Spring 2024

Utilizing a Structured Music Therapy Program for Adolescents with Anxiety and Depression

Amy Haagen
ah987630@wcupa.edu

Utilizing a Structured Music Therapy Program for Adolescents with Anxiety and Depression

A DNP Project

Presented to the Faculty of the

Department of Nursing

West Chester University

West Chester, Pennsylvania

In Partial Fulfillment of the Requirements for

the Degree of

Doctor of Nursing Practice

By

Amy Haagen, MSN, RN

May 2024

Dedication

This DNP project is dedicated to all the staff within the Adolescent Behavioral Health Unit that helped to make this project a reality. This continued quality improvement project would not have been possible without you.

Acknowledgements

I have been blessed to have many people throughout the last three years supporting me on my journey to obtaining my DNP. I would like to thank my project advisor, Dr. Jackie Owens. You have offered me continued support, guidance, wisdom, and knowledge during this last year. I have learned so much from you and am thankful for the impact you had on my educational experience. I would also like to thank Dr. Wilbur and Dr. Schlamb for their support and expertise during my time at WCU.

Thank you to Jane Adair and Arianne Iorfido from Penn Highlands Healthcare. This DNP project would not be possible without you! I am so grateful for your support and assistance in believing in this project and the time and effort that you put into making it a reality. The care and devotion you give to your patients is amazing and I am honored to have been part of your team for a short time.

Thank you to Dr. Darlene Ardary, my DNP mentor and colleague. You were a sounding board for me on many occasions and gave me great advice and assistance with my DNP project. Thank you to all my other colleagues who supported me throughout this process. A huge thank you to Andrew Talbot, you were such an amazing role model and guide in my data analysis. I could not have done this without you!

Thank you to my family and friends who gave me unconditional love and were my rock during this journey. I could not have done this without my husband David. You have been there for me every step of the way, motivating me and being my best support. Thank you to my sons, Ethan, and Landon, you were my inspiration to accomplish this goal and I love you both very much!

Abstract

Anxiety and depression are two of the most common mental health issues that affect children and adolescents. It has been noted that twenty percent of adolescents will have a depressive episode or be affected by anxiety by the time they are 18 years old. Mental health issues affecting children and adolescents majorly impact all aspects of their lives, most notably academic success, behavior, growth, and development (Porter et al., 2017). Current treatments for mental disorders, including depression and anxiety, include pharmacological and psychotherapeutic treatments. In the adolescent population, there are conflicting opinions on the use of antidepressants due to risks of adverse effects, and a need for other effective treatments are needed (Porter et al., 2017). Collaboration with adolescent behavioral health professionals determined that there was a need for an alternative treatment for anxiety and depression. The purpose of this DNP project was to implement a structured music therapy (MT) program for adolescents in an inpatient behavioral health unit who have anxiety and depression. There was a moderate effect for therapy condition (no MT group compared to MT group) on anxiety levels and significant effect of successive treatment days on depression and anxiety levels.

Keywords: (Adolescents, anxiety, depression, behavioral health, music therapy)

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Chapter 1

Anxiety and depression are two of the most common mental health issues that affect children and adolescents. It has been noted that twenty percent of adolescents will have a depressive episode or be affected by anxiety by the time they are 18 years old (Porter et al., 2017). While anxiety and depression often occur concurrently, adolescents are more at risk of being affected by anxiety due to the many psychological, social, and physiological changes and transitions that occur during adolescence (Belski et al., 2022). Additionally, a study found that one in every four or five adolescents in the United States of America has a mental health disorder and that anxiety disorders accounted for 31% and mood disorders for 14.3% (Uhlig et al., 2016).

Mental health issues affecting children and adolescents majorly impact all aspects of their lives, notably academic success, behavior, and growth and development. A recent statistic notes that 2.6% of young people throughout the world deal with depression, and as a result, this impairs education attainment and their ability to function socially (Porter et al., 2017). The psychological well-being and quality of life of children and adolescents with mental disorders have been directly linked with a decline in academic achievement compared to those without mental disorders (Grebosz-Haring & Thun-Hohenstein, 2018; Uhlig et al., 2016).

Adolescents generally display “anti-social” behaviors and find it challenging to communicate with parents, teachers, and other significant adult figures. Emotional disturbances that children and adolescents with depression and anxiety experience can prevent them from achieving social and cognitive milestones for their age. They may also show aggression, impulsivity, short attention spans, and poor on-task behavior in educational settings, which require specialized intervention (Keen, 2005; Layman et al., 2022). These impairments can

continue to impact a young person's life into adulthood if not treated promptly (Porter et al., 2017).

Background

Current treatments for mental disorders, including depression and anxiety, include pharmacological and psychotherapeutic treatments. Despite the use of these various treatments, the recurrence continues. One study found that at least 50% of patients with general anxiety disorder (GAD) continued with symptoms even after receiving first-line treatments (Belski et al., 2022; Govindan et al., 2020). In the adolescent population, there are conflicting opinions on the use of antidepressants due to the risks of adverse effects, and a need for other effective treatments are needed (Porter et al., 2017). An alternative treatment for adolescent anxiety and depression is music therapy (MT). Current research supports further investigation into MT as a promising alternative treatment.

MT allows the therapist and patient to work together to positively affect behavior and general development in educational and therapeutic settings. MT allows patients to improve their social skills and emotional expressiveness and develop a sense of identity (Choi et al., 2008; Gold et al., 2007; Porter et al., 2017). MT has been found to regulate activity and tension and positively affect mood and motivation. Music is a therapeutic technique for high school-age children who have encountered various types of trauma. Music has assisted in physiological and psychological recovery for this age group (Aggarwal, 2021).

Significance

The setting for this DNP project was an inpatient adolescent behavioral health unit, which averages 10 to 15 patients per day. Most adolescents admitted have one or more of the following diagnoses: Major Depressive Disorder, Depressive Disorder otherwise unspecified, General

Anxiety Disorder, and Social Anxiety Disorder. There was no type of structured MT program for the patient. Therapy staff had used MT in the past but not in any structured format or consistent manner. Therapy staff, nurses and clinicians had seen improvements during the short periods when MT was implemented and felt if it was incorporated into daily treatment plans there would be a positive outcome for the patients to aid in decreasing their anxiety and depression.

This project incorporated a structured MT program in an inpatient adolescent behavioral health unit. The goal was to have clients decrease their anxiety and depression. Adolescents in the Behavioral Health Unit accomplished this goal by participating in 60 minutes of MT daily, Monday through Friday. The structured MT program was developed and presented to the relevant stakeholders and was unanimously approved for implementation for this DNP project.

Clinical Question

The clinical question proposed for this DNP project is as follows. In adolescents affected by anxiety and depression, how does a structured MT program used in an inpatient behavioral health unit affect their rating of anxiety and depression and impact the treatment plan for their anxiety and depression? The outcome of this DNP project is to have patients decrease their anxiety and depression while utilizing a structured MT program.

Goal & Objectives

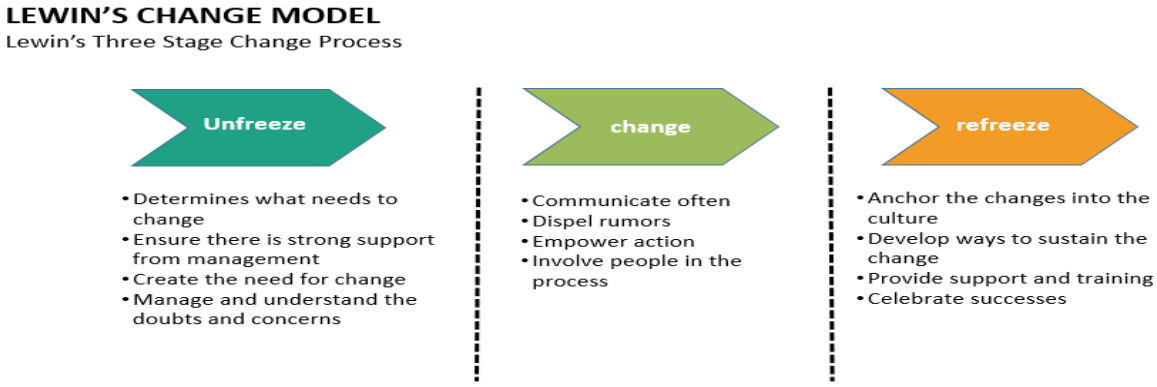
Implement a structured MT program on inpatient adolescent behavioral health unit to decrease anxiety and depression and become a regular part of their treatment plan for anxiety and depression. The objectives for this goal are:

- Clients will participate in MT for an hour daily Monday through Friday while on inpatient Behavioral Health Unit from January 8, 2024 to February 16, 2024.
- Clients will have decreased levels of anxiety and depression after attending MT for an hour daily, Monday through Friday, from January 8, 2024, to February 16, 2024.

Theoretical Framework

For this DNP project, Lewin's Force Field Theory will be used. Lewin's theory is composed of three stages, which include the unfreezing stage, the moving stage, and refreezing (Finkelman, 2022). During the unfreezing stage, knowledge will be increased about the problem and promote awareness of the importance of additional treatment. In the moving stage of Lewin's theory, the structured music program will be implemented on the behavioral health unit. The refreezing stage will occur as the structured music program is incorporated into the plan of care (Figure 1).

Figure 1



Summary

Based on feedback from staff in the inpatient behavioral health unit and evidence supporting MT as an alternative treatment for adolescent anxiety and depression, a DNP project utilizing a structured MT (SMT) program in an inpatient behavioral health unit was performed. The staff on the behavioral health unit implemented the SMT program. During the time of the SMT the level of anxiety and depression was evaluated on each patient. Outcomes resulted in a decrease in anxiety and depression with the use of the SMT.

Chapter 2

Literature Review

Chapter two is a review of the literature that includes an overview of the effects of adolescent anxiety and depression. It will discuss settings where MT takes place, its effectiveness, and the assessment tools used. It will include definitions, a search strategy, a summary of the literature, gaps in the literature, and a purpose summary.

Definitions

Key terms used in the literature review include adolescents, anxiety, depression, pharmacological treatments, MT, and MT interventions. Adolescence is the transitional stage from childhood to adulthood between the ages of 13 and 19. Anxiety involves feelings of tension, worried thoughts, and physical changes such as increased blood pressure. Depression is associated with persistent feelings of sadness and loss of interest, affecting how you feel, think, and behave.

Pharmacological treatments include prescription medications such as antidepressants to treat depression and anxiolytics to treat anxiety. MT (MT) is a nonpharmacological treatment that aids in treating physical, emotional, cognitive, and social needs. MT interventions include a variety of options, including but not limited to listening to music, songwriting, music performance, and learning through music.

Search Strategy

The literature review process began in spring 2023 and continued through February 2024. The search databases used were CINAHL and PubMed. The search terms used included children, adolescents, anxiety, depression, music, and inpatient and outpatient settings. More than thirty articles were found. Articles ranged from 1998 to 2022 due to an inadequate number of research

articles that contained specific terms used in the search from the initial search date range for 2015-2022.

The sixteen articles for this literature review were varied and included five randomized control trials, three pilot studies, and two systematic reviews. The remaining included one quasi-experimental study, one pilot-controlled trial, one observational study, one research analysis, and two projects using surveys. Numerous questionnaires were used to evaluate anxiety, depression, aggression, quality of life, and others. Outcomes were primarily measured by validated tools; there was not one tool that was widely used among all articles. This literature review focused on the following themes: children and adolescents affected by anxiety and depression, MT performed in inpatient settings exclusively, outpatient settings exclusively, and both, as well as the effectiveness of MT for anxiety and depression.

Review of Literature

Children and Adolescents Affected by Anxiety and Depression

Anxiety and depression affect individuals of all age groups. In this review, the focus is on children and adolescents, primarily due to the ages of patients in an inpatient behavioral health unit where the quality improvement project was performed. Four articles used children and adolescents with anxiety and depression for the subject group. A systematic review from Belski et al. (2022), included participants aged five to eighteen years old. Another study used participants aged seven to seventeen (Grebosz-Haring & Thun-Hohenstein, 2018). Kennedy et al. (2014) noted participants were from a child and adolescent psychiatry program but did not specify exact ages. Montello and Coons (1998) included subjects from eleven to fourteen years old with the mean age being 11.94 years. Aggarwal (2021) performed their research on adolescents ranging from 14 to 19 years of age.

Several studies looked at children and adolescents affected by depression and anxiety concurrently while using MT or MT and other interventions combined (Belski et al., 2022; Fernandez et al., 2014; Grebosz-Haring & Thun-Hohenstein, 2018; Keen 2005, Kennedy et al., 2014; Montello & Coons, 1998). Four other studies focused on depression and anxiety separately (Goldbeck & Ellerkamp, 2012; Layman et al., 2022; Porter et al., 2017; Stegemann et al., 2019). One study looked only at anxiety and stress levels with the use of art and MT (Aggarwal, 2021). The four remaining articles focused on various problems, including behavioral problems, academic, social, and emotional skills, emotion regulation and symptoms, competencies, and quality of life (Chong & Kim, 2010; Gold et al., 2007; Govindan et al., 2020; Uhlig et al., 2016).

Settings of Music Therapy

MT was performed in various settings throughout the literature review of the sixteen articles. Four of them were performed exclusively in the inpatient setting, eight were performed in an outpatient setting only, and two were performed in both inpatient and outpatient settings. All the inpatient settings were performed in inpatient mental health care facilities, and outpatient settings primarily included school-based settings.

Two of the inpatient settings used included Child and Adolescent Mental Health Services (CAMHS) within the Belfast Health and Social Care Trust in Northern Ireland and another similar included the Department for Child and Adolescent Psychiatry/PMU Salzburg, Austria (Grebosz-Haring & Thun-Hohenstein, 2018; Porter et al., 2017). Govindan et al. (2020) included children admitted to the Child Psychiatry Centre (CPC) inpatient setting. Pediatric mental health care and other inpatient settings were included in the research by Stegmann et al., 2019.

Two of the eight outpatient settings used special education settings specifically. Gold et al. (2007) performed MT in outpatient care and special education centers in the Vienna area. A

special education program in a public middle school in New York City was the focus of research done by Montello & Coons (1998). Three articles used school settings in MT research. Two focused on general groups of elementary students from 13 different schools, and a non-clinical school-based program (Govindan et al., 2020; Uhlig et al., 2016). Another focused specifically on a student group of Spanish eleventh grade students (Fernandez et al., 2014).

The last three outpatient settings focused on private practice, at their home and an after-school program. Keen (2005) used a private practice setting for the observational study and evaluated it on a case-by-case basis. Children were recruited from a social welfare center's after-school program (not aimed at treatment but for a normal care system) in a study by Gold et al., 2007. Belski et al. (2022) used various settings based on their systematic review. A residential and day treatment center in Cleveland, Ohio for severely emotionally disturbed children was used by Layman et al., 2022. An online survey was used to collect data from adolescents to identify what they used during times of stress and anxiety (Aggarwal, 2021).

Effectiveness of Music Therapy for Anxiety and Depression

Several articles evaluated the impact that MT exclusively has on anxiety and depression. Overall, most of the articles supported the use of MT. Belski et al. (2022) identified that MT is a promising intervention for depression and anxiety. They did note a difference in the length of time of effectiveness between the two. Improvement in depressive symptoms was seen at short and intermediate-term follow-ups, whereas improvement in anxiety symptoms was limited to short-term follow up.

Music-related interventions (MuRI) were found to benefit children and adolescents with mental disorders. Differences were noted in psychobiological responses to singing and listening to MuRI, which promote further investigations (Grebosz-Haring & Thun-Hohenstein, 2018).

Fernandez et al. (2014) identified that music can enhance tolerant behaviors, improve social abilities, and school performance in addition to assisting with anxiety and depression when using the right strategies.

Music therapy is generally a well-accepted, non-confrontative means of expression and safe intervention in pediatric health care. It is easy to implement in clinical practices and helps to alleviate symptoms and improve quality of life (Stegemann et al., 2019). Further research supports integrated music as well as art, dance/movement, and yoga therapies into patient care. These interventions have the potential of providing coping skills, stress relief and relaxation to patients in addition to benefiting both clinical and milieu staff. Music allows individuals with anxiety and depression a socially acceptable way to vent anger and fears, as well as increase self-esteem, self-confidence, and self-awareness (Keen, 2005; Kennedy et al., 2014).

Aggarwal (2021) noted that for most participants (80%) art, music, and exercise were the most effective stress relievers. For their sample population 28% reported that art therapy was most beneficial to them versus 61.3% who stated that listening to music helps them to cope during times of stress and anxiety. Porter et al. (2017) looked only at depression as an outcome and not anxiety. They noted that there is evidence for integrating MT into clinical practice but there still needs to be more evidence relating to subgroups and secondary outcomes. Montello & Coons (1998) looked at passive versus active MT and noted that passive MT was less threatening to some participants and noted the importance of creating a sense of safety within the therapeutic environment.

The benefits of MT were seen throughout the literature review. MT (MT) was used alone without any other interventions in twelve of the articles. Of the thirteen that used MT, there were many variations of how they performed MT. There are various types of MT that can be used

effectively for the treatment of depression and anxiety. Some typical techniques include singing familiar songs or improvised songs, listening to music and verbal reflection on the musical processes in relation to the patient and their mental health issues (Gold et al., 2007). Other techniques include instrumental playing and sound projection which can assist with emotional problems such as depression and anxiety (Chong & Kim, 2010).

Assessment Tools

In the seven articles that examined MT and other interventions in children and adolescents with depression and anxiety, none of them used any of the same assessment tools. Belski et al. (2022) used five different assessment tools for measuring outcomes which included the Center for Epidemiological Studies Depression Scale for Children (CES-DC), Child Depression Inventory (CDI), Hospital Anxiety and Depression Scale (HADS), Reynolds Adolescent Depression Scale, 2nd edition (RADS 2), and State-Trait Anxiety Inventory for children (STAIC-T). Another study by Grebosz-Haring & Thun-Hohenstein (2018) used biological outcomes by obtaining a saliva sample to measure cortisol levels, Multidimensional Mood Questionnaire (MDBF), Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), and the Pediatric Quality of Life Inventory 4.0 Generic Core Scale Child Self-Report Version (PedsQL). A questionnaire was used by Aggarwal (2021) to understand the stress that adolescents experience, what they use to overcome, and if art or music assists in the decrease of anxiety and/or stress.

Four of the others used Emotional Intelligence (E.I.), Intelligent Quotient (I.Q.), self-motivation and self-concept, a root survey with other questions added depending on the individual answering survey questions, and the last one used Child Functioning Inventories

(CFI), and Teacher's Report Form (TRF) (Fernandez et al., 2014; Keen, 2005; Kennedy et al., 2014; Montello & Coons, 1998).

Gaps in Literature

Four articles focused on the use of MT in combination with other therapies. One used MT and other music interventions and activities, another used Complementary and Alternative Medicine (CAM) and a third used multimodal MT alternative, which is a primarily nonverbal approach for the implementation of evidence-based principles of CBT. Further evidence is needed to determine what type of MT is most effective in the treatment of depression and anxiety.

This literature review examined MT used in various settings and the effect it has on children and adolescents' lives, including social, academic, and behavioral aspects of depression and anxiety. Depression and anxiety are two mental illnesses that occur together in many children and adolescents and there is a need for successful treatment. Current treatments do not show long term effectiveness and therefore MT is a promising alternative treatment that supports further evidence.

Purpose Summary

Based on the literature current treatment for adolescent anxiety and depression does not support long-term effectiveness. MT has been suggested as an alternative treatment for adolescent anxiety and depression. Based on those findings the purpose of this DNP project is to incorporate a structured MT program in an inpatient adolescent behavioral health unit. This alternative method of treatment for adolescent anxiety and depression is necessary and this DNP project will provide MT as one that has been found successful in literature.

Chapter 3

Methods

This chapter will discuss the design, methodology, setting, people, and resources involved with this DNP project. Other areas included in this chapter will include sample, access, recruitment method, ethical consideration, data collection, instrument, data analysis, anticipated barriers, strategic plan, and budget will be reviewed. Lewin's Force Field Theory was applied in each step of this DNP project. The DNP project was performed on an inpatient adolescent behavioral health unit. It consisted of a structured MT program that was performed Monday through Friday for six weeks. Each patient was evaluated daily for anxiety and depression.

Design

This DNP project utilized a retrospective pre- and post-implementation quality improvement design to evaluate levels of anxiety and depression. This design compared pre-intervention data when there was no structured MT program on the inpatient adolescent behavioral health unit. This allowed for the assessment of adolescents' anxiety and depression for six weeks before and during the use of a structured MT program.

Methodology

Data was collected from the weekly paper assessments where staff evaluated patients' levels of anxiety and depression daily, Monday through Friday. IRB approval was obtained by West Chester University and the implementing organization. Retrospective data was analyzed to determine the level of anxiety and depression before starting the structured MT program. Pre MT-data was collected during therapy time on the unit. This time occurred for one hour in the morning and incorporated various types of therapy including cognitive, sensory and others. During MT data collection, MT was performed at the same time of the day as pre-MT data

collection but was exclusively MT based on evidence supporting listening, drumming, and reflection on music.

- The clinical supervisor of the behavioral health unit communicated with therapists about the structured music program. The author created a step-by-step list of instructions for the structured MT program for the therapists to follow along with the author's cell phone number, should they have any questions.
- The author created two YouTube playlists for the staff at Penn Highlands Healthcare for the structured music program—one for when patients enter the group, and one for when patients leave the group. The music played on entry to the group included welcoming songs such as John Williams' Olympic music, "E.T.-Flying Theme" (John Williams), and "Your Life Is Now", (John Mellencamp). The music played when leaving the group included closing songs such as "So Long, Farwell" (from "The Sound of Music"), "Happy Trails" (Roy Rogers/Dale Evans), and "Goodbye Yellow Brick Road" (Elton John). The music selection was chosen based on the article titled "Using Brain-Friendly Music in the Classroom" by Janet Elder.
- Pool noodles will be placed in the location of the structured MT program.
- A computer and speakers were placed in the location of the structured MT program.
- Informed consents were given on admission to parent (s)/guardian (s) and patient.

Theoretical Framework

Lewin's Force Field Theory was utilized for this DNP project. The framework is used to identify, analyze, and adjust when needed because of the driving forces in this situation. The process of unfreezing, moving, and refreezing are used to increase driving forces (Finkelman, 2022). During the unfreezing stage, it is important to increase knowledge about the problem and

promote awareness. Educating nurses, therapy staff, and other disciplines on the behavioral health unit will be important to start this change. Educating them on the effectiveness of MT based on evidence was key to beginning this change.

During the moving stage of Lewin's theory, the structured MT program was implemented on the behavioral health unit. After informed consent was obtained, adolescents on the unit received an hour of the structured MT program during the six weeks of the implementation Monday through Friday. The refreezing stage occurred as the structured MT program was incorporated into the plan of care for each client on the adolescent behavioral health unit. The structured MT program used in the plan of care allows for the impact to occur with all clients and not individuals exclusively (Finkelman, 2022). The three stages of Lewin's Force Field Theory Application to the DNP project are shown in Table 1.

Table 1

Lewin's Force Field Therapy Application to the DNP Project

Stage Explanation of stage	Steps used in DNP Project
Unfreezing Increase knowledge about problem and promote awareness.	• Discuss anxiety and depression, long term negative effects and positive impact MT can have in treatment. • Providing education to nurses, recreational therapists, and other disciplines in the behavioral health unit.

Moving Stage Implementing the DNP project.	• Part one will include music playing as patients enter the group. • Part two will involve listening and reflecting on music that is played for patients. • Part three will involve a drumming session with various songs and pool noodles used for drumming. • Part four will include music as patients end the group.
Refreezing Structured music program is incorporated into the plan of care.	• Incorporated into the plan of care for each client on the children and adolescent behavioral health unit. • Allows for the impact to occur with all clients and not individuals exclusively.

Setting

The structured music program was performed daily Monday through Friday on the adolescent behavioral health unit for six weeks from January 8, 2024, until February 16, 2024. The therapy room on the inpatient adolescent behavioral health unit is the area that was used for this project. The room was equipped with a computer and speakers to play music and pool noodles were available for use during the program as well.

People Involved and Resources

The clinical supervisor for the unit served as the liaison between the author, nurses, and therapy staff. The clinical supervisor updated the nurses and therapy staff throughout the pre and post implementation of their role with assessment of anxiety and depression, implementation of the MT program and the process of getting informed consent signed on admission. The therapy staff monitored patients daily Monday through Friday during pre and post implementation to identify if there were any changes in their level of functioning or increased anxiety and depression.

Sample, Access, and Recruitment Methods

This DNP project used a purposive sample of adolescents, both male and female, on an inpatient behavioral health unit. Inclusion criteria consisted of male and female inpatients aged 12-18 years old with a diagnosis of anxiety and/or depression. This DNP project did not involve recruitment. Patients who were on the adolescent behavioral health unit received the structured MT program as part of their therapy if informed consent was obtained. Patients had the option to refuse therapy during their time in the inpatient unit as that is a right of the patient.

Ethical Considerations and Consent

This DNP project involved a vulnerable population based on the following Institutional Review Board (IRB) criteria Minors with Parental Consent, Minors Who can Consent Themselves (Emancipated Minors), and Persons with Acute and/or Severe Mental or Physical Illness. Children and adolescents aged 12-18 years old were required for the target population used for this DNP project. Focusing on the target population was necessary to expand the knowledge of non-pharmacological treatments for anxiety and depression. Due to the vulnerability of the project population, informed consent was used for the DNP project. IRB approval was obtained from West Chester University (WCU) (Appendix A).

The therapy staff on the inpatient adolescent behavioral health unit obtained informed consent from the parents or guardians of the patients. Parents, guardians, and adolescents were given the author's contact information including phone and email address and the IRB at WCU to address any questions related to the project (Appendix B). A letter of cooperation was also required and obtained from the facility where the DNP project took place. This letter required the author to use Expert Determination Method to De-Identify patient information (Appendix C).

Data Collection

The therapy staff collected levels of anxiety and depression Monday through Friday during the assessment of the adolescent patients. Therapy staff recorded information on a paper assessment form, rating the number of anxiety and depression as noted by adolescent patients. There was also an option for patients to refuse and not applicable. The Primary Investigator gathered data from paper assessments during the six weeks prior to the structured MT program and six weeks during the structured MT program. Patients' diagnoses were also collected to ensure only patients with a diagnosis of anxiety and/or depression were used in data collection.

Instruments

The only instrument that was used for this DNP project was the Daily Rating Scale for Anxiety and Depression for adolescent patients on the behavioral health unit. The instrument included a scale of 1-10 for both anxiety and depression that patients were asked to rate daily Monday through Friday. The Daily Rating Scale for Anxiety and Depression was copyrighted by Douglas Bloch in 2009 (Appendix D). The therapy staff monitored the patient's anxiety and depression daily using the Daily Rating Scale for Anxiety and Depression. The therapy staff identified if the MT was having a negative effect on them and consulted the healthcare team to determine if they should continue attending the daily structured MT program.

Data Analysis

The retrospective pre and post assessment of anxiety and depression was analyzed using comparison statistics to determine the level of anxiety and depression on each day of the patients stay on the inpatient unit. A series of bivariate and multivariate tests were used to produce inferential findings. Reports on data that were analyzed included day one to day four for all patients who received MT and those who did not receive MT. This was completed for those with

anxiety and those with depression. Another report looked at the comparison between day one and the last day of treatment for all patients who received MT and those who did not receive MT again for both anxiety and depression.

To ensure that there were no biases during this DNP project, all patients on the inpatient adolescent behavioral health unit were given the opportunity to participate. Male and female patients were included as well as ages from 12-18, which are the ages of patients on the unit. There was no recruitment done for this project, and participation was voluntary and required informed consent from parents or guardians for all patients, although in the state of Pennsylvania, an adolescent age 14 or older can sign an informed consent. The author used parent and guardian consent for all patients even those 14 and older.

Anticipated Barriers

Anticipated barriers, as noted by IRB, included social or psychological risks. An increase in anxiety and/or depression, which could last for less than 24 hours, is one that was identified. Anxiety and depression were monitored daily to identify if patients were having an increase in anxiety and/or depression. If increases were seen, then patients were evaluated to determine what was causing the increase and if MT was noted, they were given the option to decline that group therapy.

Strategic Plan and Budget

The strategic plan for this DNP project was to implement a structured MT program daily, Monday through Friday, on the adolescent behavioral health unit to decrease anxiety and depression. This occurred while working closely with clinical supervisor for the unit, therapy staff who performed the structured MT program and assessments of anxiety and depression on patients.

Items used in project design were limited to pool noodles for drumming which had a cost of thirty dollars for six pool noodles and the noodles themselves were split into two or three sections each to give the length needed for drumming. Music was created from a YouTube playlist which was without cost and the unit already had a computer with speakers to play music from. The timeline for this DNP Project is shown in Table 2.

Table 2

Timeline for DNP Project

IRB application	**Six weeks assessment- No Music Therapy**	**Six weeks assessment- Music Therapy**	**Assessment of pre and post implementation data**	**Chapter 4 and 5**
Initial-10/10/2023	11/13-11/11/17/2023	1/8-1/12/2024	11/17-Pre 1/12-Post	Chapter 4- March 1-15, 2024 Working with statistician to assist with Chapter 4
	11/20-11/24	1/15-1/19	11/24-Pre 1/19-Post	Chapter 5- March 15-30,2024
	11/27-12/1	1/22-1/26	12/1-Pre 1/26-Post	
	12/4-12/8	1/29-2/1	12/8-Pre 2/1-Post	
	12/11-12/15	2/4-2/8	12/15-Pre 2/8-Post	
	12/18-12/22	2/11-2/15	12/22-Pre 2/15-Post	

Summary

This DNP project utilized a retrospective design with pre and post-test assessment of anxiety and depression on an inpatient behavioral health unit. Ethical considerations included informed consents on all participants, a letter of cooperation from the institution where the

project took place, and IRB approval from WCU. Lewin's Force Field Therapy was used for the application of this project and data collection was obtained through The Daily Rating Scale for Anxiety and Depression. Data analysis was explained, anticipated barriers were addressed, and the plan, budget and timeline were all explained.

Chapter 4

Results

This DNP project used a retrospective pre and post implementation quality improvement design to evaluate the use of a structured MT program on an inpatient adolescent behavioral health unit. Retrospective data was collected from November 13, 2023, to December 22, 2023. Post-implementation data was collected from January 8, 2024, to February 16, 2024.

There was variability for inpatient stay for many patients. The average length of stay for no MT was 4.45 (SD 2.77) and MT was 5.43 (SD 3.09). There were several instances when patients either refused to rate their depression and/or anxiety score or listed non-applicable. Due to this information, the evaluation of first day and last day score for both depression and anxiety were evaluated.

Data Analysis Plan

The SPSS (16.0) version was used for all statistical analysis. The data analysis was planned in two phases. First, all study variables were presented using descriptive statistics such as means, standard deviation and minimum/maximum values for continuous variables (level of depression and anxiety). Next a series of repeated measures ANOVA analyses were used to produce inferential findings. Statistical significance was set at $p < .05$. Data were analyzed across the first four days of treatment for those clients who remained in therapy for at least that long.

While this analysis provided an ability to see the impact of therapies across a controlled number of days, many clients were not represented due to shorter residential periods. Therefore, as a follow-up analysis, a set of tests were conducted to include the greatest number of clients served during the research period. To accomplish this, the data from the first and last days of treatment were analyzed.

Depression Day 1 to Day 4

Using only those patients who were admitted with a diagnosis of depression and whose stay in therapy lasted at least four days (n = 31), a repeated-measures two-way ANOVA was performed to evaluate the effect of therapy condition and four successive treatment sessions on depression levels. Mauchly's test indicated that the assumption of the sphericity had been violated, $\chi^2(5) = 32.16$, $p < .001$, and therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ($\varepsilon = .58$).

There was no significant interaction between therapy condition, treatment with MT versus no MT, and treatment time on depression levels. The effect of successive treatment days on depression time was significant. There were no significant differences between any pairs other than Day 1 and Day 4 ($p = .05$). There was no main effect for therapy condition on depression levels. (see Table 3).

Anxiety Day 1 to Day 4

Using only those patients who were admitted with a diagnosis of anxiety and whose stay in therapy lasted at least four days (n = 21), a repeated-measures two-way ANOVA was performed to evaluate the effect of therapy condition and four successive treatment sessions on anxiety levels. Mauchly's test indicated that the assumption of the sphericity had been violated, $\chi^2(5) = 22.28$, $p < .001$, and therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ($\varepsilon = .66$).

There was no significant interaction between therapy condition, treatment with MT versus no MT, and treatment time on anxiety levels. The effect of successive treatment days on anxiety time was not significant. There was a moderate effect for therapy condition on anxiety levels. (see Table 3).

Table 3

Depression and Anxiety Levels from Day 1 to Day 4 of Treatment Across Therapy Types (Music Therapy; MT; Traditional Therapy)

	Music Therapy		Traditional Therapy	
Therapy Day	**Depression M (SD)**	**Anxiety M (SD)**	**Depression M (SD)**	**Anxiety M (SD)**
1	3.69 (3.17)	4.67 (3.66)	3.50 (3.13)	6.45 (3.53)
2	3.54 (2.40)	3.78 (3.52)	4.20 (2.53)	4.91 (3.30)
3	3.08 (2.18)	3.33 (3.76)	3.30 (2.11)	5.18 (3.68)
4	2.85 (2.34)	3.11 (3.61)	3.70 (2.58)	4.45 (3.88)

First Day Depression Score, Last Day Depression Score

Using all patients who were admitted with a diagnosis of depression and whose stay was at least two days (n = 70), repeated-measures two-way ANOVA was performed to evaluate the effect of therapy condition on first day and last day depression score. All the assumptions of the repeated-measures analysis were confirmed. There was no main effect for therapy condition on depression scores. There was a significant effect of successive treatment days on depression levels as noted by $p < .001$. There was no interaction with depression time and therapy condition (See Table 4).

First Day Anxiety Score, Last Day Anxiety Score

Using all patients who were admitted with a diagnosis of anxiety and whose stay was at least two days (n = 49), a repeated-measures two-way ANOVA was performed to evaluate the effect of therapy condition on first day and last day anxiety score. All the assumptions of the repeated-measures analysis were confirmed. There was no main effect for therapy condition. There was a significant effect of successive treatment days on anxiety levels as noted by $p <$

.001. There was no interaction with anxiety time and therapy condition. (See Table 4 for descriptive statistics across days and conditions)

Table 4

Depression and Anxiety Levels from First Day and Last Day Treatment Across Therapy Types (Music Therapy; MT; Traditional Therapy)

	Music Therapy		**Traditional Therapy**	
Therapy Day	**Depression M (SD)**	**Anxiety M (SD)**	**Depression M (SD)**	**Anxiety M (SD)**
First Day	4.91 (3.26)	4.52 (3.27)	3.87 (3.42)	5.05 (3.71)
Last Day	2.81 (2.53)	3.81 (2.88)	2.08 (2.92)	2.73 (2.80)

Summary

The data analysis for depression and anxiety day 1 to day 4 did not show any significant interaction between therapy condition, treatment with MT versus no MT, and treatment time on depression and anxiety levels. However, there was significance (p=.03) for successive treatment days on depression time. There was no significance for successive treatment days on anxiety time. When evaluating the first day to last day depression and anxiety there was no main effect for therapy condition for either depression or anxiety. When looking at successive treatment days on depression and anxiety levels there was a significant effect for both with p<.001.

Chapter 5

Discussion

Adolescent anxiety and depression have detrimental effects on social interaction and relationships, psychological functioning, and academic performance. These impairments can continue to impact a young person's life into adulthood if not treated promptly (Porter et al., 2017). Current treatments for mental disorders, including depression and anxiety, include pharmacological and psychotherapeutic treatments. In the adolescent population, there are conflicting opinions on the use of antidepressants due to the risks of adverse effects, and a need for other effective treatments are needed (Porter et al., 2017).

The purpose of this DNP project was to determine the effectiveness of MT on anxiety and depression levels in adolescents. Statistical significance was not achieved as the DNP student speculated there would be. Various factors, such as a small sample size and limited time frame to complete the project, the number of patients that had a decrease in anxiety and depression levels did not statistically decrease during the treatment period.

The DNP project did show some areas of small to moderate effect throughout the various types of data analysis. First, it showed that there was a significant effect on successive treatment days on depression. There was a moderate effect for therapy condition (no MT group compared to MT group) on anxiety levels when evaluated from day 1 to day 4. The first day and last day anxiety and depression scores provided a larger sample size for data. When data was evaluated for first day and last day depression scores, there was some effect with successive treatment days on depression time; additionally, when the first day and last day anxiety scores were evaluated, it showed a good significance on successive treatment days on anxiety time.

Theoretical Framework Application

This DNP project correlates with Lewin's Force Field Theory (Figure 1). The framework is used to identify, analyze, and adjust when needed because of the driving forces in this situation. The process of unfreezing, moving, and refreezing are used to increase driving forces (Finkelman, 2022). The unfreezing process took place when the therapy staff were given education regarding adolescent anxiety and depression and the success of current treatments. The therapy staff were educated further on MT and more detailed steps on how to structure it within the therapy sessions. Implementation of the structured MT program occurred without any major issues or problems with therapy staff. This DNP project shows the potential for the structured MT program to be implemented in the treatment of all patients on the adolescent unit in the future.

Implications for Practice & Education

This DNP project led to implications for practice, and education. Implications for practice include continuing to use MT on the adolescent behavioral health unit. Although the project did not show significance overall in lowering anxiety and depression levels, there were some areas that showed that MT was beneficial. One main takeaway point was that MT was more effective in decreasing depression than anxiety.

The therapy staff who implemented the MT were asked to provide feedback after the quality improvement project was completed to get feedback from them. One question that was asked of them was, "How do you think the patients responded to the MT versus regular therapy that was used prior to the MT?". Comments from therapy staff included, "The patients love the MT. It is a great way to help them relax and engage in their treatment", "The patients loved listening to music and picking songs", "I think patients responded well because they were often

more enthusiastic and willing to participate because they like music so much", and "The patients do well with the music and tend to ask to listen to it".

Educational implications included the importance of consistently performing the MT daily and utilizing the daily assessment for anxiety and depression. The specific parts of the structured MT program allowed therapy staff to know how to facilitate the MT and ensure consistency for patients. Reviewing the daily assessment for anxiety and depression prior to the DNP project starting was key to ensuring they knew how to document the levels daily for each patient. The accuracy of this data collection was crucial to the outcomes.

Study Limitations

There were several limitations to this DNP project, including a small sample size, limited timeframe, and implementation of MT with therapy staff. There was only a total of 18 participants in the depression diagnosis group and 11 participants in the anxiety diagnosis group in the pre-intervention. For post intervention there were 13 participants in depression diagnosis group and 10 participants in the anxiety diagnosis group. Having six weeks of data collection prior to the implementation of the project and then 6 weeks for the project took additional time to complete versus just the actual implementation time which could have been longer. Using implementation of MT with therapy staff and not a music therapist could have impacted the delivery of the structured MT. One therapy staff commented that "I feel like because there were no "music therapists" here, the study possibly would be good to do with someone trained in MT."

Recommendations

A recommendation for the future would be to perform the DNP project with a larger sample size and over a longer period, such as three months or more. Performing a baseline

assessment before therapy started for both NMT and SMT would also be beneficial. This information, along with a before MT and after MT assessment of anxiety and depression, may also be able to provide more detailed information on the actual effectiveness of MT.

Recommendations from therapy staff, when asked for feedback, include, “Is there anything you think could be done differently with the structured MT program?” they noted many things including, “It would have been nice to have more pre made questions to help the kids reflect on the music they were listening to”, I think there could have been more of a variety in music”, “Using more contemporary music in the playlists”, and “Get patients input on songs for the playlist”. Feedback from therapy staff is valuable to improving this quality improvement project.

Conclusion

Adolescent anxiety and depression continue to increase in numbers. The need for non-pharmacological treatment is needed. MT proves to be one of the options for this type of treatment and has shown success in treating adolescent anxiety and depression in many studies. For this DNP project, MT did not prove to be any less effective than other therapy provided to patients. This quality improvement project was limited to many areas and supports the need for similar quality improvement projects in the future.

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Appendix A: West Chester University IRB Approval

Office of Research and Sponsored Programs I West Chester University I Ehinger Annex
west Chester, PA 19383 1 610-436-3557 | www.wcupa.edu

Dec 1, 2023 PM EST

To: Amy Haagen
Department: School of Nursing, Nursing

Re: Exempt - Initial - IRB-FY2024-70 Utilizing a structured music therapy program for adolescents with anxiety and depression

Dear Amy Haagen:

Thank you for your submitted application to the West Chester University Institutional Review Board. We have had the opportunity to review your application and have rendered the decision below for Utilizing a structured music therapy program for adolescents with anxiety and depression.

Decision: Exempt

Selected Category: Category 3.(i)(B). Research involving benign behavioral interventions in conjunction with the collection of information from an adult subject through verbal or written responses (including data entry) or audiovisual recording if the subject prospectively agrees to the intervention and information collection.
Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation.
Category 3.(ii). For the purpose of this provision, benign behavioral interventions are brief in duration, harmless, painless, not physically invasive, not likely to have a significant adverse lasting impact on the subjects, and the investigator has no reason to think the subjects will find the interventions offensive or embarrassing. Provided all such criteria are met, examples of such benign behavioral interventions would include having the subjects play an online game, having them solve puzzles under various noise conditions, or having them decide how to allocate a nominal amount of received cash between themselves and someone else.

If there are any questions, please don 't hesitate to reach out to irb@wcupa.edu

Sincerely,
West Chester University Institutional Review Board

IORG#:
IORG0004242
IRB#:
IRB00005030
FWA#:
FWA00014155

Appendix B: DNP Project Consent

Project Title: Utilizing a structured music therapy program for adolescents with anxiety and depression.

Investigator(s): Amy Haagen; Jacquelyn Owens

Project Description:

Help in this research project is voluntary and is being done by Amy Haagen as part of their Doctor of Nursing Practice (DNP) Project through West Chester University to:

Start a structured music therapy program on an inpatient adolescent behavioral health unit. This project will help give another way to treat adolescent anxiety and depression. Music therapy is a top treatment for anxiety and depression in findings.

Your help will take about one hour to join in four parts of the music therapy program. Part one will have music playing as the group starts and patients come to the therapy room. Part two will be listening to and reflecting on music that is played for patients. The patients will choose the song that they will listen to and reflect. Part three will be a drumming session with different songs and pool noodles used for drumming. In part four music is being played as the group ends and patients leave the group. The music will be fit for this age group. There is a small risk of an increase in anxiety and/or depression. Music therapy will likely decrease anxiety and depression. This project will help to give another way to treat adolescent anxiety and depression.

If you would like to take part in the project, you must agree and sign this consent which is needed by West Chester University.

You may ask Amy Haagen any questions to help you understand this study. If you don't want to be a part of this study, it won't change any services from Penn Highlands Healthcare, and you will not receive music therapy as part of your therapy. If you choose to be a part of this study, you have the right to change your mind and stop being a part of the study at any time.

1. **What is the purpose of this study?**
    - Start a structured music therapy program on an inpatient adolescent behavioral health unit. This project will help to give another way to treat adolescent anxiety and depression. Music therapy has been found to be a top treatment in findings.
2. **If you decide to be a part of this study, you will be asked to do the following:**
    - Part one will include music playing as the group starts and patients come to the room.
    - Part two will require listening and reflecting of music that is played for patients.
    - Part three will be a drumming session with various songs and pool noodles used for drumming.
    - Part four music is being played as the group ends and patients leave the group.
    - This study will take about 1 hour of your time daily Monday through Friday.
3. **Are there any experimental medical treatments?**
    - No

4. **Is there any risk to me?**
    - There may be a risk of an increase in anxiety and/or depression.
    - If you become upset and wish to speak with someone, you may speak with Amy Haagen.
    - If you experience trouble, you have the right to withdraw at any time.
5. **Is there any benefit to me?**
    - Benefits to you may include a decrease in anxiety and depression.
    - Other benefits may provide another method of treatment for adolescent anxiety and depression.
6. **How will you protect my privacy?**
    - The session will **not** be recorded.
    - Your records will be private. Only Amy Haagen, Jacquelyn Owens, and the IRB will have access to your name and responses.
    - Your name will **not** be used in any reports.
    - Records will be stored:
        - In a locked therapy office on the Child/Adolescent Unit
        - In Safeguarding Participants Identity, once the patient information is decoded there will be an Excel file containing the decoded information that will be stored on a password-protected computer.
    - Records will be destroyed Three Years After Study Completion
7. **Do I get paid to take part in this study?**
    - No
8. **Who do I contact in case of research related injury?**
    - For any questions with this study, contact:
        - **Primary Investigator:** Amy Haagen at 570-660-0622 or AH987630@wcupa.edu
        - **Secondary Investigator/Faculty Sponsor:** Jacquelyn Owens at 610-436-2314 or jowens@wcupa.edu
        - **West Chester University Institutional Review Board at 610-436-2835**
9. **What will you do with my Identifiable Information?**
    - Your information will not be used or distributed for future research studies.

For any questions about your rights in this research study, contact the ORSP at 610-436-3557.

I, _____(Parent or Legal Guardian), have read this form and I understand the statements in this form.

I know that if _____ (patient/minor you are signing for) is uncomfortable with this study, they can stop at any time. I know that it is not possible to know all possible risks in a study, and I think that reasonable safety measures have been taken to decrease any risk.

Signature of Parent or Legal Guardian: _____ Date: _____

Appendix C: Penn Highlands Letter of Cooperation

PENN HIGHLANDS DUBOIS
100 Hospital Avenue
PO Box 447
DuBois, PA 15801-0447
West Campus 814-371-2200
East Campus 814-375-4321

TO the Institutional Review Board at West Chester University,

This serves as a letter of cooperation from Penn Highlands Healthcare (PHH) in acknowledgement of the quality improvement project titled "Utilizing a structured music therapy program for adolescents with anxiety and depression" that will be performed by Amy Haagen, West Chester University (WCU) Doctor of Nursing practice student, with staff on the adolescent behavioral health unit at DuBois East Campus. The role of PHH in the quality improvement project will allow for sending of emails regarding information about the project with Jane Adair, nurse manager, Arianne Iorfido, director of unit, Sharon Guthridge, clinical analyst, and any other staff that are involved in the project.

PHH will provide space for the project, provide access to records, data, and patients for the purposes of the project. Amy Haagen will have access to data from PHH electronic health records system following completion of the project. PHH requests that the organization's name be removed in the findings/report. Amy Haagen will use the Expert Determination Method to De-Identify patient information. PHH will allow -Amy Haagen to share information internally at the organization level and with the WCU community.

Sincerely,

Arianne Iorfido, MA LPC
Director, Behavioral Health Services

Appendix D: Daily Rating Scale for Anxiety and Depression

Daily Rating Scale for Anxiety and Depression

1-10 Depression Scale	1-10 Anxiety Scale
8-10 despair, suicidal feelings	8-10 out-of-control behavior, hitting, rhyming voices
6-7 feeling really bad, at the edge	6-7 strong agitation, pacing
5 definite malaise, insomnia	5 moderate worry, physical agitation
3-4 depression slightly stronger	3-4 mild fear and worry
1-2 minorly depressed mood	1-2 slight fear and worry
0 absence of symptoms	0 absence of symptoms