Mindfulness Training in a Pediatric Practice with Adolescents and Young Adults

Rebecca Brady

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Mindfulness Training in a Pediatric Practice with Adolescents and Young Adults

Rebecca Brady

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April 1, 2023

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Abstract

Background: Access to support for behavioral and mental health in adolescents and young adults difficult. Depressive symptoms go unrecognized which can lead to severe symptoms, hospitalizations, and suicides. The lack of mental health services challenge the management of depression in this age group. Mindfulness may be a helpful tool in supporting mental health.

Purpose: The purpose of this project was to improve depression symptoms among youth through engagement in mindfulness activities. Methods: A pre/post-intervention approach was used to measure the effectiveness of a synchronous, online educational platform to guide participants in mindfulness activities. Practice sessions were utilized based on evidence of previous studies and designed to support reduction of depressive symptoms. A paired t-test examined changes in PHQ-9 survey scores before and after mindfulness education and practice sessions. Results: The paired t-test results demonstrated that there was a significant difference between the two groups of PHQ-9 scores (p<0.05). Reduction of PHQ-9 scores indicated the depression symptoms were significantly improved after mindfulness education in adolescents and young adults. Discussion: Guiding participants through various forms of mindfulness activities allows them to understand and implement self-care. Participants chose the most effective mindfulness tool to support their own mental health. Strengths and weaknesses which gave rise to suggestions for further projects while nursing implications supported the quality improvement goal for the clinical site. Conclusion: While mental health concerns continue to rise, nursing can support adolescents and young adults to develop self-care strategies like mindfulness practice in order to minimize depression symptoms, build resilience, and promote wellness.

Keywords: adolescents, mindfulness, parental education, depressive symptoms
Mindfulness with Depressed Adolescents

Introduction

Behavioral health problems among pediatrics continue to rise. It is reported that one out of five children under eighteen years of age are being challenged with a mental health or behavioral health issue (Melnyk & Jensen, 2013). Adolescents face struggles with depression often even despite an active diagnosis (Gonzalez-Tejera, 2005). While cognitive behavioral based therapy is the mainstay treatment of depression for the adolescent population many also are prescribed antidepressants (Knopf, 2021). Mindfulness sessions are one way people can practice activities that promote wellness, support mental health, and supplement treatment of these adolescents and young adults (Kohut & Saltzman, 2021). If these youth are educated on and equipped with the means of engaging in mindfulness activities, they could possibly improve their own behavioral health status. Mindfulness promotes recognizing emotions and personal strengths which will lead to improved emotional regulation (Chandler et al., 2019). This may promote autonomy, resilience, and lessen behavioral health issues that are straining our health care systems. The purpose of this DNP project was to improve depression symptoms among youth through engagement in mindfulness activities.

Background

One major health problem for youth in the United States is depression (Gonzalez-Tejera et al., 2005). Depression is not only linked genetically, but it can also arise from increased stressors, maltreatment and trauma, or specific temperaments of the person (Centers for Disease Control & Prevention [CDC], 2021). A person’s exposure to adverse childhood experiences limits their ability to use coping mechanisms and their ability to develop resilience (Chandler et al., 2019). Family or parental discord, parental depression, rejection, significant loss, lack of
support, lack of connection with peers can all also lead to increased depressive symptoms in this population (Gonzalez-Tejera et al., 2005).

Youth depression places a strain on the child, the family, and the health care system, as it is noted that even youth with mild depressive symptoms are shown to access more mental health services than those with major depression (Gonzalez-Tejera et al., 2005). Even though many pediatric patients are seeking care, less than fifty percent of youth seek treatment for their depressive symptoms (Knopf, 2021). This shows how abundant depression is across this population. As patients flood the medical system for care, patients are seeing increased costs and decreased access for these services (Knopf, 2021). These health care barriers can lead to families avoiding care altogether until symptoms are much worse. Even with active therapy and medication these teenagers often continue to struggle with symptom control as shown in emergency rooms that are at capacity which includes children that have behavioral health issues in crisis (Melnyk & Jensen, 2013).

There is an abundance of negative outcomes for pediatric depression (Knopf, 2021). Suicide is a leading cause of death for youth between the ages of ten and twenty-four (CDC 2021). Depression as a child can also lead to substance use, impaired relations, self-harm, lower quality of life, poor educational outcomes, physical symptoms, and depression as an adult (Forman-Hoffman & Viswanathan, 2018; Gonzalez-Tejera et al., 2005).

**Problem Statement**

Adolescents and young adults need increased support in regard to their mental health concerns, prevention and treatment. While mental health concerns often are unaddressed (Knopf, 2021) clinicians may not become aware of patient symptoms until they have escalated into crisis (Melnyk & Jensen, 2013). Within a primary care setting there may not be enough time or resources
to support mental health and depression in their patient population. Currently, primary care settings may or may not screen for depressive symptoms, suggest therapy, and potentially manage medications to support mental health. Providers need to educate patients in how to support themselves in order to prevent mental health and depressive escalations.

**Organizational Gap Analysis of Project Site**

Currently, there is a lack of holistic care among youth who attend the pediatric primary care setting within this project. While monitoring depressive screening tools, suggesting therapy, and offering medication management is often what these primary care providers do for their patients, a more holistic plan of care could benefit patients. If providers educate adolescents and young adults on mindfulness practice, they may be able to promote wellness, enhance treatment, alleviate symptoms, and build resilience. Nursing has a unique opportunity to support these patients in this holistic manner. By doing so, nursing can support increased access to care, lower healthcare costs, and promote early detection with a wide varieties of treatment options which can enhance care (Fulweiler & John, 2018).

**Review of Literature**

**Search Criteria**

A search for relevant publications was performed within the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Psychological Information Database (PsycInfo) using they key terms: pediatric, mindfulness, depression; education, parents, mindfulness-based intervention; mindfulness education, parents of children with disabilities and special needs; mindfulness, mental health, pediatrics; parents, resiliency training. Articles were reviewed through the result list and if title was relevant, the abstracts were then read.
Inclusion criteria were articles published after 2004, that were peer reviewed, and included the key terms as previously noted. Only articles written in English were included. To keep as up to date as possible, the publication time frame was focused on the most recent nineteen years. However, there were publications noted to be landmark studies from dates prior to the recent five-year time frame. Exclusion criteria were articles published prior to 2004, any duplicate information or topic, and any irrelevant topics. Irrelevant topics were outside the realm of behavioral health or diagnoses more complicated than depression such as bipolar or schizophrenia.

Two hundred and ninety-three articles were found in the CINAHL database, of which eleven met the inclusion criteria. A total of seventy-five articles were reviewed. Thirty-eight articles were found through PsycInfo, of which four met the inclusion criteria.

**Population Age**

All the articles reviewed focused on the challenges for the pediatric population with mental health and behavioral health issues. Many articles reported how programs were used with any age child (Belschner et al., 2020; Burke et al., 2017; Duncan et al., 2009; Kaiser & Hancock, 2003; Kohut & Saltzman, 2021; Man, 2020; Napoli, 2004; Opalinski & Martinez, 2020; Park et al., 2020 Petcharat & Liehr, 2017; Short & Russel-Mayhew, 2009; Sunthararajah, 2019; Whitebird et al., 2012) while only two were found that specifically related to the adolescent population (Bernadette & John, 2018; Russell & Guite, 2020). One article that focused on the preschool population (Burns et al., 2019) was still included due to the importance of the information reported. Also included was an article related to teaching (Napoli, 2004) to demonstrate that vital point of view. Gender and race were not discussed within the sampling methods. Sample sizes ranged from three to 387 participants.
Time Frames

The programs these articles discussed have a wide variety of time frames spanning from three weeks (Russell & Guite, 2020), to eight weeks (Belschner et al., 2020; Burke et al., 2017; Napoli, 2004; Opalinski & Martinez, 2020; Whitebird et al., 2012). Although, most of the articles reported interventions that had no specific time frame (Bernadette & John, 2018; Burns et al., 2019; Duncan et al., 2009; Kaiser & Hancock, 2003; Kohut & Saltzman, 2021; Man, 2021; Petcharut & Liehr, 2017; Short & Russel-Mayhew, 2009; Sunthararajah, 2019). The following topics were examined in the literature chosen.

Type of Mindfulness Activities, Interventions, and Its Effectiveness

Six articles aimed at evaluating specific mindfulness interventions as part of a treatment plan to support the mental health of children while the rest of the articles aimed at any child (Belschner et al., 2020; Gonzalez-Tejera et al., 2005; Knopf, 2021; Napoli, 2004; Petcharut & Liehr, 2017; Sunthararajah, 2019). All articles focused on the benefits and effects of teaching children mindfulness activities (Belschner et al., 2020; Burke et al., 2017; Burns et al., 2019; Carei et al., 2010; Duncan et al., 2009; Gonzalez-Tejera et al., 2005; Kaiser & Hancock, 2003; Knopf, 2021; Napoli, 2004; Opalinski & Martinez, 2020; Park et al., 2020; Petcharut & Liehr, 2017; Russell & Guite, 2020; Sunthararajah, 2019; Whitebird & Kreitzer, 2012).

Mindfulness training and education is unique in that it can be intertwined within a situation so that many stakeholders can support the child using these methods. Mindfulness reflects positively on learning as teachers have reported through classroom experiences (Napoli, 2004). Some information that focuses on mindfulness education sessions for parents or caregivers of children has shown improvement on parental modeling, increased resilience in parents and children, improved self-regulation, decreased symptoms of anxiety and depression, and
improved relationships (Burke et al., 2017; Burns et al., 2019; Duncan et al., 2009; Kaiser & Hancock, 2003; Man, 2021; Park et al., 2020; Petcharat & Liehr, 2017; Russell & Guite, 2020; Whitebird & Kreitzer, 2012). There were very few articles discussing direct education of mindfulness with adolescents with a depression diagnosis (Carei et al., 2010; Gonzalez-Tejera et al., 2005; Sunthararajah, 2019).

The types of mindfulness activities varied from study to study and included meditation (Belschner et al., 2020; Bernadette & John, 2018; Russell & Guite, 2020; Whitebird et al., 2012), breathing techniques (Bernadette & John, 2018; Burke et al., 2017; Kohut & Saltzman, 2021; Russell & Guite, 2020), body scans (Burke et al., 2017; Kohut & Saltzman, 2021; Whitebird et al., 2012), Yoga (Bernadette & John, 2018; Whitebird et al., 2012), hypnosis (Bernadette & John, 2018), active listening (Duncan et al., 2009), and biofeedback (Bernadette & John, 2018).

Most studies provided more than one mindfulness activity option. All studies had similar goals which was to evaluate if improving mindfulness would build resilience in children (Belschner et al., 2020; Burke et al., 2017; Burns et al., 2019; Carei et al., 2010; Duncan et al., 2009; Gonzalez-Tejera et al., 2005; Kaiser & Hancock, 2003; Knopf, 2021; Napoli, 2004; Opalinski & Martinez, 2020; Park et al., 2020; Petcharat & Liehr, 2017; Russell & Guite, 2020; Sunthararajah, 2019; Whitebird & Kreitzer, 2012).

Education provided within these studies varied; however, each had the goal of providing knowledge about how to support the mental health of the pediatric population (Belschner et al., 2020; Burke et al., 2017; Burns et al., 2019; Carei et al., 2010; Duncan et al., 2009; Gonzalez-Tejera et al., 2005; Kaiser & Hancock, 2003; Knopf, 2021; Napoli, 2004; Opalinski & Martinez, 2020; Park et al., 2020; Petcharat & Liehr, 2017; Russell & Guite, 2020; Sunthararajah, 2019;
Whitebird & Kreitzer, 2012). These differences are noted throughout the articles (See Appendix A). Researchers used study evaluation methods that included a pre and post rating scales and/or interviews to gather their results from their samples (See Appendix B).

**Current Knowledge of Mindfulness Practice and Its Effects**

Through gained knowledge and practice of methods learned participants, both parents and children, had a positive effect on state of mind and mental health when educated on mindfulness (Russell & Guite, 2020). The literature supports the proposition that mindfulness reduces both anxiety and depressive symptoms in pediatrics (Sunthararajah, 2019). Self-regulation was supported and improved through participation in these studies (Opalinski & Martinez, 2020) which assisted people to use conscious choices in their reactions to stressful situations (Duncan et al., 2009). In general, positive outcomes from these studies were the promotion of well-being in parents and children (Burke et al., 2017), advocacy (Burke et al., 2017), improved relationships (Burke et al., 2017), and improved executive function (Burns et al., 2019).

A moderate amount of information was found regarding educating children how to participate in mindfulness activities. Although only a small amount was aimed at teaching how mindfulness works and why it is important for success. Articles did differentiate between children with or without a mental health diagnosis but neither category provided vast amounts of evidence. Minimal information on the benefits of mindfulness was found on the specific adolescent population with depressive symptoms.

**Evidence Based Practice Option**

Based on the reviewed literature, educational sessions with mindfulness practice served as the evidence-based option to implement for adolescents. This DNP project aimed to
strengthen the knowledge about effects of mindfulness training with adolescents over a one-month period.

**Theoretical Framework**

This DNP project encompassed the Theory of Experiential Learning. Dewey, Lewin, and Piaget’s past work all have guided this theory to holistically pursue education based on personal experiences (Kolb, 1993). The theory formed how the mindfulness education and practice sessions were presented to the participants. This model gathered personal experiences and allowed for observations to be made to analyze and give feedback for further learning experiences (Kolb, 1993).

Experiential learning was used with the participants who ranged from ages 13-22. The pre intervention chart review collected information about the learners’ demographics, current medications, therapies, and PHQ-9 scores. See Appendix C. During mindfulness instruction the DNP student took into consideration that each participant is coming with their own unique background which guides their specific learning pathway. Each learner could choose different ways to engage in mindfulness. A wide variety of options were supported for the learners to promote goal-directed learning.

Using the Model of Experiential Learning, the DNP student acknowledged the personal experiences of the participants to collect data and make observations (Kolb, 1993). This theory provided a helpful framework by guiding the approach through the multiple stages of project. Recognizing that each participant came into the project with different backgrounds, life experiences, and learning styles gave the DNP student an important view of how to provide the mindfulness education to a group. It also was helpful for participants to experience goal-directed
learning that relates to personal experiences. No adjustments to the framework needed to be done.

Objectives and Expected Outcomes

The purpose/goal of this project was to improve depression symptoms among youth through engagement in mindfulness activities. Project objectives and expected outcomes were reviewed in Table 1 below.

Table 1

Objectives and Outcomes for this DNP Project

<table>
<thead>
<tr>
<th>Goal</th>
<th>Objectives</th>
<th>Expected Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Educated adolescents and young adults on mindfulness from a pediatric primary care office via zoom sessions.</td>
<td>• Obtained pre mindfulness PHQ-9 scores for all 30 participants through health record reviews.</td>
</tr>
<tr>
<td></td>
<td>• Provided four weekly guided education and mindfulness practice sessions, lasting 30 minutes for 30 adolescents and young adults</td>
<td>• 80% of participants chart reviews would be completed</td>
</tr>
<tr>
<td></td>
<td>• Completed Post PHQ-9 questionnaires during second appointment with provider. Any PHQ-9 scores ≥ or equal to 5 would be addressed by the provider.</td>
<td>• 80% of the participants would attend at least one session over the four weeks</td>
</tr>
<tr>
<td></td>
<td>• Created and disseminated results of the project to participants and providers on site</td>
<td>• 80% of participants would complete the PHQ-9 questionnaire post mindfulness sessions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Participants had an improved PHQ-9 score post mindfulness education intervention</td>
</tr>
</tbody>
</table>

Methods
An educational and practice intervention design allowed participants to enhance knowledge and practice mindfulness. Based on the review of literature, the project used the evidence-based practice option of zoom education with practice sessions. A list of mindfulness activities was provided to participants and the site providers. Effects of this evidence-based intervention on depression symptoms were evaluated through PHQ-9 scores pre and post intervention.

**Project Site and Population**

This DNP project was carried out within a pediatric primary care office. The office is located within an urban town that is a small community; patients needed private transportation to access the office and its services. The office accepted both private and state insurance. Participants were limited to those seeking medical care within the office from October to December of 2022. This office is located within Hartford County, Connecticut and is open to all surrounding towns within this county. The U.S. Census Bureau (2021) reported that within this county the population is 20.9 % were under the age of 18, 74.8 % white, 15.8 % African American, 18.8 % Hispanic, 6.1 % Asian, 90.1 % with a computer, and 83.9 % with access to internet. Although this site serves patients from birth to twenty-six, the project targeted any participant from age thirteen to twenty-two with or without a psychiatric diagnosis.

This site engaged multiple stakeholders for the project. This office had two doctors and two physician assistants. Providers were currently administering the PHQ-9 to patients within the office setting, which encouraged both accuracy and privacy of data, whether was at yearly wellness exams or at monthly medication appointments. No additional education of providers was needed regarding the administration of the PHQ-9.

**Recruitment**
Once University IRB approval was obtained, recruitment posters were placed within the office and providers encouraged patients to participate in the project. The DNP student also requested providers to refer patients to the project that were seen in the office setting for either a routine physical or a medication management appointment who met the inclusion criteria.

The inclusion criteria were participants within 13 to 22 years of age, willingness to participate, access to internet and email, and who spoke English. Exclusion criteria was any participant that was found to be of high suicidal risk due to safety reasons. These participants were identified by any active suicidal thoughts, plans, or intents which was evaluated by the providers when reviewing the PHQ-9 results with the patient.

The DNP student introduced them self, their role as a student, the project description and specific roles of the participants on the recruitment poster. The DNP student had the opportunity to speak directly to potential participants. Email addresses of participants were collected from the participants by the DNP student. Parents and participants were provided the opportunity to ask questions and discuss any concerns. This personalized the project for participants and encouraged agreement for consent and assent. Verbal consent was from any participant over the age of 18 years of age while assent was received from anyone under 18 years of age. To support participation in the project the participants were given a $10 gift card for attending one zoom session.

**Measurement Instrument**

To measure the outcomes of this project the Patient Health Questionnaire -9 (PHQ-9) (Splitzer et al., 2021) was used. The PHQ-9 is easy to use and looks at specific topics support the teenager to self-score their own depressive symptoms. The PHQ-9 gathered data from the participants that reflected the previous two weeks prior to filling the questionnaire out. In the
PHQ-9 survey, depression symptoms were evaluated. Habits of eating, sleeping, displayed interest, and mood showed a holistic view of any depressive symptoms. The symptoms were listed and followed by a scale of not at all (0), sometimes (1), often (2), nearly all the time (3) which then was calculated into a total score (0-27).

The PHQ-9 has been validated thoroughly (Constantini et al., 2020). The PHQ-9 has an 89% sensitivity along with an 77% specificity (Forman-Hoffman & Viswanathan, 2018). This tool was made reliable by providing privacy and ensuring that the adolescent was the one filling it out. Providers provided supervision and guidance to ensure this along with addressing any safety concerns that needed to be addressed.

**Project Implementation and Data Collection Procedure**

During a lunch meeting that was scheduled with the site providers the DNP student reviewed the process of the project and explained the objectives. During this time the DNP student recruited two providers that assisted with recruitment of participants. These providers also were a contact for the DNP student for any communication of patient information. A letter of support was obtained from the owner of the site.

Parents and participants received information about the project from the recruitment posters hung at the site along with the suggestions from providers to participate in the project. The DNP student informed the participants via email the purpose of the project, expectations, how to access the mindfulness zoom session, and about the participation incentive.

Pre-intervention information from EHRs was collected on the data form. This included demographics, diagnoses, current treatments, and most recent PHQ-9 scores (Appendix C). Demographics were also collected from the EHR. If demographic information is missing the DNP student clarified with the provider or participant.
During the mindfulness zoom sessions the DNP student provided a brief educational Power Point presentation session about mindfulness. The DNP student guided the patients in to practice different types of mindfulness activities with return demonstration as a way of providing clear understanding from the participant. The information taught to the patients was developed from the utilized journal articles and online mindfulness resources.

The first mindfulness activity was deep breathing. The DNP student guided the participants to breath in and out slowly with different counts of time. Body scans were also utilized along with muscle tension activities to promote focus on the body. Yoga, walking, stretching, and outdoor activities were also discussed as mindfulness activities. Lastly, both light and firm touch exercises were explained and practiced. At the end of the mindfulness session the DNP student asked the participants to report which types of mindfulness activities they believed would be easy for them to participate in to provide benefit to their wellbeing.

The participants filled out the PHQ-9 before and after the educational mindfulness practice intervention. This was completed under the guidance of the provider at any physical appointment, monthly follow up appointments or via phone one month after the mindfulness intervention. If the provider observed scores of greater than or equal to five, or if patient scored greater than zero on question number nine, the provider would intervene with their current recommendations and safety protocol. The gift card was left in the participants chart by the DNP student and the provider gave it to the participant after they completed the post intervention PHQ-9 form.

Since the project site did not have an electronic medical record system the providers added the participants PHQ-9 forms into their charts. The DNP student collected the data during the chart reviews. The chart reviews provided diagnoses, current treatments, and most the recent
PHQ-9 score that was completed along with the post mindfulness education PHQ-9 score. Each participant was given an unique project identification number which was created using the participant’s first and last initial followed by numerical year of birth (RB1979). The data was entered into SPSS dataset file using the participant’s project identification number to ensure privacy. The SPSS data files also remained on the student’s password protected computer.

**Data Analysis**

Data was analyzed using a paired t test because pre-, and post-PHQ-9 mean scores were compared to examine if there were any significant differences between the two related groups. Prior to analyzing, the normality assumption for a paired t-test was examined using a histogram. Descriptive statistics (frequency and, percentages, mean, and SD) were utilized to describe participants’ demographic characteristics, medication use, treatment, as well as PHQ-9 scores.

**Ethical Considerations**

The University of Massachusetts, Amherst (UMass) Internal Review Board (IRB) exemption was received prior to initiating the DNP project (See Appendix D). The project site did not require IRB approval as it was considered a quality improvement project. This project was carefully conducted by the DNP student to ensure that it is carried out in a fashion that follows the standards of care for a primary care office setting. Providers were encouraged to do the same. The risks to all stakeholders remained minimal as participants continued to receive the standard of care within a primary care setting.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) was included to protect the privacy and protection of the participants’ health information. As data was collected it was coded with non-identifying labels to ensure confidentiality. The use of the first and last initials, and year of birth identified the data to the participant so the DNP student would
be able to compare pre and post data scores. Participation of the zoom was completely voluntary and therefore any participant who was unwilling did not have to attend. This data was saved in the password protected file and then stored in DNP students’ private, password protected computer to prevent access by unauthorized users.

Results

Demographics

The project was run in a rural pediatrician office within a small Northeastern town over a six-month period of time from 2022-2023 with eighteen participants. Below are the results from the demographic frequencies that were run (Table 2).

Table 2

Demographics Frequencies of Project Participants

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18.11(3.179)</td>
</tr>
<tr>
<td>Pre-PHQ-9 score</td>
<td>4.39(3.70)</td>
</tr>
<tr>
<td>Post-PHQ-9 score</td>
<td>3.67(2.95)</td>
</tr>
<tr>
<td>n (%)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>6(33.3)</td>
</tr>
<tr>
<td>Female</td>
<td>12(66.7)</td>
</tr>
<tr>
<td>Other</td>
<td>0(0)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>14(77.8)</td>
</tr>
<tr>
<td>African American</td>
<td>1(5.6)</td>
</tr>
<tr>
<td>Asian</td>
<td>0(0)</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>Other</td>
<td>3(16.7)</td>
</tr>
</tbody>
</table>

Medication Use

<table>
<thead>
<tr>
<th>No</th>
<th>9(50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9(50)</td>
</tr>
</tbody>
</table>

Family Structure

<table>
<thead>
<tr>
<th>Intact</th>
<th>11(61.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divorced</td>
<td>5(27.8)</td>
</tr>
<tr>
<td>Single Parent</td>
<td>2(11.1)</td>
</tr>
</tbody>
</table>

History of Suicidal Ideations

<table>
<thead>
<tr>
<th>No</th>
<th>16(88.9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2(11.1)</td>
</tr>
</tbody>
</table>

The sample was made up of more females (66.7%) than males (33.3%). Males and females that already took behavioral health medication was equal between genders. Across the whole sample there were only a few participant outliers (11.1%) that had reported a history of suicidal ideations, none which were currently active. Despite the eligible age range, 13-22 years of age, participants were mostly between ages nineteen to twenty-two (55.5%). Eight younger participants were included and they did seem to have more mature personalities with interest of self-care. Within the setting of the clinic, which was a rural area, the sample yielded mostly Caucasian participants (77.8%). Eleven participants were from an intact family structure.

The preliminary histogram showed a normal distribution of data with minimal outliers indicating that the assumption of normality distribution for a paired t-test was met.
Main Findings

The main project findings came from a paired t-test with results as listed below in the table.

Table 3

_Paired T-Test Results of Pre- and Post- PHQ-9 scores with Mindfulness Education and Practice_

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Paired t</th>
<th>df</th>
<th>Significance (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre education scores</td>
<td>4.39</td>
<td>3.70</td>
<td>2.32</td>
<td>17</td>
<td>0.033</td>
</tr>
<tr>
<td>Post Education scores</td>
<td>3.67</td>
<td>2.95</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The paired t-test results demonstrated that the PHQ-9 scores had significant differences from before to after the mindfulness education. There was a significant improvement of depressive symptoms in the PHQ-9 score after the mindfulness education (mean= 3.67, SD=2.95) than before the intervention (mean=4.39, SD= 3.70); paired t(17)=2.32, p =0.03. Prior to the mindfulness education the mean PHQ-9 score of 4.39 hovered on the line of mild depression, while the post education PHQ-9 score of 3.67 was within the low-risk range.

Discussion

Mindfulness practice in young adults and adolescents can take on many different forms. From deep breathing, counting, grounding methods, muscle tension, yoga, use of nature, use of five senses, mindfulness activities can be used through self-guided activities or on online apps. Different learning styles allow for a unique personal experience when exploring mindfulness (Kolb, 1993). Each individual person is going to have their own reflections on what activity works the best to promote wellness and mental health.
Personal and holistic care will enhance the benefits of mindfulness practice (Belschner et al., 2020; Burke et al., 2017; Burns et al., 2019; Carei et al., 2010; Duncan et al., 2009; Gonzalez-Tejera et al., 2005; Kaiser & Hancock, 2003; Knopf, 2021; Napoli, 2004; Opalinski & Martinez, 2020; Park et al., 2020; Petcharat & Liehr, 2017; Russell & Guite, 2020; Sunthararajah, 2019; Whitebird & Kreitzer, 2012). Mindfulness promotes potential benefits of patient health outcomes. This project evaluated if mindfulness education with adolescents and young adults would make a significant improvement in depressive symptoms that they experience as reported on the PHQ-9 scale.

The bulk of the participants were Caucasian females from an intact family structure. This potentially could be a prediction of the population within the area of the project site or related to what type of demographics are willing to participate in such a project. Race and gender likely could show reflections of expectations of societal norms which could influence participation.

**Effects of Mindfulness on Depressive Symptoms**

Results of the project demonstrated that there is a significant improvement of PHQ-9 scores and diminished depressive symptoms after a mindfulness zoom education session and personal practice took place. This was an expected outcome as similar data was reported throughout the literature review. Napoli (2004) reported that mindfulness enhanced healthy outcomes and enhanced learning. Mindfulness also increases resilience, self-regulation, and positive relationships which in turn improves both anxiety and depressive symptoms (Burke et al., 2017; Burns et al., 2019; Duncan et al., 2009; Kaiser & Hancock, 2003; Man, 2021; Park et al., 2020; Petcharat & Liehr, 2017; Russell & Guite, 2020; Whitebird & Kreitzer, 2012).

Participants reported that it was easy to engage in the zoom sessions. Being able to access the session online during times where they were not in school was essential to their participation.
The DNP student encouraged personal learning styles and life experiences of the participants to help guide the learning process and activity choices. Participants reported the most likely forms of mindfulness that they would continue to practice would be yoga, spending time in the outdoors, and muscle tension exercises (See Appendix C).

**Strengths**

A strength noted in this project was the enhancement of mindfulness knowledge in the participants through personal learning styles. Ensuring holistic learning was essential to the success of the project. The choice of the site gave a larger population of young people to recruit, while parental guidance was still highly present. Using both medical providers and parental figures to help guide these young adults towards participating in the project was supportive to the strong outcomes of the project.

Another strength was the use of the PHQ-9 scale for data collection as it has been validated thoroughly for the use in primary care settings (Constantini et al., 2020) while self-scoring increased reliability. The PHQ-9 score was relatively easy for each participant to fill out along with the guidance of the site providers. The education was provided in a zoom setting which allowed more participants to attend. As young adults and adolescents are mostly technology savvy they felt comfortable both accessing the zoom and receiving information in this form. Lastly, the Theory of Experiential learning was able to support each participant personally in terms of education and learning style (Kolb, 1993).

The mindfulness education and practice sessions provided benefits to the participants, with potential to provide the DNP student, the site providers, and parental figures with mental health support which can enhance well-being (Kohut & Saltzman, 2021). Each participant was able to leave the learning session with some gained knowledge about what mindfulness is and
how it affects the brain and body. The DNP student engaged in sessions with the participants and therefore enhanced their own mindfulness techniques. Encouragement for mindfulness was also given to site participants as the DNP student shared outcomes of the quality improvement project along with examples of what the providers could suggest to their patients. Participants learned multiple techniques and were able to apply them to their own unique lifestyles. Participants may have chosen to share their gained knowledge with parental figures. Parents who benefit by practicing mindfulness are able to enhance the parent-child relationship (Duncan et al., 2009) and lead to improvement in family dynamic and decreased stressors.

Holistic nursing care that includes mindfulness education can lead to beneficial nursing implications such as promoting wellness, enhancing treatment, alleviating mental health symptoms, and building resilience by continuing to educate their patients on mindfulness (Russell & Guite, 2020). Adolescents and young adults are able to decrease depressive symptoms and improve personal mental health through the practice of mindfulness. This mindfulness project, as with other mindfulness interventions, may also have lead to earlier detection of depression symptoms, increased health care access and treatment options while lowering health care costs (Fulweiler & John, 2018).

**Nursing Implications**

This was a quality improvement project that benefited the clinical site’s stakeholders with positive results and outcomes. This site was previously screening with PHQ-9 forms, offering medication management, and referring to therapists for adolescents and young adults with depressive symptoms. Now the project site has seen that mindfulness has benefited their patients in terms of decreasing PHQ-9 scores and depressive symptoms.
Nurses, along with providers, can easily promote mindfulness education and practice into their care of adolescents and young adults to prevent and minimize depressive symptoms. During patient contact nurses are able to assess risk and make suggestions for care that promote wellness. Promoting resiliency contributes to positive outcomes even if there are risk factors such as depression involved (Short, & Russel-Mayhew, 2009). Youth who are resilient are able to self-regulate, establish realistic goals, problem solve, use effective interpersonal skills and coping strategies, and have a sense of hope and self-worth (Short, & Russel-Mayhew, 2009).

Nurses can strive to be good role models by practicing mindfulness themselves and promoting self-care. By using the Theory of Experiential Learning nurses can holistically provide education based on personal experiences and find unique interventions for each patient (Kolb, 1993). As mindfulness is a vast array of activities, each individual can find a beneficial activity that works for their lifestyle.

**Setting Facilitators and Barriers**

There were limitations to this study such as the minimal time frame that it had to be completed in. Actual recruitment, mindfulness sessions, data collection was done in a much smaller amount of time than likely needed to gain an adequate sample size and complete data. Larger sample size would have promoted increased data collection and a wider base of knowledge about the effects of the intervention.

While it is important to gather data in this age group, it is also challenging to get adolescents and young adults interested in learning about and using mindfulness. While the providers and parents were able to encourage and highly suggest participation, it is up to the participant to take the education and practice of mindfulness seriously. Consent from participants eighteen and older was verbally discussed when they signed up for the project. While assent
from any participants under the age of eighteen came easily as they were the ones to log into the zoom session and participate freely.

Using a zoom meet method of communication enhanced the ease of attending the zoom sessions for these young participants and made the learning platform a comfortable place for them as technology is where most young adults and adolescents thrive.

**Recommendations**

Project recommendations are to extend the time frame of the project outwards to six months to a year of mindfulness sessions and practice. Having multiple sessions available, and a greater practice time would allow for increased benefits to compound and further promote diminishing depressive symptoms. Sessions should be available at a variety of time frames while keeping in mind both school and work schedules. Having week day and weekend sessions could reach more willing participants.

Gathering a larger sample size will support an increased amount of data collection. A larger sample size would also promote diversity in races or genders. This is essential to gain views on mindfulness practice across a wide variety of people. By opening up the project into an adult or family primary care practice it may be able to target an increased amount of adolescents and young adults to participate which could further support wellness within this population.

Having an option for an in-person education session could be beneficial for those participants that are not comfortable using the less intimate zoom session. The in-person session could be held at the clinical site where participants are already comfortable with their surrounds. As one participant stated, “this is slightly awkward to do while sitting on an online platform”.

Opening up the sessions to the parents could allow them to learn how mindfulness works on the body and the brain. Parents are the first hand teachers for youth and if they are on board
with using mindfulness techniques then role modeling will be a positive effect on the youth. If parental perspective on mindfulness is improved it can also support a change in child behavior despite any direct mindfulness activities for the child (Petcharat & Liehr, 2017).

**Participant Feedback**

Feedback was gathered by the DNP student during sessions and afterward with a post participation survey. Of the eighteen participants, only four completed the post survey. Participants did not report or display any difficulties signing up for, or logging in for the mindfulness education sessions. Two participants reported that they wished “the session was held earlier in the day”. While one participant requested sessions to be held on a different day of the week due to their prior engagements.

One participant stated, “the use of the video zoom is really helpful as it is hard for me to get to any activities outside school and soccer”. Another adolescent encouraged the DNP student to “continue to have these sessions so other teens can learn this stuff as well. It was really helpful for me to help with my mood”. Lastly, a participant stated “knowing how to help myself lets me gain control of the situation which I think can be good. I also like to be able to pick the activities that work for me”. Out of the discussed and practiced mindfulness activities the top three choices of yoga, spending time outdoors, and muscle tension/release exercises were what the adolescents and young adults reports to be their primary choice of practice methods.

**Cost-Benefit Analysis/Budget**

Overall, the direct cost of this project was relatively small. Since the clinical site was already functioning regardless of the DNP project. Therefore no site cost came into play and the provider volunteered to accept DNP students. The DNP student gathered information for zoom sessions from free resources through a local public library and UMass library. The DNP student
paid for the participation reward gift cards costing $10 per participant. The DNP student used a personal computer that has only the extra cost of the SPSS program of $57.95. See Appendix F for the cost-benefit worksheet.

The DNP project enhanced health care savings within the clinical setting and beyond. The United States spends roughly $113 billion dollars per year on health care costs (Brown, 2019). Outcomes may decrease the overall cost of health care for patients and institutions by decreasing the need for health care visits due to mental health issues, minimizing medication costs, lessening inpatient, and emergent hospital care costs, and decreasing costs of therapeutic intervention from professionals.

Patients and families often are unable to afford medical and mental health care. This leads to patients who do not seek care, more pronounced health and mental health concerns, and more significant consequences. Inadequately treated mental health patients are frequently in trouble with the law. Patients who have mental health issues, substance abuse issues, and history of incarceration showed the highest health care costs (Steadman et al., 2014).

**Conclusion**

Mental health issues, including depression (Gonzalez-Tejera et al., 2005), are reported in one out of five children under eighteen (Melnyk & Jensen, 2013) and continue to rise among adolescents and young adults. The health care system has struggled to meet the need for mental health care (Knopf, 2021). Through this project, the DNP student evaluated the effectiveness of mindfulness on depressive symptoms in adolescents and young adults. Project outcomes successfully provided mindfulness education to youth which yielded results of decreasing PHQ-9 scores and depressive symptoms. The project supported holistic care that practitioners will be able to use to educate adolescents and young adults in a cost effective, self-sufficient manner.
while forming working relationships, demonstrating positive mental health skills, and promoting wellness. The benefits of mindfulness education and practice supports the cost of health care, long term health outcomes, and lessens complications of depression in adolescent and young adults (Fulweiler & John, 2018).

References


Burke, M.M., Chan, N., & Neece, C.L. (2017). Parent perspectives of applying mindfulness-


http://doi.org/10.1177/1078390319886923


http://doi.org/10.1016/j.jad.2020.09.131


screening, early intervention, and health promotion. 2nd ed. Pediatric National Association of Nurse Practitioners.


Sunthararajah, S. (2019). The effectiveness of mindfulness-based group therapy on anxiety,


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**Appendix A**

**Educational Methods**

<table>
<thead>
<tr>
<th>Author</th>
<th>Learner</th>
<th>Educational Method</th>
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</thead>
<tbody>
<tr>
<td>Belschner et al. (2020)</td>
<td>parent</td>
<td>Skills training program</td>
</tr>
<tr>
<td>Burke et al. (2017)</td>
<td>parent</td>
<td>mindfulness-based stress reduction intervention</td>
</tr>
<tr>
<td>Study</td>
<td>Target Group</td>
<td>Interventions</td>
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<td>--------------</td>
<td>-------------------------------------------------------------------------------</td>
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<tr>
<td>Burns et al. (2019)</td>
<td>Parent</td>
<td>Taught mindfulness exercises, habits of resilience, parenting skills and child development</td>
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<tr>
<td>Carei et al. (2010)</td>
<td>Adolescent</td>
<td>Yoga intervention program</td>
</tr>
<tr>
<td>Duncan et al. (2009)</td>
<td>Parent</td>
<td>Evidence-based family prevention program, mindfulness parenting course</td>
</tr>
<tr>
<td>Gonzalez-Tejera et al. (2005)</td>
<td>Adolescent age 11-17, Parent</td>
<td>Interview scales</td>
</tr>
<tr>
<td>Knopf (2021)</td>
<td>Youth</td>
<td>Behavioral therapy sessions</td>
</tr>
<tr>
<td>Napoli (2004)</td>
<td>Teacher</td>
<td>Mindfulness training, group discussions on articles</td>
</tr>
<tr>
<td>Opalinski &amp; Martinez (2020)</td>
<td>Children</td>
<td>Guided mindfulness exercises</td>
</tr>
<tr>
<td>Park et al. (2020)</td>
<td>Parent</td>
<td>Stress Management &amp; Resiliency Training-relaxation response resiliency program</td>
</tr>
<tr>
<td>Pecharat &amp; Liehr (2017)</td>
<td>Parent</td>
<td>Mindfulness weekly sessions, homework</td>
</tr>
<tr>
<td>Russell &amp; Guite (2020)</td>
<td>Parent</td>
<td>Parents as Coping Coaches (paCC) group intervention session</td>
</tr>
<tr>
<td>Sunthararajah (2019)</td>
<td>Adolescents age 14-18</td>
<td>Mindfulness-based training program, slideshow presentation</td>
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### Appendix B

**Methods Used by Authors to Gather Results from Samples**

<table>
<thead>
<tr>
<th>Author</th>
<th>Sample</th>
<th>Evaluation Tool</th>
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</thead>
<tbody>
<tr>
<td>Belschner et al. (2020)</td>
<td>39</td>
<td>Observation, semi-structured diagnosis interview, self reports</td>
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<tr>
<td>Study</td>
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<td>Method</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Burke et al. (2017)</td>
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<td>interview</td>
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<td>Burns et al. (2019)</td>
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<td>Carei et al. (2010)</td>
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<td>State-Trait Anxiety Inventory</td>
</tr>
<tr>
<td>Duncan et al. (2009)</td>
<td>3</td>
<td>interview</td>
</tr>
<tr>
<td>Gonzalez-Tejera et al. (2005)</td>
<td>1890</td>
<td>Questionnaires, Diagnostic Interview Schedule in Spanish (DISC IV), Parent Interviewer Children’s Global Assessment Scale (PIC-GAS), Child Health Questionnaire (PARENT)</td>
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<tr>
<td>Kaiser &amp; Hancock (2003)</td>
<td>200</td>
<td>Interview pre and post</td>
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<tr>
<td>Knopf (2021)</td>
<td>185</td>
<td>Interviews looking for specific details: # anxiety free days, depression free days, Quality adjusted life years, cost</td>
</tr>
<tr>
<td>Napoli (2004)</td>
<td>3</td>
<td>Participant interviews</td>
</tr>
<tr>
<td>Opalinski &amp; Martinez (2020)</td>
<td>unavailable</td>
<td>Distressing emotions scale, counselor perception, campers activity choices</td>
</tr>
</tbody>
</table>
Appendix C

Data Collection Form

ID: (First Initial, Last Initial, Year of Birth)  ex. (RB1979)

PMH/DX:

Demographics: (age, sex, race, family structure)

Medications:

Therapies:
Pre PHQ-9 score:

Post PHQ-9 score:

Preferred Mindfulness Activities:

Appendix D

IRB Approval
Appendix E

Cost-Benefit Worksheet
<table>
<thead>
<tr>
<th>Cost</th>
<th>Payer</th>
<th>Benefit</th>
<th>Who Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational site</td>
<td>none</td>
<td>Mentor/Owner has already volunteered to have DNP student carry out project at a site that is already operating and costs continue as is for the owner</td>
<td>DNP student &amp; Participants</td>
</tr>
<tr>
<td>$0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Books &amp; Resources</td>
<td>none</td>
<td>DNP student will have no additional costs to gathering information by using public library and UMass Library</td>
<td>DNP student, participants &amp; site providers</td>
</tr>
<tr>
<td>$0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gift cards</td>
<td>DNP student</td>
<td>Participant receives reward, DNP student is able to gather sufficient participants</td>
<td>DNP student &amp; Participant</td>
</tr>
<tr>
<td>$10/participants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPSS software</td>
<td>DNP student</td>
<td>Software makes data analysis capable for DNP student, Providers and participants gain knowledge of outcomes</td>
<td>DNP student, participants &amp; site providers</td>
</tr>
<tr>
<td>$57.95</td>
<td></td>
<td></td>
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</tbody>
</table>