I fieldwork experiences. In order to identify students' quantitative change in grit, gratitude, and growth mindset, a post-test analysis was completed. Using the Statistical Package for the Social Sciences version 25, frequencies, means, and standard deviations were computed and examined for

each test (IBM Corp, 2017). To determine the level of change in students following the intervention, *t* tests comparing pretest and posttest scores were computed.

In addition to the quantitative data, to understand the full experience of students throughout the interventions, qualitative data were reviewed and analyzed through concept-driven coding. The qualitative data were gathered through the use of journal writing during a fieldwork experience where they had the chance to reflect/implement some of the practices and a satisfaction survey. The open-ended satisfaction survey related to the specific educational modules on grit, gratitude and growth mindset. Criteria for pulling specific journal entries included any reference to the G3OT concepts. Thirteen journal entries met this criterion and were coded accordingly. All twenty-four of the open-ended surveys were also coded, using the concept-driven method. The information complemented the findings of the pre/post assessments by adding rich descriptions of the students' experience throughout the interventions.

Content analysis began with initial coding of data by each researcher separately. After the initial coding, the researchers contributed toward the development of codes, organization of the categories, and provided a structure for the overall themes (Berg, 2004). The categories were refined by the researchers into broader themes consistent with the literature and supported by the quotes (Berg, 2004). The four themes that emerged as a result of this process included: *Resilience, Mindfulness, Gratitude Behaviors, and Learning Strategies*. For the purposes of this manuscript, only the most salient quotes from each theme were used to describe the findings, aligned with the quantitative data below.

Results

The organization and analysis of data will look at each of the artifacts individually, then the researchers will further examine the potential interaction and impact of all data within the discussion. The analysis of overall quantitative assessment scores are represented in Table 2.

Table 2

Means and Standard Deviations for the Grit, Gratitude, and Growth Mindset Measures

Assessment Measure	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	<i>t</i>	<i>p</i>
Grit Scale	3.55 (0.466)	3.78 (0.369)	-3.18	.000*
GQ-6	38.74 (2.97)	40.09 (2.63)	-2.96	.000*
MSLQ	232.78 (21.0)	235.74 (22.1)	-1.19	.12

**p* < 0.05

Themes derived from the qualitative coding process were found to support this data, and will be further connected in the discussion.

Grit

Table 3 indicates the frequency in scores over the course of the pre- and post-tests.

Table 3

Frequency Distribution of Grit Scale Pretest and Posttest Results

Score	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
1-No Grit	0	0	0	0
2	5	20.83	1	4.17
3-Average	15	62.50	14	58.33
4	4	16.67	9	37.50
5-Extremely Gritty	0	0	0	0
Total	24	100	24	100

In the sample, report of grit increased after interventions and fieldwork from $M=3.55$ ($SD=.466$) to $M=3.78$ ($SD=.369$). The change was significant, $t(22) = -3.18$, $p = 0.00$.

The qualitative data also indicated increase in grit, or the theme of *Resilience*. The student journal comments also identified the use of *Mindfulness* as a way to stay focused on achieving goals during the week of fieldwork. For example, "I experienced stress during the first two days due to outside responsibilities but practiced mindfulness such as deep breathing and clearing my mind to ensure I would not get overwhelmed."

Another student shared,

I responded to this sense of overwhelming by taking a minute to read some scripture related to stress. After calming down through this practice, I decided to tackle the tasks one step at a time and not be completely overwhelmed by looking at the whole picture. This practice enabled me to get through the entire work week on top of all other commitments I had in the evenings.

Gratitude

The scores on the GQ6 were hypothesized to increase after intervention. Table 4 indicates the frequency in scores over the course of the pre- and post-tests.

Table 4

Frequency Distribution of Gratitude Scale Pretest and Posttest Results

Percentile	Score	Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
Bottom quartile	≥34	4	16.67	1	4.17
25 th percentile	35-37	5	20.83	3	12.50
50 th percentile	38-40	3	12.50	4	16.66
75 th percentile	41+	12	50.0	16	66.67
Total		24	100	24	100

With this group of participants, gratitude increased after interventions and fieldwork from $M=38.74$ ($SD=2.97$) to $M=40.09$ ($SD=2.63$). The change was significant, $t(22) = -2.96$, $p = 0.00$. In the qualitative data, students also indicated in the journal entries an increase in *Gratitude Behaviors* throughout the week of fieldwork. For example, one student shared in a journal entry, “As I have noticed the gratitude within the patients over the week for the therapists that have been helping them, I was mindful of how much I have to be thankful for in my life including my own health.” Another student noted, in response to the fieldwork education itself, “I engaged in gratitude practices every day by thanking my Fieldwork Educator and the other professionals around me for giving me the opportunity to learn. I also thanked patients after working with them.”

Growth Mindset

The MSLQ was hypothesized to increase after intervention. Results indicate an increase in growth mindset after interventions and fieldwork from $M=232.78$ ($SD=21.0$) to $M=235.74$ ($SD=22.1$); however, this change was not significant, $t(22) = -1.19$, $p = 0.12$. The qualitative results identified representation of growth mindset and unique *Learning Strategies* in some of the students’ journals, in addition to the particular statements of the MSLQ. For example, one student stated: “I tried to take an hour after each day to be mindful and reflect on what I learned that day and how I can see myself using this new knowledge in the future”. This was consistent with some of the highest ranked statements in the post-MSLQ, such as, “Before I begin studying I think about the things I will need to do to learn” and “Understanding this subject is important to me.”

Discussion

Grit

Grit is a concept that is receiving more attention in a wide variety of disciplines. In the occupational therapy field, which tends to be highly rigorous, grit and resilience can be offered as possible explanations for students who succeed in such high-pressure programs (Stoffel & Cain, 2018). In addition to this success, occupational therapy educators strive to push students to think critically regarding highly complex clients, yet still be able to overcome the stress and difficulties of the healthcare environment as a

workplace. As evidenced by the Grit scale scores, the ability of the students to grow in terms of grit is of particular importance, given the nature of the upcoming clinical rotations. The quantitative data is congruent with the student journals which indicated strong themes in persistence, goal setting, and personal achievement. The students shared comments within the journals that described the ability to personally engage in mindful practice to assist in managing workload and stress. The occupational therapy students' ability to recognize grit also demonstrated an increased level of self-awareness that is key to maintaining composure in any professional setting.

Gratitude

The results of this study indicate the occupational therapy students' means fell in the average to high range for gratitude, as compared to similar groups of United States college students (Kashdan et al., 2009; McCullough et al., 2002). Results may be due to occupational therapy students tending to have very passionate and unique reasons for entering the profession. The nature of the work itself can also have a profound impact on students' beliefs and gratitude practice. In the qualitative data, students indicated an increase in gratitude following intervention through themes of overall well-being, positive relationships, and being thankful for opportunities provided.

One student discussed the significant personal impact gratitude practice had on her overall mindset, "I have started listening to my gratitude more, journaling each day... I think I have learned to let go of a lot of shame during this semester, and have started to feel more empowered."

Growth Mindset

Growth mindset did increase after intervention, but the change was not significant. Other research connects growth mindset with both motivation and self-regulation of learning (Cavanagh et al., 2018; Friese & Hofmann, 2016; Mrazek et al., 2018). Friese and Hofmann (2016) analyzed the differences between mindfulness scores and the ability of participants to self-regulate desires and temptations. The study found increased mindfulness actually created less of a desire to resist temptation; in other words, the more in tune the participant was with his/her environment, the easier it was to self-regulate. For example, two of the lower scoring statements on the MSLQ were: "*I worry a great deal about tests*" and "*When work is hard I either give up or study only the easy parts*". This indicated students may have been able to increase self-regulatory capacities yet did not connect that with their actual motivation to learn at this point in the curriculum.

Growth mindset is defined as "the belief that intelligence is not fixed and can be developed" and is a comparably strong predictor of achievement and success in students (Claro et al., 2016, p. 8664). The researchers found the students frequently discussing within the journals aspects of a growth mindset such as self-awareness, motivation, and a positive assessment of their own performance. The journal statements demonstrate a more advanced level of critical thinking and reflection on content, which aligns with a flexible growth mindset.

Limitations and Future Research

The limitations of the study mainly stem from the purposive sample and the lack of diversity in gender, age and race. However, students who participated in this study were representative of the student population in similar sized occupational therapy educational programs (American Occupational Therapy Association, 2018). The study also involved the findings of one cohort of students from a private, catholic academic institution in the northeast, and may or may not reflect the behavior and attitudes of other occupational therapy students in different geographical areas or types of institutions. It would be recommended to repeat this study with a larger, more diverse group of students in gender, age and race. An additional limitation of the study is time. The students who participated in the study did so over the course of one-semester, and aligned with a one-week, Level I fieldwork experience. It may also be beneficial to explore the impact of the studied interventions within a more intensive, longer-term experiential experience, such as level II fieldwork, or provide a comparison between the two levels of fieldwork. Finally, all participants in the study underwent the same experimental protocol due to the nature of the course having the educational intervention built into the curriculum. Future studies could be designed to include a control group to rule out other factors which may influence the results of the study.

Implications for Practice and Education

The results of this study contribute to the existing body of literature surrounding mindfulness and gratitude-based interventions, and have the following implications for both occupational therapy educators and practitioners:

- Infusing **mindfulness and gratitude-based** practices in the classroom can have a positive effect on the occupational therapy student.
- Teaching occupational therapy students about **grit** can increase student engagement and performance.
- Nurturing a **growth mindset** in the classroom can impact the self-regulation of the learner.

To foster these implications, educators can implement a similar 10-week program as presented in this study and meet the wellbeing needs of many students in their classroom.

Conclusion

Mindfulness and gratitude-based trainings have expanded into the private sector, military, professional sports organizations, medical education and K-12 Schools. Due to the diverse practice settings that train and hire occupational therapy students, infusing these practices into occupational therapy professional curricula is essential. The use of mindfulness has the potential to impact the mental well-being of practitioners, which in turn can positively impact patient-care outcomes. The study informs occupational therapy educators and professionals regarding the impact of mindfulness and gratitude-based trainings on occupational therapy students' self-perception of gratitude, grit and growth mindset. The outcomes of the study support the value of more rigorous research to explore this topic.

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