

2023

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Recommended Citation

Ostrowski, J. L., Sampson, S., McGoldrick, E., Karabin, C., & Shields, K. (2023). Effects of Mental Health First Aid Course: Knowledge, Confidence, and Stigma Among Occupational Therapy Students. *Journal of Occupational Therapy Education*, 7 (2). <https://doi.org/10.26681/jote.2023.070205>

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Abstract

In the United States, one in five adults are impacted by some form of mental illness in any given year, but only about 40% of individuals seek professional mental health support. While occupational therapists (OT) may work with individuals with mental illness to improve social skills, activities of daily living (ADLs), instrumental ADLs, and neurocognitive interventions, research suggests there is not enough emphasis on this content in professional OT education. Mental Health First Aid (MHFA) training is designed to educate individuals on mental illness, including how to recognize signs and symptoms and how to support individuals experiencing a concern or crisis. This study examined changes in stigma, knowledge, and confidence among OT students following MHFA training, and compared to a control group. Results demonstrated improved knowledge and confidence within the experimental group, highlighting the impact of MHFA training in this population.

Keywords

Mental illness, mental health disorder, mental health training

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JOTE

Journal of Occupational
Therapy Education

Volume 7, Issue 2

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ABSTRACT

In the United States, one in five adults are impacted by some form of mental illness in any given year, but only about 40% of individuals seek professional mental health support. While occupational therapists (OT) may work with individuals with mental illness to improve social skills, activities of daily living (ADLs), instrumental ADLs, and neurocognitive interventions, research suggests there is not enough emphasis on this content in professional OT education. Mental Health First Aid (MHFA) training is designed to educate individuals on mental illness, including how to recognize signs and symptoms and how to support individuals experiencing a concern or crisis. This study examined changes in stigma, knowledge, and confidence among OT students following MHFA training, and compared to a control group. Results demonstrated improved knowledge and confidence within the experimental group, highlighting the impact of MHFA training in this population.

Introduction

Mental illness is a medical condition that can affect an individual's social, emotional, and physical functioning and may lead to disability, morbidity, and shortened life expectancy (Lo & Cheng, 2014). In the United States in any given year approximately one in five adults (over 50 million individuals) experience some form of mental illness and nearly half of all Americans will experience mental illness within their life (Substance Abuse and Mental Health Services Administration, 2020; Trivedi et al., 2015; Wang & Xie, 2019). Mental illness is costly, with the National Institute on Mental Health estimating that untreated mental illness costs the country up to \$300 billion every year in lost productivity (National Institute of Mental Health, 2017). Despite the prevalence and resulting costs of mental illness, barriers such as scarce resources of professionals and treatment programs, limited benefits coverage from health insurance companies, lack of accessibility, poor mental health literacy, and social stigma exist that are denying individuals the opportunity to get proper treatment (Gulliver et al., 2010; Johnson et al., 2021; Pescosolido et al., 2013). The median delay in seeking treatment for individuals with mental illness is 10 years (National Institute of Mental Health, n.d.), and 56% of adults will never receive treatment for their mental illness (Wang & Xie, 2019). Research suggests that stigma accounts for 40% of barriers to mental health help-seeking (Salaheddin & Mason, 2016).

Given the high prevalence of mental illness in the general population, OTs will have patients with concurrent mental illness. Occupational therapists (OTs) can improve the habits and routines of individuals with mental health concerns by engaging them in education on social skills, activities of daily living (ADLs), instrumental ADLs, and neurocognitive interventions. They may provide interventions focused on improving individuals' function in work, play, leisure, social life, self-care, and community living skills. These interventions have been shown to be effective in enhancing the lives and work skills of individuals with mental health disorders (Ikiugu et al., 2017; Soeker et al., 2021), and participating in OT provides an adequate skill set for those who want to return to the community (Soeker et al., 2021).

Lack of knowledge about mental illness results in stigma and increased social distance even among healthcare providers (Gonzales et al., 2021; Hung et al., 2021). While the Accreditation Council for Occupational Therapy Education (ACOTE, 2018) requires education related to mental health in its professional programs (Standards B.1.2, B.3.5), given the critical role that OTs play in assisting individuals with mental illness to live full and productive lives, additional training in mental health first aid has the potential to provide students with an additional skill set to properly aid patients and clients with mental illness, and to assist in decreasing their own stigmatizing attitudes towards mental illness. One way to decrease stigma associated with mental illness and increase mental health help-seeking behaviors is to increase understanding of symptoms associated with mental illness and provide lay individuals and healthcare providers alike with the skills and confidence needed to provide proper aid when symptoms are identified (Jensen et al., 2016). Mental health first aid (MHFA; National Council for Mental Wellbeing, 2020) is one such program, and its effectiveness in producing statistically significant improvements in mental health knowledge, reductions in

stigmatizing beliefs, and increased confidence in helping behaviors is supported by numerous individual studies, systematic reviews, and meta-analyses (Edgar & Connaughton, 2021; Morgan et al., 2018; O'Reilly et al., 2011). While several studies have evaluated MHFA in both the general public and in healthcare fields (pharmacy, physiotherapy, nursing), to our knowledge no previous research has been conducted with OT students. Previous research indicates that such training may be important, as OTs report feeling underprepared for working within the mental health field (Craik & Austin, 2000).

The purpose of this randomized controlled trial was to evaluate the effectiveness of a mental health first aid course, versus a control group, at improving knowledge and confidence and decreasing stigma in OT students. Outcome measures were selected to reflect whether knowledge and confidence in treating individuals with mental health disorders has improved, and if stigmatizing attitudes have decreased.

Methodology

Research Design

A randomized controlled trial was used to examine changes in knowledge, confidence, and stigma before and after a course in MHFA, and compared to a control group. Those in the experimental group participated in the MHFA course, which involved 2 hours of self-paced online content taken individually and 5.5 hours of in-person instructor-led group content (see Table 1). The MHFA curriculum is standardized and may only be taught by individuals who have been certified as instructors through the National Council for Mental Wellbeing (previously the National Council for Behavioral Health). In this study the individual who taught the course has been a certified instructor since 2018 and has delivered 30 MHFA courses and certified more than 500 individuals in MHFA. Following the conclusion of the study, individuals in the control group were offered the option to complete the MHFA course.

Participants

Graduate OT students who were enrolled in a Master of Science in OT program at a single university were included in this study. A minimum of 34 participants was needed (calculated using a priori power analysis with G*Power, alpha = .05, power = .80, effect size = .25). Forty-two participants were recruited to account for potential attrition. Participant demographics are included in Table 2. All participants provided signed informed consent, and this study was approved by the Institutional Review Board at Moravian University.

Table 1*MHFA Course Content*

Topic*	Time
Online self-paced introduction (asynchronous)	120 minutes
Segment 1: Welcome (learning objectives, ground rules)	25 minutes
Segment 2: Overview and online recap (group knowledge check, small group discussion on how the topic relates to community and role as an OT)	35 minutes
Segment 3: Overview of the ALGEE action plan (describe each step: approach/assess for risk of suicide or harm, listen nonjudgmentally, give reassurance and information, encourage appropriate professional help, encourage self-help and other support strategies)	60 minutes
Segment 4: MHFA for early signs and symptoms of mental health concerns (review early s/s, video, small group scenario)	30 minutes
Segment 5: MHFA for worsening signs and symptoms of mental health concerns (review worsening s/s, video, small group scenario)	30 minutes
Segment 6: MHFA for mental health crisis (role in a crisis, de-escalating situations, aggressive behavior, severe psychotic states, panic attack, following a traumatic event, non-suicidal self-injury, suicidal thoughts and behaviors, substance use crisis)	120 minutes
Segment 7: After providing MHFA (self-care for the mental health first aider, debriefing, respecting privacy, reflection)	30 minutes
Total Time	Online: 120 minutes In-person: 5 hours, 30 minutes

*Segments 1-7 were delivered in-person to the group

Table 2*Demographics*

	Experimental Group (n=21)	Control Group (n=21)
Age (mean +/- SD)	24+/-2	22+/-1
Year in Program	1st year: 7 2nd year: 14	1st year: 12 2nd year: 9
Gender	F:17 M:4	F:20 M:1
Race	White: 17 Asian: 4	White:17 Asian: 2 Other: 2
Hispanic/Latino	3	2
Lived experience with mental illness	Yes: 15 No: 6	Yes: 5 No:16
Family experience with mental illness	Yes: 9 No: 12	Yes: 6 No: 15

Instruments/Measures

The Social Distance Scale (Link et al., 1999) measures an individual's willingness to engage with members of an out-group in various ways. In our study, we used this scale to evaluate participants' stigma towards individuals experiencing mental illness, with lower ratings (i.e., 1) meaning decreased social distance and higher ratings (i.e., 7) meaning increased social distance. The options ranged from willingness to have a member of the group excluded from associating with your country in any way (7) to willingness to marry a member of the group (1). While no psychometric properties have been reported for the Social Distance Scale it has been used to evaluate stigma related to mental health in several previous studies, including one systematic review with meta-analysis (Bond et al., 2015; Burns et al., 2017; Jorm et al., 2010; Morgan et al., 2018; O'Reilly et al., 2011).

A Case Vignette depicting a hypothetical individual experiencing mental illness was paired with a five-item Likert scale to assess self-reported confidence in assisting an individual with a mental health concern (Burns et al., 2017). This score has high inter-rater reliability and has been shown to predict the quality of support provided up to two

years later (Yap & Jorm, 2012). This vignette has also been used in several previous studies evaluating confidence following a MHFA course (Burns et al., 2017; Morgan et al., 2018). The text of the vignette was as follows:

Please read the following vignette and consider how confident you are in your ability to help:

Jamie is a 21-year-old student who has been feeling unusually sad and miserable for the last few weeks. They are tired all the time and have trouble sleeping at night. Jamie doesn't feel like eating and has lost weight. They can't keep their mind on their studies and their marks have dropped. They put off making any decisions; even day-to-day tasks seem too much for them. Their parents and friends are very concerned about them. Jamie feels they will never be happy again and believes their family would be better off without them. Jamie has been so desperate, they have been thinking about ways to end their life. On a scale from 1 (don't know) to 5 (very confident), rate how confident you are in your ability to help Jamie.

Finally, the MHFA Knowledge Check involved a 5-item multiple choice test (scored for accuracy) and a 10-item Likert scale belief questionnaire (1-5 scale; National Council for Mental Wellbeing, 2020). The multiple-choice component was used to evaluate participants' knowledge of signs and symptoms of mental illness, and the Likert scale component was used to evaluate self-reported confidence in assisting an individual with a mental health concern. These questions have face validity and are used as part of the formal MHFA pre-post course knowledge assessment (National Council for Mental Wellbeing, 2020), but no other psychometric properties have been reported. Previous studies used other instruments to evaluate knowledge, however these studies were completed using the previous edition of the MHFA curriculum and were focused on "correctness" of mental illness identification, whereas the updated curriculum focuses on recognizing concerning signs and symptoms and taking action to help (not identifying the "correct" diagnosis).

Interventions and Procedures

Once recruitment closed the 42 enrolled participants were allocated to groups using a random numbers generator, with 21 allocated to each group. Identifier codes were assigned to participants following group allocation. The three instruments described previously were administered to all participants before and after experimental group members participated in the MHFA course.

Data Collection and Measurement

The multiple-choice component of the MHFA Knowledge Check and the total score for the Social Distance Scale were analyzed using a 2x2 repeated measures ANOVA (two groups at two time periods). Because there is not a nonparametric equivalent for a 2-way repeated measures ANOVA, between-group and within-group differences for the MHFA Knowledge Check Likert-scale belief items were evaluated in two ways: change scores (calculated as final total score subtracted from baseline total score for each individual) were calculated and between-group changes were evaluated using a Mann-

Whitney U test (a non-parametric independent t-test); within-group differences (baseline and final scores for each group) were analyzed using separate Wilcoxon Signed Rank tests (a non-parametric dependent t-test). Confidence scores (measured via single-item Likert scale) were analyzed using the Chi-square Test for Independence. Data was analyzed using the software system Statistical Package for the Social Sciences (SPSS) with alpha set a priori at $\leq .05$.

Results

Knowledge

A repeated measures ANOVA with one within-subjects factor (time) and one between-subjects factor (group) was performed to determine if participation in a course in MHFA improved participant knowledge. There was a significant group*time interaction ($F_{(1,37)} = 8.48$, $p = .006$, observed power = .809, effect size 0.19), where the experimental group improved knowledge more than the control group. There was also a significant main effect for group ($F_{(1,37)} = 5.386$, $p = .026$, observed power = .618, effect size 0.127) but a non-significant main effect for time ($F_{(1,37)} = .698$, $p = .409$, observed power = .129, effect size 0.019). Means and standard deviations are included in Table 3.

Because the control and experimental groups differed in the number of participants in each group with lived experience with mental illness, and different percentages of first versus second-year students, subgroup analyses were performed. There were no differences in knowledge scores based on lived experience ($F_{(1,37)} = 1.429$, $p = .240$, observed power = .649, effect size .039) or year in the OT program ($F_{(1,37)} = 1.096$, $p = .302$, observed power = .175, effect size .029).

Stigma

A repeated measures ANOVA with one within-subjects factor (time) and one between-subjects factor (group) was performed to determine if participation in a course in MHFA reduced participant stigma. The group*time interaction was not significant ($F_{(1,37)} = .273$, $p = .604$, observed power = .080, effect size = .007). There were non-significant main effects for group ($F_{(1,37)} = 3.581$, $p = .066$, observed power = .454, effect size = .088) and time ($F_{(1,37)} = .000$, $p = .989$, observed power = .050, effect size = .000). Means and standard deviations are included in Table 3. Again, subgroup analysis found no difference in stigma scores between participants with and without lived experience with mental illness ($F_{(1,37)} = .592$, $p = .446$, observed power = .611, effect size .016) or between first-year or second-year OT students ($F_{(1,37)} = .592$, $p = .446$, observed power = .611, effect size .016).

Table 3*Group Means and Standard Deviations*

	Control Pre	Control Post	Experimental Pre	Experimental Post
Knowledge (scale)	4.20 ± 0.89	3.85 ± 0.99	4.16 ± 0.69	4.79 ± 0.54
Social Distance (scale)	1.75 ± 0.55	1.70 ± 0.57	1.89 ± 0.32	1.95 ± 0.23

Confidence

A chi-square test of independence was performed to determine whether group (control, experimental) influenced confidence as reported following the vignette (Likert scale); separate chi-square analyses were performed for both pre-training and post-training confidence scores. There was no statistically significant association between group and confidence for pre-training scores ($\chi^2_{(1)} = 0.601$, $p = .438$, Cramer's $V = .118$). There was a significant association between group and confidence for post-training scores ($\chi^2_{(1)} = 11.383$, $p < .001$, Cramer's $V = .579$). Individuals in the experimental group were more likely to be confident in their ability to help than those in the control group. Subgroup analysis between participants with and without lived experience with mental illness found no difference in confidence scores at pre-test ($\chi^2_{(4)} = 1.881$, $p = .758$, Cramer's $V = .209$) or post-test ($\chi^2_{(4)} = 5.645$, $p = .227$, Cramer's $V = .380$). Similarly there were no differences between first and second-year students at pre-test ($\chi^2_{(4)} = 3.709$, $p = .447$, Cramer's $V = .294$) or post-test ($\chi^2_{(4)} = 3.029$, $p = .553$, Cramer's $V = .279$).

For the Likert-scale component of the Knowledge Test, a Mann-Whitney U test was performed to determine if there were differences in confidence improvement between the experimental and control groups. Change scores were calculated for each participant (calculated as difference between pre- and post-training scores). Median confidence improvement scores were statistically significantly higher in the experimental group (29.61) than in the control group (10.88), $U = 7.5$, $z = -5.137$, $p = .001$, using an exact sampling distribution for U . A Wilcoxon signed-rank test was conducted to determine if there were changes in participant confidence level from pre- to post-training; separate analyses were performed for both experimental and control groups. Of the 20 control group participants, 10 participants increased their confidence score, 9 decreased their scores, and 1 stayed the same. There was a non-significant median increase from pre-training (34.0) to post-training (36.0); $z = .203$, $p < .839$. Of the 19 experimental group participants, 19 participants increased their confidence score and 0 decreased or stayed the same. There was a statistically significant median increase pre-training (33.0) to post-training (46.0); $z = 3.826$, $p < .0001$. Subgroup analyses found no difference in confidence scores between participants with and without lived experience with mental illness ($p = .760$) or between first and second year students ($p = .122$).

Discussion

Receiving consistent mental health education across all OT education programs is crucial to the OT profession due to the likelihood of treating and interacting with individuals with mental health disorders. Previous research indicates that, while mental health experiences are essential content for OT students, this content is not adequately addressed in professional education programs (Craik & Austin, 2000; Scanlan et al., 2017). Research on MHFA suggests this training is beneficial to anyone working with or encountering mental illness (Banh et al., 2019). As of 2018, more than a million people in the United States have been trained, which has facilitated mental health awareness (Banh et al., 2019). The purpose of this study was to evaluate knowledge, confidence, and stigma related to mental illness before and after participating in a MHFA training and compared to a control group.

It was hypothesized that participation in the MHFA course would improve mental health knowledge as measured by a knowledge test. Our results indicated there was a significant increase in knowledge in the experimental group (compared to the control group) post-training, thus supporting our hypothesis. Our results align with previous research stating MHFA training improves mental health literacy in both the general public and nursing students (Banh et al., 2019; Burns et al., 2017; Morgan et al., 2018; O'Reilly et al., 2011). Researchers Morgan et al. (2018) performed a systematic review of 18 randomized controlled trials and controlled trials and found moderate-to-large significant improvement in MHFA knowledge post intervention. Previous research using the Mental Health Beliefs Literacy Scale (as opposed to the knowledge test used in our study), found nursing students had significant short-term (3 months) and long-term (6 months) improvements, in mental health literacy following MHFA training (Banh et al., 2019; Burns et al., 2017). This research suggests that MFHA is a useful training tool to incorporate into various health professions education in order to enhance students' mental health literacy. Additional research with OT students and clinicians looking at short-term and long-term improvements in mental health literacy should be performed to confirm the findings of this study, using either the Mental Health Beliefs Literacy Scale or using the MHFA Knowledge Test.

Our second hypothesis was that participants in the experimental group would have increased confidence compared to the control group at the post-test. This hypothesis was supported across all three sets of statistical analyses, finding an association between confidence and group membership, significant group differences in confidence at post-test, and significant improvement in confidence over time in the experimental group. These findings are supported by several previous studies using both control and experimental groups, all reporting that confidence increased in the experimental group post-intervention. The studies used both questionnaires (Edgar & Connaughton, 2021; Jorm et al., 2010) and vignettes (Kitchener & Jorm, 2002); both of which were used in our study.

Our final hypothesis was that participation in the MHFA course would result in a decrease in stigmatizing attitudes related to mental illness as measured by the social distancing scale. We found no decrease in stigma over time or by group, therefore our hypothesis was not supported. These findings do not align with previous research. Previous research with pharmacy students (O'Reilly et al., 2011), nursing and medical students (Bond et al., 2015; Burns et al., 2017), and members of the Australian public (Jorm et al., 2010) found decreased stigma surrounding mental health after MHFA training. Morgan et al. (2018) performed a systematic review of 18 randomized controlled trials and controlled trials and found small significant effects for stigmatizing attitudes post-intervention across all included studies. More recent research conducted by Gonzales et al. (2021) reported that medical students exhibited more stigma towards individuals with serious mental illness compared to community members with no experience in healthcare. This study evaluated stigma based on social constructs such as race, living status, and criminal record, whereas our study used the Social Distance Scale, which may partially explain the differences in results.

Examination of pre-training social distancing scale scores for both control and experimental groups in our study demonstrated a basement effect; specifically, the average scores were 1.75 and 1.89 (respectively) where 1 is the minimum score. With participants already demonstrating very little stigma related to individuals with mental illness, there was not much ability of the MHFA training to decrease stigma significantly further. The average age of participants in our study may also have contributed to the low levels of stigma at baseline. Blum et al. (2021) found that younger individuals (mean age 24 ± 4 years) exhibit decreased stigmatizing attitudes towards mental illness, which supports the low levels of stigma in our study sample (mean age 24 ± 4 years). It is also possible that education, training, and coursework included as part of an OT program contribute to a more inclusive attitude towards individuals with mental illness (Hung et al., 2021). Future research should evaluate stigma towards mental illness prior to the start of the first year in an OT program and at the end of the program to determine if general OT coursework does in fact aid in decreasing stigma related to mental illness.

Limitations of this study included having only OT students from a single private University and including only students and not clinicians. Additionally, this study included only masters-level OT students and did not enroll OT Assistant students (OTA; associates or bachelors) or doctoral-level OT students. Future research should enroll students from various program types and institutions as well, and should evaluate retention of knowledge, confidence, and decreased stigma over time following the completion of the MHFA course.

Implications for Occupational Therapy Education

Faculty in OT programs should consider incorporating formal training in MHFA or informal training on MHFA topics within professional education programs. Results of this study can inform faculty in creating learning opportunities that relate directly to increasing mental health knowledge, literacy, and confidence in providing assistance.

As this study only involved a single OT program and low levels of stigma may not be present in all professional OT students, OT programs should also focus on destigmatizing mental illness.

Conclusion

This study demonstrated that participation in a course in MHFA increases OT students' knowledge about mental illness and confidence in recognizing signs and symptoms of mental illness and confidence in providing assistance. The results of our study, combined with results of previous research related to mental health education, demonstrate the versatile nature of the MHFA training and its application to a variety of disciplines. This information has implications for both educators and clinicians in that providing mental health education through courses such as MHFA may better prepare students to interact with patients with mental health disorders as part of their clinical practice.

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