Utilizing Mindfulness Intervention to Foster Emotional Intelligence in Occupational Therapy Doctorate Students

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Abstract

Background: Emotional intelligence (EI) is the ability to acknowledge, understand, and appropriately express one's own emotions and the emotions of others, and formulate an appropriate response. Occupational therapy practitioners need to possess EI as they interact with clients within emotionally demanding environments. One way to promote EI is through mindfulness. Literature suggests that occupational therapy students could benefit from opportunities within their educational curriculum to increase their EI; however, there is limited evidence describing interventions used to foster EI growth in occupational therapy students. Purpose: The purpose of this study was to determine the effectiveness of mindfulness sessions in fostering EI within first year occupational therapy doctorate (OTD) students, and to explore the meaning and impact of these sessions on the students. Methods: First year students from Belmont University's OTD program were recruited (n = 24) to participate in six, 30-minute guided mindfulness sessions held once a week or participate in the control group (n = 11). Preand posttest measures were taken using the Trait Emotional Intelligence Questionnaire - Short Form (TEIQue-SF), with a reflection after the final session. Results: There was no significant difference in the total mean EI scores before and after mindfulness intervention, nor when compared to the control group. However, individual item analysis revealed a significant increase in two items: "I'm normally able to 'get into someone's shoes' and experience their emotions" (p = .037), and "I find it difficult to bond well even with those close to me" (p = .045). There was also a statistically significant increase in emotionality factor scores (p = .026). Although the intervention appeared to produce these significant differences, further research is strongly encouraged.

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Introduction

Occupational therapy practitioners need to possess both technical and non-technical skills to optimize client outcomes and to develop collaborative relationships with clients and other healthcare professionals (Thomas et al., 2018). Technical skills are skills that are required for physical examination, synthesis, and application of an appropriate intervention. Non-technical skills, or soft skills, however, can enhance interactions with both clients and other healthcare professionals. These skills also help occupational therapy practitioners maintain their health and well-being in demanding environments that require long hours of being emotionally and physically present with clients (Murden et al., 2018; Shutte & Malouff, 2011; Thomas et al., 2018). These non-technical skills can include intrapersonal and interpersonal skills such as leadership, conflict resolution, critical thinking, communication, teamwork abilities, and emotional intelligence (EI) (Accreditation Council for Occupational Therapy Education, 2018; Thomas et al., 2018).

EI refers to an individual's ability to distinguish and manage their own emotions as well as others' emotions (Goleman, 2006). Four key components related to EI include self-awareness, self-management, social awareness, and relationship management (Bradberry & Greaves, 2009). Possessing EI is particularly important for occupational therapy practitioners as EI can enhance how the therapist engages with clients and can therefore increase client-centered practice (Andonian, 2017; Goleman, 2006; McKenna & Mellson, 2013; Perkins & Schmid, 2019; Thomas et al., 2018). EI can also help occupational therapy practitioners collaborate with the interdisciplinary team leading to more efficient patient care, positive collegial relationships, and reduced risk of burnout (Delpasand et al., 2011; Faguy, 2012; Sadri, 2012; Testa &

Sanganjanavanich, 2016; Thomas et al., 2018). Because healthcare settings can be marked with stress and high intensity, fostering EI in occupational therapy practitioners can help them to function well in stressful situations leading to resilience and a constructive workplace environment (McKenna & Mellson, 2013; Murden et al., 2018). Many healthcare educational programs, including nursing and pharmacy, have implemented EI training to help their students develop these skills before moving into practice (Cox, 2018; Hall, et al., 2015; James, 2018).

One way to foster EI is to practice mindfulness (Kaoun, 2019; Miao et al., 2018; Snowden et al., 2015). Mindfulness is defined as "...a receptive attention to and awareness of internal and external experiences as they occur" (Brown et al., 2007, p. 212), allowing the individual to elicit more flexible and unbiased feedback (Brown et al., 2007; Brown & Ryan, 2003; Wang & Kong, 2014). By taking the time to stop and examine one's own emotions and reactions to various circumstances, individuals can appropriately acknowledge their feelings and appropriately respond to the situation and others around them (Miao et al., 2018; Wang & Kong, 2014).

While the literature supports including content related to EI in occupational therapy educational curriculums, there are limited studies that assess the effectiveness of mindfulness interventions to help foster EI in occupational therapy students (Andonian, 2017; Faguy, 2012; Gura, 2010; McKenna & Mellson; 2013; Reid, 2013; Stew, 2011). The purpose of this study was to determine the effectiveness of mindfulness sessions in fostering EI with first-year occupational therapy doctoral (OTD) students, and to explore the meaning and impact these sessions had on the students. The researchers hypothesized that students who participated in the mindfulness sessions would have increased scores on an EI measure from pre-test to posttest, and that these posttest scores would be higher compared to a control group.

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Research Design

The study used a concurrent mixed methods approach, with repeated measures quantitative evaluation and a qualitative descriptive component. Pre-test and posttest comparisons were made within groups and posttest to posttest comparisons were made between the mindfulness intervention and control groups. Study proposal approval was granted by the Belmont University Institutional Review Board.

Participant Recruitment

Participants for this study were recruited from first year students in the university's OTD program. A total of 38 students were invited to participate in the study. The inclusion criteria included any member of the specified cohort and the exclusion criteria was any individual who was not a member of the cohort. The researchers invited students to participate via an in-person announcement during a class taken by only first-year OTD students. The announcement included an explanation of mindfulness, the evidence-based reasons for why mindfulness practice could be beneficial, and a description about study expectations (e.g., time commitment, session attendance, and completion of assessment tools). Interested students were asked to put their names and contact information on a sign-up sheet. A follow-up recruitment email, which included information about the study, was sent by the primary investigator to garner additional participants. Recruitment of the control group occurred in conjunction with the end of the mindfulness sessions and when the experimental group completed the posttest. An associate investigator invited those in the same OTD cohort who had not already participated in the study as part of the mindfulness group to be part of the control group.

Instrumentation

Instruments used for data collection in this study included a demographics form, the Trait Emotional Intelligence Questionnaire (TEIQue-SF), and one open-ended qualitative question. The information gathered from the demographics form included the participant's age, primary language, current year in the OTD program, undergraduate major, experience caring for others, and prior EI or mindfulness training.

To measure EI, the TEIQue-SF was used (Petrides & Furnham, 2006). The 30-item short form questionnaire was derived from the EI inventory created by Petrides and Furnham (2003), was designed to measure global trait EI (Petrides & Furnham, 2006), and demonstrated acceptable psychometric properties (Cooper & Petrides, 2010; Mikolajczak et al., 2007). Participants rated their agreeance to each statement using a 7-point Likert scale (1 = *completely disagree*, 7 = *completely agree*). The questionnaire contained four global EI items. The remaining 26 items were categorized into one of four factors (emotionality, self-control, sociability, well-being) that contribute to EI (Petrides, 2009; Zampetakis, 2011). Emotionality refers to an individual's ability to perceive and react to their own emotions as well as the emotions of others. Self-control is an individual's ability to control impulses as well as internal and external stress. Sociability is an individual's ability to communicate and interact with others in a positive manner. Lastly, well-being refers to an individual's overall happiness and fulfillment (Petrides, 2009). Participants were also asked one open-ended qualitative question: Describe the meaning and impact of participating in the mindfulness sessions for you.

Data Collection

Prior to the first mindfulness session, intervention participants completed the demographics form and TEIQue-SF pre-test. Following the last mindfulness session, the TEIQue-SF was readministered as a posttest and the mindfulness intervention group participants responded to the qualitative question. Control group participants completed the demographics

form and TEIQue-SF the same day as the mindfulness intervention group participants completed the posttest assessment. For confidentiality to be maintained, but to allow pre and post testing to be correlated, participants were assigned numbers, which were recorded on each instrument form. Mindfulness intervention participants' attendance was also recorded at the beginning of each session.

Mindfulness Intervention Sessions Description

The intervention included a combination of psychoeducation and mindfulness exercises. The sessions were led by the director of the university's Counseling Services, who has a master's degree in social work, is a licensed clinical social worker, and has advanced training in mindfulness. The program consisted of six - thirty-minute sessions of guided mindfulness. As per the Counseling Service, the purpose of the mindfulness sessions was to reduce stress levels and increase overall wellness (K. Cornelius, personal communication, October 16, 2019). Refer to Table 1 for a description of each session.

Session	Title	Description
1	Introduction to mindfulness	Basic overview of mindfulness Importance of setting your intentions Normalizing the process Importance of breath Mindful moment with senses
2	Changing perspective: Getting out of your own mind and just being	Awareness of thoughts Mindful moment with thoughts
3	Body scan	Awareness of body Importance of continued nonjudgmental stance Mindfulness moment with the body Encouraged practice: Transitional mindfulness
4	Sensory	Awareness of senses Experiential mindfulness with sensory objects How to find a mindful moment in any environment Mindfulness moment using sense of choice
5	Compassion Toward self and others	Awareness of self and others Mindfulness moment with intention toward self and others
6	Gratitude	Awareness of gratitude Mindfulness moment with thoughts of gratitude How to make mindfulness a part of your life moving forward

 Table 1. Mindfulness Intervention Sessions Description

Data Analysis

Quantitative

Fifteen of the 30 TEIQue-SF items required reverse coding prior to data analysis. Using SPSS (IBM, 2020), a Wilcoxon signed-rank test was performed to analyze within group (pre and posttest) differences for the mindfulness intervention group, and a Mann-Whitney U test was used to analyze between-group differences (mindfulness intervention group compared to the control group).

Qualitative

The qualitative data collected from the open-ended question in the posttest was coded line by line to identify patterns of words, phrases, and concepts that emerged from participant responses, resulting in open codes (Corbin & Strauss, 2015). From the open codes, themes were developed. All investigators collectively participated in the qualitative data analysis, including the coding process, and discussing and agreeing upon common themes.

Results

Participant Demographics

A total of 35 participants completed the study, 24 belonging to the mindfulness intervention group and 11 belonging to the control group. All participants were members of the same OTD cohort. The age range for the mindfulness intervention group was 21-31 years of age (M age = 23.74 years), while the control group's range was 22-30 years of age (M age = 23.45years). There were a variety of different undergraduate degrees represented among the participants including psychology, exercise science, public health, and health sciences. The most prevalent undergraduate degree among the participants was psychology, with 14 participants having that undergraduate major. Most of the participants reported having experience caring for others through activities such as childcare, being personal care assistants, and volunteering with Special Olympics and Best Buddies. Many participants described previous exposure to EI through lectures, quizzes, and reading books. Breakdown of the number of sessions attended by individuals in the mindfulness group is as follows: 11 participants attended six sessions, five participants attended five sessions, one participant attended four sessions, zero participants attended three sessions, three participants attended two sessions, and four participants attended one session (M = 4.38 sessions).

Quantitative Results

Difference in EI Scores within Mindfulness Group

To determine if mindfulness training influences EI, a Wilcoxon signed-rank test was calculated to analyze the difference between pre-test and posttest TEIQUE-SF scores. All means were calculated after reverse coding. There was no significant difference between total EI scores for within-groups effects using pre and posttest scores (Pre-test Mean = 157.46, Posttest Mean = 160.29; p = 0.354). However, when comparing pre and posttest scores for individual items, there were statistically significant differences noted for two items. Item 17 (*"I'm normally able to 'get into someone's shoes' and experience their emotions"*) demonstrated statistically significant differences in pre and posttest scores (Pre-test Mean = 5.08, Posttest Mean = 5.67; p = .037). Item 28 (*"I find it difficult to bond well even with those close to me"*) also showed a significant increase in mean score after the mindfulness intervention (Pre-test Mean = 5.17, Posttest Mean = 5.58; p = .045) (See Table 2 and Figure 1).

Item Number	Pre-test Mean	Posttest Mean	Р
Item 17*	5.08	5.67	.037*
Item 28*	5.17	5.58	.045*
TOTAL	157.46	160.29	.354

Table 2. Within Group Differences for Individual Items



Figure 1. Significant results found for within groups effects.

Upon analysis of each factor of EI, emotionality scores significantly increased from pre to posttest (Pre-test Mean = 5.27, Posttest Mean = 5.45, p = .026) (Table 3 and Figure 2). While the other factors were not significant, there was an overall trend in increased scores from pre-test to posttest for all factors.

TEIQue-SF Factor	Pre-test Mean	Posttest Mean	Р		
Emotionality*	5.27	5.45	.026*		
Sociability	4.74	4.92	.177		
Self-Control	4.85	4.93	.424		
Well-Being	5.98	6.04	.616		

Table 3. Within Group Differences for EI Factor



Figure 2. Significant result found for within groups effects for the Emotionality EI Factor.

Difference in Post-Test EI Scores Between Mindfulness Intervention and Control Groups

A Mann Whitney U test was used to analyze differences between the mindfulness intervention group and control group's TEIQue-SF posttest scores. All means were calculated after reverse coding. Results indicated no significant difference in posttest total scores between groups (U = 97.00, p = 0.384). However, individual item analysis revealed statistically significant differences between groups for three items: Item 22 – "*I tend to get involved in things I later wish I could get out of* (Mindfulness Intervention Group Mean = 5.08, Control Group Mean = 3.73, p = .036); Item 24 - "*I believe I am full of personal strengths*" (Mindfulness Intervention Group Mean = 5.92, Control Group Mean = 4.64, p = .012), and Item 30 - "*Others admire me for being relaxed*" (Mindfulness Intervention Group Mean = 4.96, Control Group Mean = 3.73, p = .036) Inversely, Item 28 ("*I find it difficult to bond well even with those close to me*") showed a statistically significant difference opposite of the predicted direction

(Mindfulness Intervention Group Mean = 5.58, Control Group Mean = 6.46, p = .033) (Table 4

and Figure 3).

Item Number	Mindfulness Mean	Control Mean	Р
Item 22*	5.08	3.73	.036*
Item 24*	5.92	4.64	.012*
Item 28 *	5.58	6.46	.033*
Item 30*	4.96	3.73	.036*
TOTAL	160.29	151.70	.401

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While the mindfulness intervention group scored higher on three of the four factors, no significant difference was found in each individual factor of EI between the mindfulness intervention and control groups. Refer to Table 5.

TEIQue-SF Factor	Mindfulness Mean	Control Mean	Р		
Emotionality	5.45	5.46	.958		
Sociability	4.92	4.49	.186		
Self-Control	4.93	4.35	.142		
Well-Being	6.04	5.44	.517		

Table 5. Between Group Differences for EI Factors

Qualitative Results

The mindfulness intervention group was asked to describe the meaning and impact of participating in the mindfulness sessions. Overall, the qualitative data indicated that the participants had a positive response towards the mindfulness intervention. General themes that emerged from the data included: the designated time for mindfulness practice was beneficial, specific skills and strategies were learned, and techniques learned during mindfulness sessions could be applied in daily life.

Designated Session Time Was Beneficial

Students found that the designated time each week for the mindfulness sessions was beneficial. Many stated that having the designated time helped them decompress and relieve stress. One participant reported that the time to practice mindfulness each week was "...a time for me to just be. It was a blocked out part of my schedule for which I didn't have to focus on anything else, and that concept in itself was relaxing." Others stated that it would have been beneficial had they attended more sessions. Despite the reported benefits, some participants found it challenging to practice mindfulness because their minds were racing, and it was hard to find focus.

Specific Skills and Strategies were Learned

Students reported learning several skills and strategies during the mindfulness sessions which helped increase their emotional regulation, self-awareness, ability to compartmentalize, improve their rest and sleep, and provided a shift in perspective. Participants stated that

mindfulness helped them with emotional regulation. One participant explained, "I feel that this experience has helped me improve upon my stress and emotional regulation. This practice was very valuable, and I will continue it on my own to promote my well-being and mental health. This experience has helped me to find a path to inner peace during stressful situations." Participants also found that the mindfulness sessions helped them develop more awareness of themselves and others. One student described this as, "This has helped me to change my attitude when I may have a negative thought, stop and think about why I'm feeling this way, acknowledge it and either shift my focus/attitude or accept it in the moment and move on. I can better recognize when things are out of my control and accept them instead of getting upset." Regarding increased ability to compartmentalize, a participant stated that the techniques taught during the mindfulness sessions, gave them "...skills to 'compartmentalize/contain' my stress and emotions in order to be more present in the moment." Additionally, students reported improved sleep and rest from participating in the sessions and a shift in perspective. One participant described the shift from thinking that mindfulness would be easy to do, to realizing that mindfulness was challenging but effective. Instead of trying to block out thoughts, participants acknowledged their thought patterns. Other participants learned to differentiate between mindful relaxation and mindless relaxation. "When I go home, I can relax and watch TV but doing mindfulness helped me to put my mind at ease." Additionally, by participating in the sessions, some students experienced a change in attitude towards mindfulness practice. One participant stated "At first, I was doubtful that I'd be able to quiet my mind enough to participate, but as the sessions continued. I started getting better and better! I want to incorporate mindfulness in my daily routine now that I've experienced the benefits. It showed me the importance of understanding why (and how) quieting the mind is beneficial."

Application of Mindfulness Techniques in Daily Life

While mindfulness techniques were found to be beneficial during the designated sessions, participants also found mindfulness practice to be helpful in their daily lives. Some participants stated that they were incorporating the skills and strategies learned into their daily routines, while others expressed a desire for more mindfulness exploration and practice. One participant explained, "Throughout the sessions, I found that it was easier and more peaceful to take control of my own thoughts. I am excited to implement these practices at home and in my own life. I am going to try to continue mindfulness & become more aware of my thoughts." Other takeaways expressed by several participants was the value of setting aside time, and the importance of being present, and quieting the mind. A few participants stated that they did not find the mindfulness sessions beneficial outside of the allotted time, stating they either did not see improvement, a significant change, or had no plans to implement the practice into their daily life.

Discussion

The purpose of this study was to determine the effectiveness of mindfulness training in fostering EI growth. The within-groups (pre-test to posttest comparison) and between-groups (mindfulness intervention group and control group comparison) analysis did not reveal a statistically significant difference in total EI growth. However, individual item and factor scores indicated a general increase within-groups and between-groups, with specific results being statistically significant. This finding that mindfulness training is effective in fostering EI growth is consistent with the literature (Kaoun, 2019; Miao et al., 2018; Snowden et al., 2015).

When responding to the reflection prompt, participants of the mindfulness group perceived themselves as having more self-awareness and awareness of others. This was also reflected by their increased agreeance with Item 17 (*"I'm normally able to 'get into someone's shoes' and experience their emotions"*), as well as the statistically significant increase in the emotionality factor (an individual's ability to perceive and react to their own emotions as well as

the emotions of others). This increased awareness of self and others has been noted in the literature as a key component of EI and beneficial for client and therapist interactions (Andonian, 2017; Bradberry & Greaves, 2009; McKenna & Mellson, 2013; Shutte & Malouff, 2011). Additionally, individuals in the mindfulness group rated Item 24 (*"I believe I'm full of personal strengths"*) higher than the control group, which could be attributed to participation in the mindfulness sessions. Mindfulness participants expressed that they learned strategies that helped them develop stronger emotional regulation and self-awareness. Emotional regulation and self-awareness are associated with EI (Bradberry & Greaves, 2009; Miao et al., 2018; Wang & Kong, 2014).

Another item that had statistically significant differences was Item 28 ("I find it difficult to bond well even with those close to me"). For both groups, this item was rated high, with mindfulness group participants rating it higher between the pre and posttest, and the control group rating this item higher than the mindfulness group. While there is no specific qualitative data that directly explains these findings, researchers hypothesize that these results were related to participants feeling more connected to their peers as the semester progressed rather than a change resulting from participation in the mindfulness intervention. Another possible explanation for these significant differences is that the item was worded negatively. Despite being reverse coded, the negative phrasing may have confused the participants, or the participants may have misinterpreted the question leading to an incorrect rating. While the control group rated this item higher overall, the mindfulness intervention group demonstrated a statistically significant increase in this item from pre to posttest. The literature supports this finding as mindfulness helps to build rapport between clients, caregivers and co-workers which is critical for fostering emotional resilience in healthcare professionals (Delpasand et al., 2011; Murden et al, 2018; Shutte & Malouff, 2011; Testa & Sanganjanavanich, 2016; Thomas et al., 2018).

Finally, Item 30 (*"Others admire me for being relaxed"*) was rated higher by the mindfulness intervention group than by the control group with a statistically significant difference (p=0.036). This could be attributed to the mindfulness intervention group learning strategies of self-awareness, emotional regulation, coping mechanisms, and stress relief from the mindfulness sessions, as supported by the qualitative data. Intervention participants reported that they benefited from the designated time to decompress in the mindfulness sessions, and some participants stated they believed it would have been beneficial to attend more sessions. This supports the evidence that suggests if students learn ways to prevent burnout, this could positively impact them as professionals (Delpasand et al., 2011; Murden et al., 2018; Testa & Sanganjanavanich, 2016; Thomas et al., 2018).

Study Limitations and Future Research

There were limitations to this research study that could be improved upon in future studies. First, the participants were comprised of a convenience sample, one cohort within a specific OTD program and small sample size with no gender diversity. Therefore, generalization cannot be made to other OTD students or universities, and results only represent female responses and opinions. Also, while homogeneity of variance was guaranteed for within groups effects, it is questionable for between groups effects due to the difference in sample size. Additionally, the classroom where the mindfulness sessions were held was in a busy hallway with significant foot traffic. The level of noise may have impacted some participants' ability to fully focus. Also, the number of sessions attended by mindfulness intervention participants varied from six sessions to one session, which may have impacted the results. Finally, the control group did not complete pre and posttest measures of the TEIQue-SF. Therefore, it was not possible to compare ratings to the mindfulness intervention group prior to mindfulness session participation.

There are multiple opportunities for future research related to mindfulness and EI within student and practitioner populations. A larger sample size consisting of OTD students from other universities and equal sized intervention and control groups could provide useful and more generalizable information. Also, this study could be replicated with different health science student populations to provide an interdisciplinary perspective and a larger participant pool. Additional research studies could examine the effect of mindfulness on EI with more than one cohort in an OTD program or from a longitudinal perspective to see if there are significant differences throughout the program. Also, the mindfulness sessions could be offered during a different timeframe of the semester or academic year (e.g., beginning of the semester, mid semester, throughout the academic year) to determine ideal timing and dosage. To further explore the impact of the mindfulness sessions on participants' implementation in daily routines, participants could track their use of mindfulness techniques. Finally, because mindfulness intervention participants reported decreased stress following participation, the relationship between mindfulness, EI, and stress could be explored.

Conclusion

While there is evidence to support the use of mindfulness in promoting EI, there is limited literature available for the use of mindfulness interventions for the occupational therapy student population. Overall, this study's results suggest that participation in mindfulness sessions was beneficial for the occupational therapy students and demonstrated statistically significant differences in the areas of emotionality, self-awareness, awareness of others, and understanding the importance of stress-reduction compared to the control group. Perhaps if students were provided opportunities to foster their EI during their educational programs, this might positively impact them as future healthcare practitioners as they interact with clients, experience feelings of burnout, and encounter stressful situations. Future research in this area is recommended.

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