

Using Physical Exercise to Prevent and Supplement Depression Treatment in Adolescents

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DNP 767: DNP Project 111

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Abstract

Exercise is considered a supplemental intervention for the treatment of depression among the adolescent population. Concerns are raised by the increasing socioeconomic burden of depression among adolescents in society. In the debate on the efficacy of exercise as a treatment strategy, issues are raised on the beneficial effects, intensity, and structure of the exercise. This DNP project seeks to determine if educating healthcare providers on the importance of physical exercise for adolescents diagnosed with depression will increase provider utilization of the education module.

The quality improvement project examines the impact of physical activities on depression management among adolescents. The problem of depression among adolescents is rampant. A study by Belvederi et al. (2019) revealed that the global rate of depression among children between the ages of 10 and 19 rose from 11.6% to 12.9%. Therefore, it is rational to find evidence-based methods to prevent and control depression among adolescents. The quality improvement project used questionnaires to collect data from project participants. Chart audits were used to measure provider compliance in distributing educational tools to patients. Also, the quality improvement project utilized educational handouts to improve participants' knowledge of physical exercises required in depression management. The primary intervention in the quality improvement project was providers educating patients on the importance and significance of physical exercise to manage adolescent depression. It involved the benefits of physical exercises

and practice tool guidelines to supplement treatment for adolescents with depression to meet the project's objectives. The data analysis showed that the educational session improved providers' knowledge of different types of evidence-based physical exercises essential in treating depression in addition to current treatment. In conclusion, the quality improvement project influenced providers and patients to embrace evidence-based physical activities in managing depression among adolescents. The quality improvement project also increased teamwork and interprofessional communication among providers and patients in managing depression among adolescents.

Keywords; depression, education seminar, and physical activities.

Depressive disorders can have a devastating effect on many individuals across the world as it is among the leading causes of heart disease, disability, and mental health of affected persons (Magson et al., 2021). As a form of mental disorder, patients with depression can show symptoms of apathy, a decline in satisfaction, and low mood levels that can also cause fatigue and inactivity for a continual time. Depression affects the physical health and individual functioning of individuals, as well as increasing the economic burden on patients and their families. The costs of treating and managing depression can be large and can economically burden low to middle-income families (Recine, 2021). Consequently, many patients suffering from depressive disorders lacks adequate treatment; nonetheless, when they receive care and treatment, there is a high likelihood that they will relapse after the first treatment for depression (Yue et al., 2020). After the first treatment of antidepressant, many patients experience worsening conditions that force them to seek pharmacological treatment. Depression is

characterized by mental health challenges and biological and behavioral features that are deleterious to wellbeing and physical health. Studies show that when depression cases arise, patients are likely to experience episode recurrences and amplification of disability and disease-related mortality (Brooks et al., 2020; Geiger & Davis, 2019). Unlike persons without major depression, those with the condition have shorter lifespans (Brooks et al., 2020).

The correlation between mental disorders such as depression and lack of regular physical exercise is studied widely (Belvederi et al., 2019). Physical exercises reduce stress, enhance memory, help with sleep, and elevate mood (Geiger & Davis, 2019). Moreover, it promotes general wellbeing. Moderate physical activity, according to Belvederi et al. (2019), may have a significant impact on depression. When dealing with depression, improving energy and attitude can be obtained through physical activity (Golberstein et al., 2020). The goal of this DNP project is to determine if educating healthcare providers on the importance of physical exercise for adolescents diagnosed with depression will increase provider utilization.

Background

Before the coronavirus pandemic, clinically significant rates of depression among adolescents were low compared to during the pandemic. A study by Belvederi et al. (2019) revealed that the global rate of depression among children between the ages of 10 and 19 rose from 11.6% to 12.9%. The declaration of the pandemic as a global health emergency resulted in increased disruptions of physical meetings and social interactions of people due to health protocols. The closure of schools, quarantines, and social distancing rules resulted in isolation, family stress, reduced peer interactions, and anxiety about when a family member dies or is infected. The coronavirus pandemic exacerbated the prevalence of depression among teens aged between 10 years and 19 years (Racine et al., 2021). The World Health Organization (2021) report reveals that depression occurs lower among adolescents aged 10-14 years than adolescents aged 15-19-years-old. Many teens experience anxiety and depressive symptoms that include unexpected and rapid changes in mood that affects their performance, interpersonal relations, and communication with siblings (Magson et al., 2021). A report by Racine et al. (2021) showed that disruptions of daily activities, uncertainty, and concerns about the wellbeing and health of relatives and family are likely to be the cause of depression among adolescents. According to the

World Health Organization (2021), adolescence is a formative and unique time for children aged between the ages of 10 and 19. Adolescents can be exposed to abuse, poverty, and violence that may increase the risk of depression.

Depression is a serious public health concern with a high prevalence among adolescents. Severe forms of depression can increase suicidal thoughts and cases of suicide among adolescents (Recine, 2021). Though depression is a serious disorder, there is less attention to the negative emotions and depressive signs among adolescents leading to untimely interventions. Before the coronavirus pandemic, many teens experience depression owing to social and academic pressures, poverty, abuse, and domestic violence; however, the pandemic changed their lives, exacerbating the depressive cases. Additionally, impacts of depression among the LGBT adolescent population during Covid-19 are possibly higher; before the pandemic, the LGBTQ population faced a disproportionate burden of depression as they were often victimized, discriminated against, and abused and the Covid-19 prevention measures, such as remote learning and the shutdown of schools, exacerbated these mental health concerns (Ormiston & Williams, 2022). To promote the health of adolescents, enhancing their socio-emotional learning, access to mental healthcare, protecting them from adversity, and educating them on complementary care for depression are necessary. Geiger & Davis (2019) showed that depression is a common health problem among teenagers, particularly girls. Teenage girls had experienced at least one major depressive episode over the past year in 2017 (Geiger & Davis, 2019). Girls experience high depressive symptoms, but they are also more willing to seek treatment and help compared to boys (Magson et al., 2021).

Problem Identification

According to Kremer et al. (2014), even though depression affects teenagers more than any other age group, research on adolescent psychiatric illnesses has been largely ignored. Students who were more engaged in physical education programs and sports teams both at school and outside of school were less likely to suffer from depression (Belvederi et al., 2019). Leisure activities and physical exercise may help with depressive symptoms. Nearly 20% of young individuals exhibited signs of depression that may persist into adulthood (Brooks et al., 2020). In both prospective and cross-sectional studies, a lack of physical activity has been linked to an increase in symptoms (Brooks et al., 2020). Participating in dynamic physical activities and team sports for three years reduced symptoms of depression (Magson et al., 2021). The use of activities to alleviate depression is becoming more popular (Stanton & Raeburn, 2014). In this article, the authors analyzed exercise methods, duration, frequency, intervention length, and the administration of exercise regularly to determine how effective the workouts were. Depression symptoms were reduced by all workouts, especially outdoor walking, aerobics, and stationary cycling. As a result, nursing care for adolescents with depression may be effective and safe.

Exercises

As aforementioned, though many adolescents show signs of depression, the symptoms go unnoticed even when prevalence rates of the condition are high. Identifying signs of depression

among adolescents is integral in addressing the mental health of children expressing depressive symptoms (Magson et al., 2021). Treating depressive symptoms among adolescents should focus on options that are non-pharmaceutical since antidepressant medications can have side effects such as suicidal thoughts, an increase in weight, and cases of relapse (Brush & Burani, 2021). Studies show that exercises are considered a supplemental intervention for depression that helps in improving cognitive processes (Brooks et al., 2020; Geiger & Davis, 2019; Golberstein, Wen & Miller, 2020). Exercises are considered an effective intervention since it improves cardiovascular fitness, which helps improve cognitive function, critical in reducing signs of depression (Yue et al., 2020). As an alternative treatment for depression, the use of exercise is considered cost-effective, reduces stigma, and is easy to implement in the community. The intervention is an effective intervention for depression among adolescents as it improves their physical wellbeing and mental health (Magson et al., 2021). Existing literature affirms that exercises help in relieving depressive symptoms and depression among adults, which can be implemented in adolescents (Recine, 2021). The perceived changes after engaging in exercise as an intervention for addressing depression include better sleep patterns, improved motivation, higher energy levels, and the ability to engage with family and peers (Golberstein, Wen & Miller, 2020). According to Belvederi et al. (2019), the formal acknowledgment of the beneficial impacts of exercise in the medical sciences has existed a lengthy process. Nevertheless, exercise helps as a vital lifestyle behavior that can relieve the negative impact of chronic diseases. Depression, anxiety, and ADHD may all be alleviated by regular exercise (Geiger & Davis, 2019).

Essentially, exercises can help patients with depression by changing their health and lifestyle behaviors such as reducing drinking, ceasing smoking, and adhering to treatments.

Physical exercises provide immense benefits to patients with depression as it enhances autonomic visceral control, cardiorespiratory fitness, an adaptation of homeostatic systems, and dampening of inflammatory processes (Brooks et al., 2020). Exercise is more than simply increasing your aerobic capacity and bulking up your biceps and pecs. According to Belvederi et al. (2019), regular exercise may enhance your physical wellbeing, health, and appearance. However, most adolescents aren't motivated to keep active. Exercising daily helps some people feel better. They have more stamina throughout the day, sleep better at night and have better recall of events and a more optimistic outlook on life in general (Recine, 2021). Exercises can also help in improving the mood of persons with depression which could increase their participation in activities and improve self-efficacy. Exercises are associated with a positive attitude and social interaction among persons with depression (Recine, 2021). The exercise program prescribed will vary based on individual preferences, intensity, and reduced signs of depression (Magson et al., 2021).

Significance of the Study

The research on the impact of exercise in reducing depression is necessary since it will provide information and insights on the management of depression. Treatments that include the use of medication may harm the health of the patient as it can cause relapse of depression, agitation, and exhaustion (Netz,2017); thus, the intervention will help in providing effective, novel, and cost-effective non-pharmacological treatment options that reduce signs of depression while addressing the physical health of a patient. The current approaches adopted by physicians in addressing depression include the use of medication and psychotherapy; however, they are an ineffective first line of defense against depression (Brush & Burani, 2021). Consequently, exercise is an alternative and supplemental treatment regime for depression. Also, the use of

exercise as an adjunct to traditional treatments is gaining traction due to multiple studies showing that it may help alleviate the symptoms of depression. The DNP Project will provide insights for provider adherence. In essence, the topic is necessary as it helps to assess the benefits of exercises as a countermeasure against depression. As well, the project will address concerns of skeptics on the adoption of exercise as a treatment option for persons with depression. The project was selected to provide insights and evidence to support the adoption of exercise as a treatment regimen for depression. The DNP Project will add knowledge and insights on the effectiveness of exercise as an intervention for depression among adolescents using chart audit. The topic will help in establishing the effects of exercise on the management of depression by highlighting its effectiveness and efficacy to provide the potential for clinical application.

Clinical Question

As aforementioned, the existing interventions to treat depression among adolescents such as medication and therapy have resulted in relapses, suicidal cases, and continuance of depression cases (Yue et al., 2020). The increased cases of depression among adolescents are clinically significant; hence, the need to develop evidence-based interventions that will address depressive cases. The PICOT: -

P - Providers caring for adolescent patients diagnosed with depression.

I - Implementation of an education module that focuses on exercise to support and encourage providers to utilize.

C - Compared to using other treatment modalities

O – Improved provider compliance on physical exercise education with adolescents diagnosed with depression

T – In a 4-week timeframe

Search Methods

Currently, depressive disorders are among the leading causes of heart disease, disability, and mental health of affected persons (Magson et al., 2021). Medical practitioners have resolved to use physical exercises to prevent and supplement depression treatment among adolescents. In order to determine the effectiveness of physical exercise in depression management, researchers utilize primary or secondary search methods to collect quality data. This project applied the secondary research method to search and obtain adequate information. According to Morris and Largan (2019), the secondary research method involves collecting data through organizational reports, online resources, libraries, and archives.

For this project, information was gathered through online research databases, including Google Books, ProQuest, Scopus, PubMed, Education Resources Information Center, and ScienceDirect. Specific keywords and phrases were utilized to obtain appropriate and relevant articles for the study. The following keywords and phrases included "physical exercises," "depression among adolescents," "non-medical treatments for depression," "the importance of physical exercise in depression management," and "managing depression using physical exercise." The search terms, keywords, and phrases enabled the project lead to identify at least forty peer-reviewed articles and e-books for literature review. Hence, the study only used 17 out of the 40 articles identified during the secondary research.

Inclusion Criteria

The project only included information from peer-reviewed journals and academic resources written in the English language and published within the last five years. It included only articles with information about physical exercises relating to adolescents and young

children. The project included only research articles relating to adolescents with depression or history of depression.

Exclusion Criteria

The project excluded articles relating to adults or persons above 18 years old. It excluded articles that were published before 2017, which had adequate information about depression management among adolescents. The project excluded peer-reviewed articles that lacked adolescents with depression or history of depression.

The inclusion and exclusion criteria ensured the research had information relating to the study questions.

Review Synthesis

A comprehensive review approach was adopted to obtain quality information for the study. The peer-reviewed articles included six systematic reviews, four case studies, two cross-sectional, two experimental studies, and three clinical trial studies. The review focused on themes regarding the background of depression among adolescents, risk factors and causes of depression among adolescents, evidence-based exercises for addressing depression, and the benefits of physical exercises for managing depression among adolescents. The background information revealed that depression affects approximately 12.9% of adolescents (Belvederi et al., 2019). A cross-sectional study indicated that the lack of physical exercise optimized the problem of depression among adolescents (Belvederi et al., 2019). Next, the information on evidence-based exercise revealed physical exercise and aerobics improve the cognitive processes of depressed adolescents minimizing the adverse consequences of the mental problem (Belvederi et al., 2019; Eime et al., 2013)).

The reviewed studies confirmed physical exercise as the best-practice standard for managing depression among adolescents and do not have side effects like antidepressant medications (Belvederi et al., 2019; Magson et al., 2021; Stanton & Raeburn, 2014). Based on this information, the gap in quality management of depression exists because antidepressants increase the risks of relapse, suicidal thoughts, and increased weight among adolescents. The review indicates that physical exercise is a safer management strategy than medication, implying its appropriateness in addressing the gap in quality management of depression among

adolescents. Therefore, the selected themes are essential because they highlight the problem, suggest evidence-based solutions, and justify the importance of resolving the issue.

Literature Theme Development

Causes and Risks of Depression

Child abuse, poverty, and violence increase depression risks among adolescents (World Health Organization, 2021). In 2020, the COVID-19 pandemic increased depression rates among adolescents due to family isolation, the death of loved ones, and the closure of schools (Ormiston & Williams, 2022). Global health pandemics increase poverty rates, and violence enhances depression risks among adolescents, resulting in adverse and long-term symptoms.

Disadvantages of Pharmacological Treatment.

Although depression is a major issue for the adolescent population, there are issues concerning the pharmacological treatment of depression. Pharmacological treatment, especially antidepressants, have adverse side effects, including increased risks of suicidal thoughts, weight, and relapse (Brooks et al., 2022). In addition, antidepressants are costly, challenging to prescribe in some communities, and increase the risk of stigma among adolescents (Brooks et al., 2022). The disadvantages of pharmacological methods necessitate the application of alternative treatments, such as physical exercises, in managing and treating depression among adolescents. As a result, the quality gap exists in depression management because pharmaceutical therapies have side effects and may not be appropriate for every adolescent.

National Guidelines

The United States has national guidelines relevant to the identified quality gap. The federal guidelines advocate for an evidence-based continuum of care for persons with mental health complications, including anxiety, depression, and stress (American Psychological

Association, 2020). The guideline expects healthcare workers to apply evidence-based treatment methods with minimal side effects and maximum benefits to increase patient safety and outcomes. Even though antidepressants are evidence-based treatments for depression in adolescents, they are considered suboptimal because of their adverse side effects, negatively affecting patient safety and care. Antidepressants also do not entirely address the negative signs and symptoms of depression among adolescents. For example, some adolescents that undergo antidepressant treatments experience the signs and symptoms of depression in their adult life (American Psychological Association, 2020).

Research Evidence About Adolescent Depression and Exercises

Research suggests complementing antidepressants with physical exercise is an evidence-based treatment for managing depression (Belvederi et al., 2019). Physical activities enhance cognitive functions and reduce signs and symptoms of depression among adolescents (Belvederi et al., 2019). For example, the combination of physical exercises with antidepressants eliminates the signs and symptoms of depression, significantly reducing the risks of reappearing in adulthood (Belvederi et al., 2019; Kremer et al., 2014). Brooks et al. (2020) add exercising can influence depressed individuals to change to healthy lifestyle behaviors by reducing drinking, ceasing smoking, and adhering to treatments. Physical exercises enhance autonomic visceral control, cardiorespiratory fitness, an adaptation of homeostatic systems, and dampening of inflammatory processes among depressed patients (Brooks et al., 2020).

Additionally, physical exercises enhance the physical, emotional, and mental well-being of depressed adolescents. According to Magson et al. (2021), depressed adolescents who engage in physical activities overcome the risks and symptoms of severe chronic or cardiovascular illnesses related to depression. For example, physically active adolescents reduce their heart or

kidney disease risks. Magson et al. (2021) add physical activities reduce the dangers of other mental complications linked to depression, including panic disorder, social phobia, and anxiety disorders. For instance, physically active adolescents have improved energy levels, excellent relationships with their family members and peers, exceptional sleeping patterns, and enhanced motivation to excel (Magson et al., 2021).

School Closure and Depression Prevalence

In 2020, all American schools closed their physical locations to combat the COVID-19 pandemic. The closure of schools resulted in an increased number of mental health complications among adolescents, including stress, anxiety, and depression. According to Viner et al. (2022), a systematic review of 36 studies from 11 countries revealed that 18 to 60% of 79,781 children involved in the research had increased risks of depression because of school closure. Also, Lee (2020) states that school closure limited adolescents' access to essential resources, such as guidance and counseling, peer support groups, and face-to-face services, needed to reduce depression risks. Lee (2022) adds that the lack of resources adversely affected 83% of 2111 adolescents in the United Kingdom because their signs and symptoms of depression worsened

Review of Study Methods

The project involved numerous studies with different methods for data collection. The common techniques applied in the selected articles included interviews, surveys, and systematic reviews. Eime et al. (2013) conducted a systematic review of 14 online articles to determine the benefits of physical exercises in addressing mental health complications. The studies affirmed that physical activities, which entail voluntary body movements like walking or running, positively impact adolescents' mental health. Also, Stanton and Reaburn (2014) utilized a

systematic review method in collecting data for determining the impact of exercises on depression treatment. The researchers reviewed five articles with randomized controlled trials (RCTs). The study determined that supervised aerobics, which are aerobic exercise programs like swimming, cycling, and rowing, are essential in managing and treating depression among adolescents.

Kremer et al. (2014) utilized questionnaires to determine the effects of physical activities on managing depression among children and young adolescents. The researchers involved around 8,256 children in the interviews and questionnaires. The method enabled the researchers to collect adequate information to conclude that higher or vigorous physical activities, exercises that require high amounts of oxygen consumption to complete like swimming laps or hiking, are associated with reduced depressive symptoms among children and young adolescents. Magson et al. (2021) used interviews and questionnaires to determine risk and protective factors for prospective changes in adolescent mental health. The researchers utilized online questionnaires and interviews to collect information about depressive symptoms and risk factors among 248 adolescents during the COVID-19. The combination of online questionnaires and interviews enabled the researchers to acquire adequate information to understand risks and protective factors for prospective changes in adolescent mental health during COVID-19.

Finally, Geiger and Davis (2019) used surveys to collect data and determine the prevalence of depression among American teenagers. According to the report, a survey among Americans between 13 and 17 years revealed that seven in ten adolescents view depression and anxiety as major problems (Geiger and Davis, 2019). The survey showed that one in five teenage girls experience at least one major depressive disorder every year. Hence, Geiger and Davis (2019) relied on the survey method to highlight depression as a major health concern among

American teens. Also, Lee (2020) applied surveys to collect information to understand the mental effects of school closure during the COVID-19 pandemic. The study survey included 2111 participants with a history of mental health. Lee (2020) revealed that the closure of schools increased the mental health risks among adolescents because they lacked adequate resources, such as mental health support, peer support groups, and face-to-face services. Therefore, school closure during the COVID-19 pandemic caused increased cases of depression among adolescents.

Aims of the Project

Here are the specific aims of the DNP project:

1. Assess participant knowledge of utilizing exercise to treat adolescent patients with depression with a pre and post-test asking questions about the importance of exercises for treating depressed adolescents.
2. To educate all healthcare providers about different types of evidence-based physical exercises essential in treating depression in addition to current treatment, effectively in adolescents within four weeks.
3. Within a 4-week time frame, 50% of providers will educate patients on the evidence-based exercises taught in the education seminar, as evidenced by the chart review.

Project Objectives

In 4 weeks, the DNP project host site will:

1. To improve compliance with the national standards for care and health outcomes among adolescents with depression pertaining to treatment of evidence-based non-pharmacological methods within four weeks.
2. Create an educational tool of appropriate exercises for providers to educate adolescents diagnosed with depression.
3. Ensure provider compliance by educating adolescents diagnosed with depression on regular exercise.

Formal and Informal Theories

Crosby (2020) states Kurt Lewin developed Lewin's change model in the early 1940s. Kurt Lewin developed Lewin's change model to understand and highlight how people react when experiencing changes in their lives. Lewin's change model has three essential phases: unfreezing, changing, and refreezing. Ellis and Abbott (2018) indicate that the unfreezing phase of Lewin's change model involves determining what needs to change, creating awareness of identified issues, and communicating visions for proposed changes. In this phase, change managers carefully examine old behaviors, processes, ways of thinking, and organizational structures to show how essential a change is to improve productivity, efficiency, and outcomes (Ellis & Abbot, 2018). Also, Ellis and Abbott (2018) note that change managers must remain open to stakeholders' concerns about proposed changes and resolve them.

Ellis and Abbott (2018) note that the changing phase is the stage of the actual transition. In this stage, change managers influence stakeholders, including employees and shareholders, to accept new ways of accomplishing organizational roles and objectives. Change managers involve stakeholders in carefully planning and executing innovative ideas or processes in workplaces. Organizations encourage stakeholders to brainstorm and generate ideas to improve or refine proposed changes. Nonetheless, the change phase is characterized by fear among stakeholders or change managers who may be uncertain of the implemented changes' potential consequences

. Ultimately, Ellis and Abbott (2018) add that refreezing is the transition phase to a more stable state of equilibrium during change management processes. In the refreezing step, change managers and companies encourage employees to internalize and accept implemented changes or new ways of accomplishing professional roles and responsibilities in workplaces. Change managers reinforce or strengthen implemented changes by rewarding stakeholders for embracing

or adhering to them. Some change managers or companies develop structures and policies to reinforce implemented changes. For example, some create a code of conduct to ensure employees implement workplace changes. Hence, change managers should apply all three phases of Lewin's model to manage change effectively.

Major Tenets of Theory Application to the DNP Project

Notably, Kurt Lewin's model is an essential change management theory in nursing that supports and guides medical practitioners, especially nurses, in identifying areas of strengths and resistance before implementing evidence-based changes in clinical settings. In the DNP project, it is vital to apply the three-stage model to identify and comprehend the factors and forces that will positively and negatively influence the introduction of non-pharmacological methods in managing adolescent depression. Therefore, the theory's application will focus on three major tenets: unfreezing, changing, and refreezing.

Unfreezing Phase

Applying the tenets of Lewin's change model to the DNP project is appropriate. In the unfreezing phase, it is essential to highlight pharmacological treatment's disadvantages in managing depression by having people practice it in a different way. In this phase, nurses will be informed about the benefits of complementing physical exercises with pharmacological methods in managing depression among adolescents. Providers will be given an opportunity to learn about the national guidelines and their importance in depression management among adolescents. They will also be informed about the adverse effects of pharmacological methods, such as high risks of weight gain, suicidal thoughts, and relapse, to show them how essential a change is to improve patient outcomes. The awareness will prepare nurses adequately to adhere to the provisions of the DNP project in improving depression management among adolescents. This phase will also

test the Provider's knowledge and understanding of evidence-based physical exercises and national guidelines in managing depression among adolescents by issuing a pre and post test. Stakeholders, especially nurses, will be asked about their concerns relating to non-pharmacological methods. If any concern is noted, it will be addressed before implementing the proposed changes in the clinical setting.

Changing Phase

Ellis and Abbott (2018) state that the changing phase of Lewin's change model involves implementing the actual change process. In this step, change managers conduct careful planning, communicate effectively, and encourage individuals to participate in the change process (Ellis and Abbott, 2018). In the DNP project, it is important to plan the change management process carefully by selecting nurses to engage in the education seminar and participate in the implementation of the DNP project. Specific information regarding the location and date of the educational activity will be communicated to selected nurses at least two weeks earlier. The implementation of the DNP project will be done within four weeks. In the first week, nurses will be educated on the evidence-based physical activities effective in depression treatment among adolescents. After acquiring adequate knowledge and skills, nurses will be expected to educate their adolescent patients about specific evidence-based physical activities and their importance in depression management through the second and the fourth week. For example, nurses will educate adolescent patients about the importance of bicycle riding, aerobic exercises, walking, swimming, and dancing in managing depression. Thus, nurses and patients will actively participate in the four-week educational program.

Refreezing

Finally, Ellis and Abbott (2018) explain that the refreezing phase entails the acts of reinforcing, stabilizing, and solidifying new states after change management. In this phase, nurses should be encouraged to complement pharmacological with non-pharmacological methods, especially physical exercises, to manage and treat depression. For example, to encourage ongoing implementation, nurses could be praised for using physical exercises to manage depression among adolescents. Also, positive reinforcement strategies like reminders can be added in the chart to encourage nurses to apply evidence-based physical exercises in managing depression among adolescents. Ellis and Abbott (2018) add that change managers establish feedback systems. Nurses and patients will be required to provide feedback regarding the educational program and its impact on improving depression management. Therefore, implementing the three tenets of Lewin's change management will facilitate the realization of the DNP project's recommendations and goals.

Project Plan Description

Project Setting

The quality improvement project will be completed in an underserved community Clinic in South Central Los Angeles, California. The community clinic is a busy healthcare facility that operates from Monday to Saturday between 9 am and 6 pm. It offers specialized services in family practice, mental health, and an eye clinic. The clinic serves over 1,000 patients a week. The quality improvement project will take place in the mental health clinic and focus on managing depression among adolescents. The community clinic has a diverse staff, including nurses, managers, assistant managers, clinical managers, billing experts, and information technologists. The project participants will include at least 25 nurses, particularly mental health nurses, Registered Nurses (RNs), and Doctor of Nursing Practice (DNP) nurses. The community clinic accepts cash payments as well as commercial insurance and Medicare.

Population of Interest

The project involves an education seminar enlightening healthcare worker, specifically nurses and mental health specialists, about different evidence-based physical activities and their benefits in depression management among adolescents. Healthcare practitioners will be the direct population of interest in the quality improvement project. They will include mental health nurses, Registered Nurses (RNs), psychiatrists, and DNPs. According to Akhtar et al. (2020), coordinated mental health care requires mental health nurses to collaborate with other healthcare practitioners, especially RNs, interns, and physicians, in planning and providing evidence-based mental and nursing care for patients. Mental health nurses, Registered Nurses, and DNPs were chosen to be directly involved in the project due to their active roles in depression management in adolescents. For example, mental health practitioners collaborate with nurses in administering

medications to patients with mental health complications. The indirect population for the quality improvement project will include adolescents aged between 12 and 17 years with depression or increased risks or history of depression from different backgrounds in Los Angeles, California. Thus, the indirect population will learn and acquire knowledge and skills from their healthcare professionals about physical exercises that may reduce their risks of depression.

The quality improvement project will apply exclusion and inclusion criteria to select applicable direct and indirect participants. The quality project will include mental health nurses, RNs, and DNPs who work directly with adolescents. It will only include nurses with excellent mastery of English. The quality improvement project will include direct participants from Los Angeles, California. It will consist of mental health nurses, RNs, psychiatrists, and DNPs. It will exclude mental health nurses, RNs, and DNPs who are not from Los Angeles, California. The quality improvement project will exclude mental health nurses, RNs, psychiatrists, and DNPs without good mastery of English.

Stakeholders

The quality improvement will require diverse stakeholders, including the project lead, assistant clinical directors, nurse educators, psychiatrists, and mental health nurses, to succeed. Burns and Firm (2015) indicate that project leaders lead stakeholders and ensure projects are accomplished. In the quality improvement project, the project leader will design the educational seminar's plan and activities to empower direct participants with adequate knowledge and skills required in depression management. The project leader will educate direct participants about evidence-based physical activities and their benefits in managing depression among adolescents. The project leader will track learning and evaluate the knowledge and skills of direct participants before and after the implementation of the quality improvement project. The project leader will

act as a change agent by designing, planning, and implementing the change management process to integrate physical activities into the community clinic's depression treatment plan.

According to Burns and Fim (2015), psychiatrists provide care and psychological support to patients and their families, transcribe physicians' orders, administer medications, and monitor progress. DNP's, Nurse Educators, and Mental Health Nurse Practitioners will provide care and psychological support and monitor depressed adolescents' progress in the quality improvement project. They will diagnose and administer treatment to depressed patients with the guidance of physicians. Burns and Fim (2015) highlight that nurse educators educate nurses and students on optimal task performance, track learning in clinical settings, test and evaluate learning processes, function as change agents and leaders, and participate in curriculum design. The nurse educator will collaborate with the project leader to design the educational seminar's activities to benefit direct stakeholders.

Equally important, Burns and Fim (2015) add that mental health nurses care for patients, prepare and maintain health records, administer medication, monitor progress, and organize group therapy sessions. In the quality improvement project, mental health nurses will undergo training on evidence-based physical activities for managing and treating depression. The education will enable mental health nurses to apply evidence-based physical exercises in improving the care and treatment of depressed adolescents. Mental health nurses will organize group sessions and educate adolescents about effective physical activities and their application in depression prevention and management. In the quality improvement project, providers will help plan, coordinate, and implement the education seminar in the community clinic. The providers will help identify and recruit direct and indirect participants for the project. Hence, their active role will contribute to the project's success.

Burns and Firm (2015) indicate that assistant clinical directors manage organizations' clinical departments, oversee the day-to-day administration of specific tasks, prepare department budgets, maintain medical records, and coordinate the delivery of patient care services. In the quality improvement project, the assistant clinical director will prepare a budget to ensure the success of the educational seminar. The assistant clinical directors will oversee the day-to-day activities of the educational seminar to ensure it achieves its goals and objectives. They will work with the project lead to develop policies and regulations to guide the actions and behaviors of stakeholders' during the educational seminar.

Ultimately, the assistant administrator of the community clinic permitted the quality improvement project to be completed in the Community Clinic. The project does not require an affiliation agreement, as demonstrated in the letter attached in Appendix 1.

Interventions

In the DNP quality improvement project, an education seminar is the main intervention required to accomplish the established aims and objectives. According to Koly et al. (2021), education and training intervention is one of the main methods clinics apply to reduce gaps in mental health treatment to promote universal health coverage. The intervention will be an evidence-based education seminar on the benefits of physical exercises and practice tool guidelines to supplement treatment for adolescents with depression to meet the first project objective. To accomplish the second project objective, the project lead will ensure that all necessary healthcare providers attend the education seminar and learn about different evidence-based physical exercises essential to treating depression. Participants will be given a pamphlet of exercises to provide to their patients. Finally, the project lead will review the chart audit input to determine the percentage of providers sharing information about the benefits of physical activities in depression management with patients to meet the project's third objective.

Koly et al. (2021) indicate that clinics select multidisciplinary teams of specialists and non-specialists to provide comprehensive education to primary healthcare workers. The interdisciplinary team involved in the DNP project will be psychiatrists, providers, nurse directors, clinical directors, and the project lead. The team will collaborate to review the educational handout to assist primary care healthcare workers in applying physical activities in managing depression among adolescents. Individually, the psychiatrists will educate nurses on how to administer physical activities to patients and record their reactions to the treatment method. They will guide nurses on how to help depressed patients cope with new treatment methods. The nurse director will ensure providers in the educational seminar attend the training session and comply with policies relating to physical exercise treatments for depressed

adolescents. The clinical director will ensure appropriate medical providers attend the training sessions to acquire advanced knowledge and skills for adolescent depression management. The project lead will establish goals for practitioners attending the education seminar. The project lead will present the budget to the clinic's leadership for approval. After approval, the clinical director will work with the team to implement the project budget. The project lead will also create and execute the team schedule to actualize the quality improvement project.

Equally important, the main content of the educational seminar will include a detailed description of physical activities and exercises, the impact of physical practices on depression management, and the recommended physical exercise programs and time. The intervention will include information on encouraging patients to start and remain motivated during physical exercise programs. They will also inform their patients under the treatment programs when they must consult physicians. Koly et al. (2021) note that success-oriented clinics apply face-to-face methods to deliver educational and training interventions to primary healthcare workers. In the DNP project, the DNP lead will utilize a face-to-face strategy to educate individuals involved in the education seminar. The DNP lead will apply interactive methods, such as question and answer sessions, role play, and case discussions, to empower participants. Therefore, the face-to-face and interactive techniques will ensure participants remain active during the educational seminars. The project lead will assess the performance of primary healthcare workers involved in the educational seminar and provide constructive feedback.

The DNP project will need physical resources, including learning areas and materials for participants. The project will need financial resources to purchase additional materials like participants' refreshments. Provider participation in the project will be voluntary.

Even though the training program is comprehensive, it will be completed in a 4-week timeframe. The training program will follow the PDSA model to accomplish numerous activities within the 4-week timeframe. Before implementation, the project lead will recruit appropriate stakeholders for the quality improvement project, create awareness of the quality improvement aims, reveal the problem of depression among adolescents, and identify the causes and propose alternatives to address the issue. In Week #1, the project lead will administer pretest questionnaires to the participants, provide an interactive educational seminar, give out handouts with information about physical activities, and offer post-test questions. The pre and post-tests will assess improvement in provider knowledge.

In Week #2 - 4, Providers will educate patients on physical exercise utilizing the tools presented at the educational seminar. The project lead will accomplish the do phase of the PDSA model. Specifically, the project lead will monitor and provide support to participants during the implementation of the project.

In Weeks #3- 5, the project lead will implement the study phase of the PDSA approach. In this step, the project lead will gather information and feedback about the implemented action plan, provide constructive feedback to stakeholders, and identify the unintended effects of the action plan. The project lead will utilize the weekly chart audit placed in the chart to determine participant compliance. (Appendix D).

In week five, the project lead will actualize the act phase of the PDSA approach. The project lead will complete the final week of chart audits, reflect on the plan and its outcomes, celebrate improvements and lessons with the stakeholders, and address any weaknesses of the intervention.

Tools

Questionnaire

In the DNP project, the primary tool will be a questionnaire (APPENDIX B). The questionnaire includes general and specific questions to assess the participants' knowledge of physical exercise in depression management among adolescents. The project lead will work with the multidisciplinary team to review and validate the questionnaire before utilizing it in the project. The project lead will seek expert consultation from Touro in validating the developed questionnaire required for the quality improvement project.

Education Handout

The multidisciplinary team will utilize an educational handout in the project. The project leader developed an educational booklet with ideal content to improve participants' knowledge of physical exercises required in depression management. The education handout has adequate information on the description of physical activities and exercises, the impact of physical exercises on depression management, and the recommended physical exercise programs for depressed adolescents. The project leader intends to seek expert consultation in validating the developed educational handout before using it in the quality improvement project. The project leader will work with the multidisciplinary team to review and validate the content of the educational booklet. If some content is missing, the team will collaborate to add more information necessary to improve participants' knowledge and skills of depression management among adolescents. Therefore, the educational handout will ensure the multidisciplinary team will focus on specific ideas and content required to benefit the project's participants.

Chart Audit

In the quality improvement project, the chart audit will measure provider compliance in distributing educational tools to patients. According to Yoder-Wise (2018), clinicians use chart audits to check their performances and identify areas that need improvement. The project lead will expect providers to distribute educational tools about physical activities and their importance in depression management to patients in the second through the fourth week of the quality improvement project implementation. In assessing the compliance rates among providers, the project lead will utilize a chart audit with different indicators, including recommended physical activities and the educational booklet received. The project lead will review the chart audits in the final week of the quality project implementation to determine the providers' compliance rate. The outcome of the chart audit will give the project lead adequate information needed to determine the success of the project's objectives.

Educational Pamphlet

In the quality improvement project, the DNP lead will develop and distribute an educational pamphlet to providers, which they will use to educate patients about evidence-based physical activities required in depression treatment. The education pamphlet will contain comprehensive information about different physical activities, such as walking and jogging. The education pamphlet will have recommended time for different physical activities to improve depression treatment among adolescents. Therefore, the education pamphlet will improve patients' knowledge of physical exercises, increasing their participation in depression treatment.

Data Collection Plan

Questionnaire Surveys

In the quality improvement project, the DNP lead will use questionnaires to collect data. Currently, numerous online platforms allow researchers to create questionnaires freely, including the Zoho survey, SurveyMonkey, Google Forms, SurveyPlanet, and SoGo Survey. The DNP lead will use Google forms, a free online platform, to develop questionnaires. As a result, the DNP lead will save time and cost in making questionnaire surveys for the quality improvement project. According to Pope and Mays (2020), researchers use questionnaire surveys in health sciences to collect qualitative and quantitative information. The DNP will utilize the questionnaire surveys to collect the appropriate qualitative and quantitative required in the quality improvement project. Pope and Mays (2020) indicate that questionnaire surveys involve closed and open-ended questions. The DNP lead will utilize questionnaire surveys with open- and closed-ended questions to restrict respondents to fixed responses and obtain detailed explanations for some questions. Also, Pope and Mays (2020) state that the advantages of questionnaire surveys include cost effectiveness, high data accuracy, and respondent anonymity. The DNP lead will create a free online questionnaire to avoid labor and printing costs. On the contrary, Pope and Mays (2020) note that some respondents leave questions unanswered in questionnaires. Hence, the DNP lead may not receive all responses to open and closed-ended questions in the questionnaire, affecting the quality of data collected for analysis.

The DNP lead will instruct participants to electronically download the pre and post questionnaire surveys in person during the education session. According to Pope and Mays (2020), in-person questionnaire survey distribution helps researchers obtain high response rates, better quality data, and reach target respondents more effectively. The DNP lead will apply in-person questionnaire survey distribution to ensure all participants receive questionnaires and

participate in the quality improvement project. Next, the DNP lead will generate a report using the online platform to collect the responses anonymously to protect participants' privacy and confidentiality. Flick (2017) states that anonymous data collection requires researchers to eliminate any identifying value linking participants to the collected information. The DNP lead ensure all questionnaires are devoid of personal information, such as age and phone numbers, which some participant may mistakenly include. Flick (2017) indicates that anonymous data collection influences respondents to provide honest responses, feel comfortable, and respond to all questions. The DNP lead will use the online platform to ensure participants' data privacy and confidentiality, make them comfortable, and obtain honest responses.

Process Evaluation

In quality improvement projects, Flick (2017) states that process evaluation involves determining whether participants have implemented programs' activities as intended and obtained specific outputs. The DNP lead will conduct a process evaluation every two days to determine the successful progress of the program's main activities and their intended outcomes. In evaluating the process, the DNP lead will commit at least four hours every two days to assess the intervention process.

Outcome Evaluation

In quality improvement projects, Flick (2017) indicates that outcome evaluation involves evaluating programs' outcomes to determine their effects on the target population. The DNP lead will review the charts every three days. The DNP lead will commit at least four hours every three days to check the chart. The outcome evaluation will help the DNP lead to determine if the providers' compliance rate improved by 50% with the addition of physical exercises to the current depression treatment program among adolescents.

Ethics and Human Subject Protection

Flick (2017) indicates that researchers use direct area and network-attached storage to store data. The DNP lead will use the direct-areas storage method by storing data on a Solid-State Drive (SSD) in a personal computer. The-DNP lead will create a unique and strong password to restrict unauthorized persons from accessing the data. Begun et al. (2018) state that researchers use personal connections, grueling testing, online communities, and internal feedback to recruiting study participants. The DNP will utilize personal and professional connections to identify and recruit study participants. The DNP lead will interact face-to-face with providers to recruit the ideal number of study participants. For example, the DNP will collaborate with other medical practitioners, such as the nurse and clinical director, to identify and recruit individuals qualified to participate in the project. In recruiting participants, the DNP lead will ensure that only interested participants volunteer to participate in the project to commit their time and efforts to ensure successful implementation. Next, participants will enjoy certain benefits and encounter risks in the quality improvement project. The project will benefit participants as they will play active roles in improving the management and treatment of adolescent depression. Also, the DNP lead will offer some compensation in the form of refreshments, such as juice, coffee, and tea, to the project's participants. Finally, the project site does not require IRB or QI committee oversight for QI projects.

Data Analysis Plan

The DNP lead will apply the Wilcoxon signed ranks test and McNemar's test to analyze the data to address objective three of the QI project. In applying the Wilcoxon signed ranks test, the DNP does not assume that the data are interval or ratio, nor that they are normally distributed. The DNP lead will use McNemar's test to determine if the evidence-based physical activities are being utilized in treatment plans for depressed adolescents within the four weeks. The DNP lead will assume that the variable under study using the McNemar's test will be categorical and repeated-measures. The lead will assume that the expected number of observations at each variable level will be at least five. Next, the project's alpha level will be .05 to ensure the probability of type 1 error is maintained at an appropriate level. The DNP will use the Statistical Package for the Social Sciences (SPSS) data analysis software to analyze the collected data. Illukkumbura (2020) argues that the SPSS data analysis software allows data analysts to successfully analyze different data sets using various statistical analyses. Therefore, the DNP lead will use SPSS data analysis software to complete the Wilcoxon signed ranks test and McNemar's test. Ultimately, the DNP lead does not intend to use a statistician in the data analysis process.

Results

The DNP lead applied the Wilcoxon signed ranks test and McNemar's test to analyze the data to address the QI project's pre- and post-assessments and aims. The DNP lead collected data from 25 participants to answer the six pre- and post-study questions. The analysis of responses to question 2, which reflects providers' belief in the effectiveness of physical activities for managing and preventing depression, showed a significant increase from pre- to post-test, $Z = -4.231, p < .001$. This shows a statistically significant change in providers' attitudes pre- to post-educational sessions, as shown in Appendix H. The analysis of responses to question 5, which reflects providers' willingness to recommend evidence-based physical activities for managing and preventing depression, showed a significant increase from pre- to post-test, $Z = -2.619, p < .001$. This also shows a statistically significant change in providers' attitudes pre- to post-educational sessions. Questions 1, 3, 4, and 6 did not pertain directly to the research questions in the study. The data from these questions were not used to test hypotheses. However, the frequency tables for these questions (Pre and Post) are provided in Appendix H.

Therefore, it is rational for the DNP lead to conclude that the educational session improved providers' knowledge of different types of evidence-based physical exercises essential in treating depression in addition to current treatment. McNemar's test was performed to determine if a significant increase occurred in the rate at which providers recommended evidence-based physical activities to adolescent patients with depression. The chart review showed that compliance rates changed from 40% in Week 2, to 48% in Week 3, 56% in Week 4, and finally 72% compliance in week 5. There was a statistically significant increase in compliance from week 2 to week 5, $p = .008$ (exact sig., 2-tailed).

Initially, the DNP lead intended to complete the project in four weeks. However, it increased by one week. In the additional week, the DNP lead completed the final week of chart audits, reflected on the plan and its outcomes, celebrated the improvements and lessons with the stakeholders, and addressed the weaknesses of the intervention. For example, the DNP identified and congratulated providers who applied their knowledge of evidence-based physical activities in empowering patients and developing their depression treatment plans.

Summary

The project created an educational tool of appropriate exercises for providers to educate adolescents diagnosed with depression. The educational tool included detailed information about the effects of physical exercises on depression, how much physical exercise is enough, and how patients can start and remain motivated. For example, the educational tool informed providers and patients that physical activities enable patients to gain confidence, cope with depression in healthy ways, and release feel-good endorphins. It ensured provider compliance by educating adolescents diagnosed with depression on regular exercise. The providers involved in the project informed patients about regular exercise and their impact on depression management. Also, the project accomplished its main goals, which included increasing the rate of providers educating patients on evidence-based exercises to above 50%. It improved the management of depression among adolescents through providers promoting physical exercise. The project shared specific physical recommendations for managing depression based on prior research (López-Torres Hidalgo, 2019), which demonstrated that physical exercises, especially running, jogging, walking, swimming, and dancing, are important in minimizing the adverse effects of depression. On the other hand, the project timeline was short, restricting the discussion of various evidence-based exercises required to manage depression among adolescents.-The project had limited

participants, which entailed 25 individuals. In recruiting the participants, some providers showed a lack of interest in the project. For instance, the majority of providers, outside of those who participated in the project, avoided communicating with the project lead due to financial concerns, as the training was not mandatory, and they were not paid by the clinic to attend.

Interpretation

The outcome of the quality improvement project aligns with previously published literature. According to Chen et al. (2022), educating patients improves their understanding of the evidence-based physical exercises required to manage depression. In the seminar, providers who attended the education sessions revealed their knowledge of evidence-based physical exercises. The providers demonstrated knowledge of evidence-based physical exercises as they educated patients about running, jogging, walking, swimming, and dancing and the required amount to control or ease the adverse symptoms of depression among adolescents. The project influenced improved communication, teamwork, and leadership among the providers and patients. The providers maintained interpersonal communication with patients to educate them about evidence-based physical exercises. The providers worked with other practitioners, such as physical exercise trainers, to demonstrate certain physical activities needed to manage depression.

Any agency or grant did not fund this quality improvement project. The project lead provided \$600.00 for operational costs, including printing fees for handout materials, food and snacks for participants during the five-week project. Regarding opportunity costs, the providers missed the chance to work and earn money but gained knowledge about physical exercises that will improve their practice. Therefore, the program impacted providers with the knowledge that

they will use to complement pharmacological methods in managing depression among adolescents.

Project Limitations

The quality improvement project experienced selection bias as the DNP lead selected most participants from one ethnic group. Shea et al. (2022) note that selection bias occurs when researchers select a study population that is not accurately representative of the target population. According to Shea et al. (2022), researchers should include inclusive participants in their studies to understand and resolve problems from multiple perspectives and find results that can be generalized across multiple populations. Therefore, the results from the quality improvement project cannot easily be generalized across multiple populations. The DNP lead tried to minimize the participant selection bias by selecting at least one member of each ethnic group in the clinic.

In the data collection phase, the DNP lead anticipated response bias among certain participants for fear of being judged in the pre- and post-surveys. The DNP lead minimized the data collection limitation by ensuring the participants' responses were anonymous, and their identities would be private. As a result, the DNP lead instructed participants to provide truthful responses.

Finally, the project's time was short, only four weeks. If the project's time was more than four weeks, the DNP could have collected more data from participants educating patients on the importance of exercise to obtain more significant results.

Conclusion

In summary, the quality improvement project assessed participant knowledge of utilizing exercise to treat adolescent patients with depression with a pre and post-test questionnaire about the importance of exercises for treating depressed adolescents. The quality improvement project aimed to educate all healthcare providers about different types of evidence-based physical exercises essential in treating depression in adolescents as a supplement to current pharmacological treatment, within four weeks. Next, the quality improvement project is useful as it improves providers' and patients' knowledge of evidence-based physical activities required for depression management. For instance, the project encouraged participants to educate adolescents diagnosed with depression about the importance of running and jogging in managing the signs and symptoms of depression. Thus, providers complemented physical activities with pharmacological methods to manage depression, whereas adolescents will use physical exercises to overcome adverse symptoms of depression.

The project is sustainable as the clinic Director approved sharing the created educational pamphlet during new hire orientation to educate inexperienced or new providers about evidence-based physical activities to supplement treating depression among adolescents. The quality improvement project influenced teamwork and interprofessional collaboration among providers and patients, which will positively influence the nursing practice. For instance, medical providers communicated effectively with patients and involved them in teamwork activities to accomplish the objectives of the quality improvement project.

The DNP lead intends to create a poster and present the project outcomes. The strategy will enable the DNP lead to influence nursing policies to prioritize applying evidence-based

physical activities in treating depression among adolescents. It will also influence-providers to research other non-pharmacological treatments in managing depression.

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Appendix A

TOTAL CARE MEDICAL CLINIC, Inc

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1024 South Vermont Ave
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Date: 07/01/2022
Touro University Nevada

There is no affiliation agreement need.

Sincerely

A handwritten signature in black ink, appearing to read 'Carmen Brown', with a horizontal line extending to the right.

Carmen Brown / Assistant Administrator

APPENDIX B: Pretest and Post-test Questionnaire

- 1. Are you aware of any evidence-based physical activities essential in treating depression?**
 - i. Yes
 - ii. No
 - iii. Unsure
- 2. If yes, do you believe evidence-based physical activities effectively manage or prevent depression among adolescents?**
 - i. Completely agree
 - ii. Somewhat agree
 - iii. Neutral
 - iv. Somewhat disagree
 - v. Completely disagree
- 3. Would you approve of using pharmacological methods in conjunction with evidence-based physical activities in managing depression?**
 - i. Yes
 - ii. No
 - iii. Unsure
- 4. Do you feel comfortable using evidence-based physical activities to manage depression?**
 - i. Not at all true
 - ii. Hardly true
 - iii. Moderately true
 - iv. Exactly true
- 5. Would you recommend evidence-based physical activities as a treatment method for depressed adolescents?**
 - i. Completely agree
 - ii. Somewhat agree
 - iii. Neutral
 - iv. Somewhat disagree
 - v. Do not know
- 6. Would you attend another educational seminar to learn about depression management strategies**
 - Yes
 - No
 - Unsure

Appendix D: Educational Session for Providers

Depression: Exercise Eases symptoms

Generally, physical exercises address the adverse symptoms of different health complications, including arthritis, diabetes, and high blood pressure (Mayo Clinic, 2017). It is undeniable that depression symptoms in adolescents improve with regular exercise. For example, physical activities enhance the mood of adolescents with depression. Individuals with depression or other mental health complications avoid exercise because it is stressful and tiresome. Nonetheless, if persons with depression get motivated to exercise, it can make a difference in improving their health and welfare. Even though physical exercises are evidence-based methods, the links between physical activities and depression are not, but working out and other forms of physical activity can ease symptoms of depression and make patients feel better. Exercise may also help keep depression from returning once patients feel better. Patients with depression should adhere to realistic tips like the following to overcome adverse symptoms and remain motivated.

Effects of Physical Exercise on Depression

Regular exercise may help ease depression by:

- **Releasing feel-good endorphins**, natural cannabis-like brain chemicals (endogenous cannabinoids), and other natural brain chemicals that can enhance patients' sense of well-being
- **Taking patients' mind off worries** so you can get away from the cycle of negative thoughts that feed depression.

Regular exercise has many psychological and emotional benefits, too. It can help patients:

- **Gain confidence.** Meeting exercise goals or challenges, even small ones, can boost people's self-confidence. Getting in shape can also make individuals feel better about their appearance.
- **Get more social interaction.** Exercise and physical activity may give people the chance to meet or socialize with others. Just exchanging a friendly smile or greeting as individuals walk around their neighborhood can help their mood.
- **Cope in a healthy way.** Doing something positive to manage depression is a healthy coping strategy. Trying to feel better by drinking alcohol, dwelling on how people feel, or hoping depression will go away on its own can lead to worsening symptoms.

Is a structured exercise program the only option?

According to Mayo Clinic (2017), some research shows that physical activity such as regular walking — not just formal exercise programs — may help improve mood. Physical activity and exercise are not the same thing, but both benefit patients' health.

- **Physical activity** is any activity that works people's muscles and requires energy and can include work or household, or leisure activities.
- **Exercise** is a planned, structured, repetitive body movement to improve or maintain physical fitness.

How much is enough?

Mayo Clinic (2017) recommends that individuals, especially adolescents with depression, should complete regular exercises for 30 minutes or more daily for three to five days a week to reduce the symptoms of depression. Nonetheless, smaller amounts of physical activity — as little as 10 to 15 minutes at a time — may make a difference. It may take less time exercising to improve patients' mood when they do more-vigorous activities, such as running or bicycling. The mental health benefits of exercise and physical activity may last only if patients stick with them over the long term.

In this program, providers should recommend specific physical exercise and activities programs for patients depending on the severity of the signs and symptoms of their depression. Based on the current evidence, medical practitioners should recommend a weekly physical exercise program of 30 mins for 4 times a week, and aerobic exercises for adolescents with depression lasting for around 6 weeks. On the other hand, medical practitioners should recommend 75 to 120 mins of weekly training every three times a week, and aerobic exercise for patients with depression symptoms lasting more than 8 weeks.

How Do Patients Get Started — And Stay Motivated?

Starting and sticking with an exercise routine or regular physical activity can be a challenge. These steps can help:

- **Identify what you enjoy doing.** Figure out what type of physical activities you're most likely to do and think about when and how you'd be most likely to follow through. For instance, would you be more likely to do some gardening in the evening, start your day with a jog, or go for a bike ride or play basketball after school? Do what you enjoy to help you stick with it.

- **Get your mental health professional's support.** Talk to your doctor or mental health professional for guidance and support. Discuss an exercise program or physical activity routine and how it fits into your overall treatment plan.
- **Set reasonable goals.** Your mission doesn't have to be walking for an hour five days a week. Think realistically about what you may be able to do and begin gradually. Tailor your plan to your own needs and abilities rather than setting unrealistic guidelines that you're unlikely to meet.
- **Don't think of exercise or physical activity as a chore.** If exercise is just another "should" in your life that you don't think you're living up to, you'll associate it with failure. Rather, look at your exercise or physical activity schedule the same way you look at your therapy sessions or medication — as one of the tools to help you get better.
- **Analyze your barriers.** Figure out what's stopping you from being physically active or exercising. If you feel self-conscious, for instance, you may want to exercise at home. If you stick to goals better with a partner, find a friend to work out with or who enjoys the same physical activities that you do. If you don't have money to spend on exercise gear, do something that's cost-free, such as regular walking. If you think about what's stopping you from being physically active or exercising, you can probably find an alternative solution.
- **Prepare for setbacks and obstacles.** Give yourself credit for every step in the right direction, no matter how small. If you skip exercise one day, that doesn't mean you can't maintain an exercise routine and might as well quit. Just try again the next day. Stick with it.

Do I need to see my doctor?

Check with your doctor before starting a new exercise program to make sure it's safe for you. Talk to your doctor to find out which activities, how much exercise and what intensity level is OK for you. Your doctor will consider any medications you take and your health conditions. He or she may also have helpful advice about getting started and staying motivated. If you exercise regularly but depression symptoms still interfere with your daily living, see your doctor or mental health professional. Exercise and physical activity are great ways to ease symptoms of depression, but they aren't a substitute for talk therapy (psychotherapy) or medications.

Slide 1

Educational Handout for providers

Slide 2

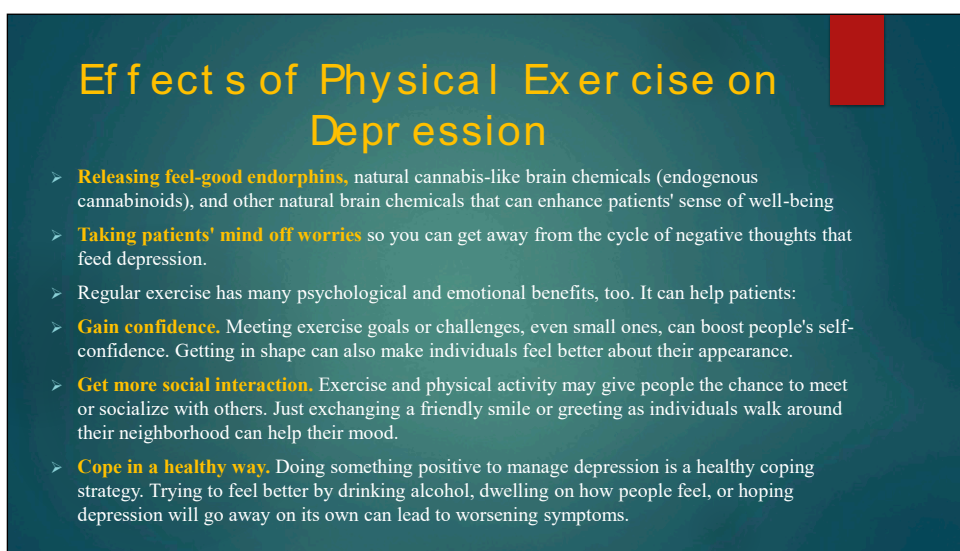
Depression: Exercise Eases symptoms

- Physical exercises address the adverse symptoms of different health complications, including arthritis, diabetes, and high blood pressure (Mayo Clinic, 2017).
- Depression symptoms in adolescents improve with regular exercise.
- Physical activities enhance the mood in adolescents with depression.
- Forms of physical activity can definitely ease symptoms of depression and make patients feel better.
- Exercise keep depression from coming back once patients are feeling better.

Generally, physical exercises address the adverse symptoms of different health complications, including arthritis, diabetes, and high blood pressure (Mayo Clinic, 2017). It is undeniable that

depression symptoms in adolescents improve with regular exercise. For example, physical activities enhance the mood in adolescents with depression. Individuals with depression or other mental health complications avoid exercise because it is stressful and tiresome. Nonetheless, if persons with depression get motivated to exercise, it can make a difference in improving their health and welfare. Even though physical exercises are evidence-based methods, the links between physical activities and depression are not, but working out and other forms of physical activity can definitely ease symptoms of depression and make patients feel better. Exercise may also help keep depression from coming back once patients are feeling better. Patients with depression should adhere to realistic tips like the following to overcome adverse symptoms and remain motivated.

Slide 3



Effects of Physical Exercise on Depression

- **Releasing feel-good endorphins**, natural cannabis-like brain chemicals (endogenous cannabinoids), and other natural brain chemicals that can enhance patients' sense of well-being
- **Taking patients' mind off worries** so you can get away from the cycle of negative thoughts that feed depression.
- Regular exercise has many psychological and emotional benefits, too. It can help patients:
- **Gain confidence**. Meeting exercise goals or challenges, even small ones, can boost people's self-confidence. Getting in shape can also make individuals feel better about their appearance.
- **Get more social interaction**. Exercise and physical activity may give people the chance to meet or socialize with others. Just exchanging a friendly smile or greeting as individuals walk around their neighborhood can help their mood.
- **Cope in a healthy way**. Doing something positive to manage depression is a healthy coping strategy. Trying to feel better by drinking alcohol, dwelling on how people feel, or hoping depression will go away on its own can lead to worsening symptoms.

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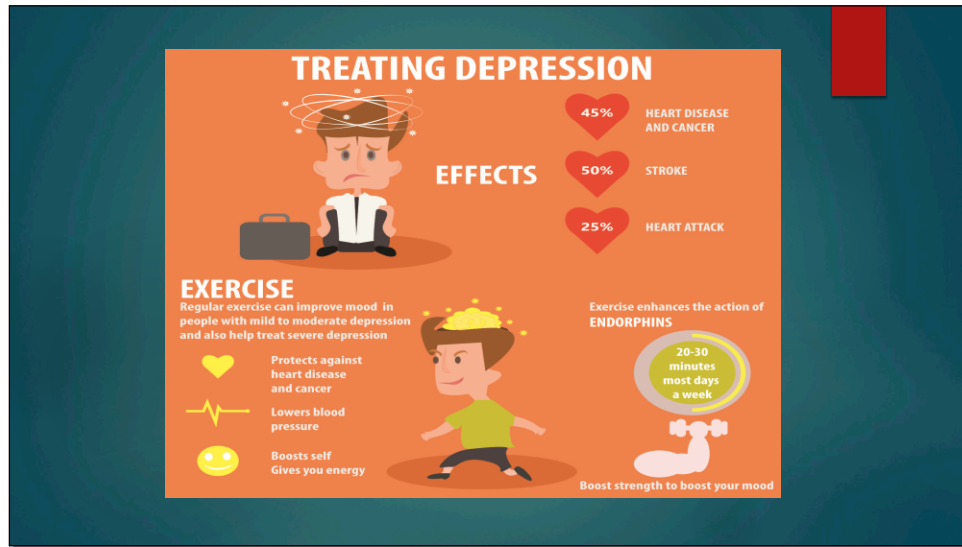
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Cope in a healthy way. Doing something positive to manage depression is a healthy coping strategy. Trying to feel better by drinking alcohol, dwelling on how people feel, or hoping depression will go away on its own can lead to worsening symptoms.

Slide 4

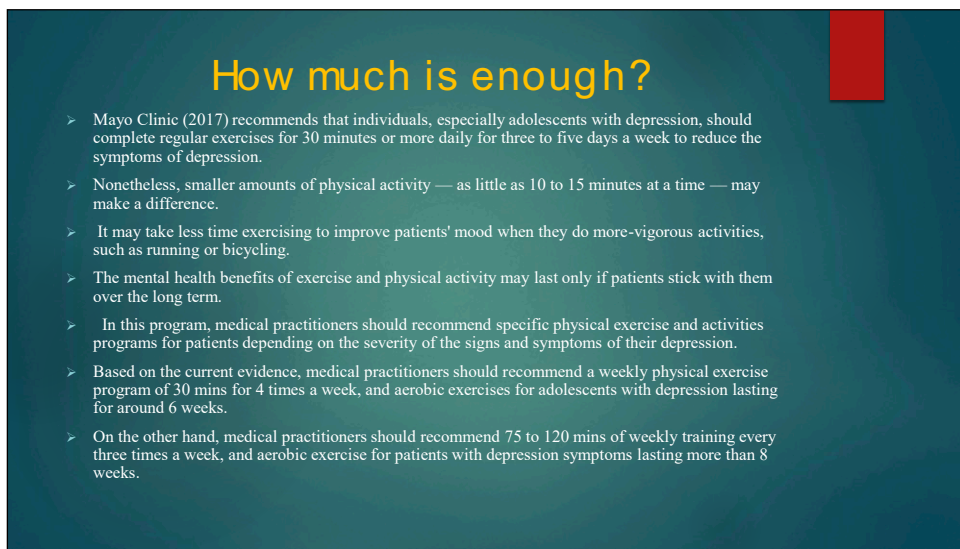


Slide 5

Is a structured exercise program the only option?

- According to Mayo Clinic (2017), some research shows that physical activity such as regular walking — not just formal exercise programs — may help improve mood.
- Physical activity and exercise are not the same thing, but both benefit patients' health.
- **Physical activity** is any activity that works people muscles and requires energy and can include work or household, or leisure activities.
- **Exercise** is a planned, structured, repetitive body movement to improve or maintain physical fitness.

Slide 6



How much is enough?

- Mayo Clinic (2017) recommends that individuals, especially adolescents with depression, should complete regular exercises for 30 minutes or more daily for three to five days a week to reduce the symptoms of depression.
- Nonetheless, smaller amounts of physical activity — as little as 10 to 15 minutes at a time — may make a difference.
- It may take less time exercising to improve patients' mood when they do more-vigorous activities, such as running or bicycling.
- The mental health benefits of exercise and physical activity may last only if patients stick with them over the long term.
- In this program, medical practitioners should recommend specific physical exercise and activities programs for patients depending on the severity of the signs and symptoms of their depression.
- Based on the current evidence, medical practitioners should recommend a weekly physical exercise program of 30 mins for 4 times a week, and aerobic exercises for adolescents with depression lasting for around 6 weeks.
- On the other hand, medical practitioners should recommend 75 to 120 mins of weekly training every three times a week, and aerobic exercise for patients with depression symptoms lasting more than 8 weeks.

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Slide 7

How Do Patients Get Started — And Stay Motivated?

- Starting and sticking with an exercise routine or regular physical activity can be a challenge. These steps can help:
- **Identify what you enjoy doing.** Figure out what type of physical activities you're most likely to do and think about when and how you'd be most likely to follow through. For instance, would you be more likely to do some gardening in the evening, start your day with a jog, or go for a bike ride or play basketball with your children after school? Do what you enjoy to help you stick with it.
- **Get your mental health professional's support.** Talk to your doctor or mental health professional for guidance and support. Discuss an exercise program or physical activity routine and how it fits into your overall treatment plan.
- **Set reasonable goals.** Your mission doesn't have to be walking for an hour five days a week. Think realistically about what you may be able to do and begin gradually. Tailor your plan to your own needs and abilities rather than setting unrealistic guidelines that you're unlikely to meet.
- **Don't think of exercise or physical activity as a chore.** If exercise is just another "should" in your life that you don't think you're living up to, you'll associate it with failure. Rather, look at your exercise or physical activity schedule the same way you look at your therapy sessions or medication — as one of the tools to help you get better.
- **Analyze your barriers.** Figure out what's stopping you from being physically active or exercising. If you feel self-conscious, for instance, you may want to exercise at home. If you stick to goals better with a partner, find a friend to work out with or who enjoys the same physical activities that you do. If you don't have money to spend on exercise gear, do something that's cost-free, such as regular walking. If you think about what's stopping you from being physically active or exercising, you can probably find an alternative solution.
- **Prepare for setbacks and obstacles.** Give yourself credit for every step in the right direction, no matter how small. If you skip exercise one day, that doesn't mean you can't maintain an exercise routine and might as well quit. Just try again the next day. Stick with it.

Slide 8

Do I need to see my doctor?

- Check with your doctor before starting a new exercise program to make sure it's safe for you.
- Talk to your doctor to find out which activities, how much exercise and what intensity level is OK for you.
- Your doctor will consider any medications you take and your health conditions.
- He or she may also have helpful advice about getting started and staying motivated.
- If you exercise regularly but depression symptoms still interfere with your daily living, see your doctor or mental health professional.
- Exercise and physical activity are great ways to ease symptoms of depression, but they aren't a substitute for talk therapy (psychotherapy) or medications.

Appendix D

Timeline	Element	Activities
Week 1	Plan	<ul style="list-style-type: none"> ● Administer pre-test questionnaires to participants. ● Give out handouts with information about physical activities. ● Provide interactive educational seminars. ● Offer post-test questions.
Week 2 - Week 4	Do	<ul style="list-style-type: none"> ● Implementing the recommended action plan by educating patients on physical exercise utilizing the tools presented at the educational seminar ● Actualizing the education seminar.
Week 3 – Week 5	Study	<ul style="list-style-type: none"> ● Gather information and feedback about the implemented action plan. ● Provide constructive feedback to participants ● Identify the unintended effects of the action plan. ● Utilize the weekly chart audit to determine compliance
Week 5	Act	<ul style="list-style-type: none"> ● Complete the final week of chart audits ● Reflect on the plan and its outcomes. ● Celebrate improvements and lessons with the stakeholders. ● Address any weaknesses of the intervention.

APPENDIX E**Chart Audit Tool for Mental Health Nurse**

Name of Nurse: _____ Date and Time of Mental Health Care: _____

Name of Reviewer: _____ Date of Review: _____

INDICATOR	Y S	N O	N/ A
Chief complaint			
Medical history			
The severity of symptoms (High)			
Educational Booklet Received			
Recommended Physical Activities			
Key questions addressed relevant to the chief complaint			
Nurse-initiated orders			
Signature of mental health nurse			

Comments: _____

Date and time audit feedback provided to mental health nurse: _____

APPENDIX F: Pamphlet for Educating Patients

TYPES OF EXERCISES

- The word "exercise" may make you think of running laps around the gym.
- But exercise includes a wide range of activities that boost your activity level to help you feel better.
- Certainly running, lifting weights, playing basketball and other fitness activities that get your heart pumping can help.
- But so can physical activity such as gardening, washing your car, walking around the block or engaging in other less intense activities.
- Any physical activity that gets you off the couch and moving can help improve your mood.
- You don't have to do all your exercise or other physical activity at once.

Advancing Health, Transforming lives here.



PHYSICAL ACTIVITIES

- According to Mayo Clinic (2017), some research shows that physical activity such as regular walking — not just formal exercise programs — may help improve mood. Physical activity and exercise are not the same thing, but both benefit patients' health.
- **Physical activity** is any activity that works people's muscles and requires energy and can include work or household, or leisure activities.
- **Exercise** is a planned, structured, repetitive body movement to improve or maintain physical fitness.

RECOMMENDED EVIDENCE-BASED PHYSICAL ACTIVITIES FOR DEPRESSION TREATMENT



HOW MUCH IS ENOUGH?

- Mayo Clinic (2017) recommends that individuals, especially adolescents with depression, should complete regular exercises for 30 minutes or more daily for three to five days a week to reduce the symptoms of depression.
- Nonetheless, smaller physical activity — as little as 10 to 15 minutes at a time — may make a difference.
- It may take less time exercising to improve patients' mood when they do more-vigorous activities, such as running or bicycling
- The mental health benefits of exercise and physical activity may last only if patients stick with them over the long term.
- In this program, medical practitioners should recommend specific physical exercise and activities programs for patients depending on the severity of the signs and symptoms of their depression.
- Based on the current evidence, medical practitioners should recommend weekly physical exercises, including walking and jogging, for 30 minutes for 4 times a week, and aerobic exercises for adolescents with depression lasting for around 6 weeks.
- On the other hand, Providers should recommend 75 to 120 minutes of weekly training every three times a week, and

Get at least **150 MINUTES** of
MODERATE-INTENSITY physical activity per week.



— OR —

Get at least **75 MINUTES** of
VIGOROUS-INTENSITY physical activity per week.



Spread activity out over 3 days per week.
This can reduce the risk for injury and excessive fatigue.

together.wgk.orc/teensand20s

APPENDIX G: Project Status Update

<p>Week 1</p> <p>Dates: 11/01/2022</p>	<ul style="list-style-type: none"> ● Administer pre-test questionnaires to participants. ● Give out handouts with information about physical activities. ● Provide interactive educational seminars. ● Offer post-test questions.
<p>Week 2</p> <p>Dates: 11/07/2022</p>	<ul style="list-style-type: none"> ● Implementing the recommended action plan by educating patients on physical exercise utilizing the tools presented at the educational seminar ● Actualizing the education seminar.
<p>Week 3</p> <p>Dates: 11/14/2022</p>	<ul style="list-style-type: none"> ● Gather information and feedback about the implemented action plan. ● Provide constructive feedback to participants
<p>Week 4</p> <p>Dates: 11/21/2022</p>	<ul style="list-style-type: none"> ● Identify the unintended effects of the action plan. ● Utilize the weekly chart audit to determine compliance
<p>Week 5</p> <p>Dates: 11/28/2022</p>	<ul style="list-style-type: none"> ● Complete the final week of chart audits ● Reflect on the plan and its outcomes. ● Celebrate improvements and lessons with the stakeholders. ● Address any weaknesses of the intervention.

APPENDIX H: Data Results Analysis

Test Performed	Description	Test value	Sig.
Wilcoxon Signed Ranks	Change in response to Questionnaire item 2 (belief in effectiveness) from week one to week five	-4.231	<.001
Wilcoxon Signed Ranks	Change in response to Questionnaire item 5 (would you recommend) from week one to week five	-2.619	.009
McNemar Test	Change in rates for recommending evidence-based physical activities for adolescent depression (week two to week five).		.008

Hypothesis tests performed in the study. Note: McNemar's test does not produce a statistical value in SPSS.

Week Number	Compliance Percentage	N
2	40%	25
3	48%	25
4	56%	25
5	72%	25

Percentage of providers recommending evidence-based physical activities for adolescent depression based on chart review for weeks 2 thru 5.

Q1 – Are you aware of any evidence-based physical activities in treating depression?	Responses at beginning of the study	Percent Pre	Responses at end of study	Percent Post
Yes	10	40%	25	100%
No	6	24%	0	0%
Unsure	9	36%	0	0%

Responses to Question 1, Pre & Post.

Q2 – If yes, do you believe evidence-based physical activities effectively manage or prevent depression among adolescents?	Responses at beginning of the study	Percent Pre	Responses at end of study	Percent Post
Completely agree	2	8%	14	56%
Somewhat agree	2	8%	9	36%
Neutral	4	16%	2	8%
Somewhat disagree	9	36%	0	0%
Completely disagree	8	32%	0	0%

Responses to Question 2, Pre & Post.

Q3 – Would you approve of using pharmacological methods in conjunction with evidence-based physical activities in managing depression?	Responses at the beginning of the study.	Percent pre	Responses at end of the study.	Percent Post
Yes	10	40%	25	100%
No	11	44%	0	0%
Unsure	4	16%	0	0%

Responses to Question 3, Pre & Post.

Q4 – Do you feel comfortable using evidence-based physical activities to manage depression?	Responses at the beginning of the study.	Percent Pre	Responses at the end of the study.	Percent Post
Not at all true	4	16%	0	0%
Hardly true	8	32%	0	0%
Moderately true	7	28%	11	44%
Exactly true	6	24%	14	100%

Responses to Question 4, Pre & Post

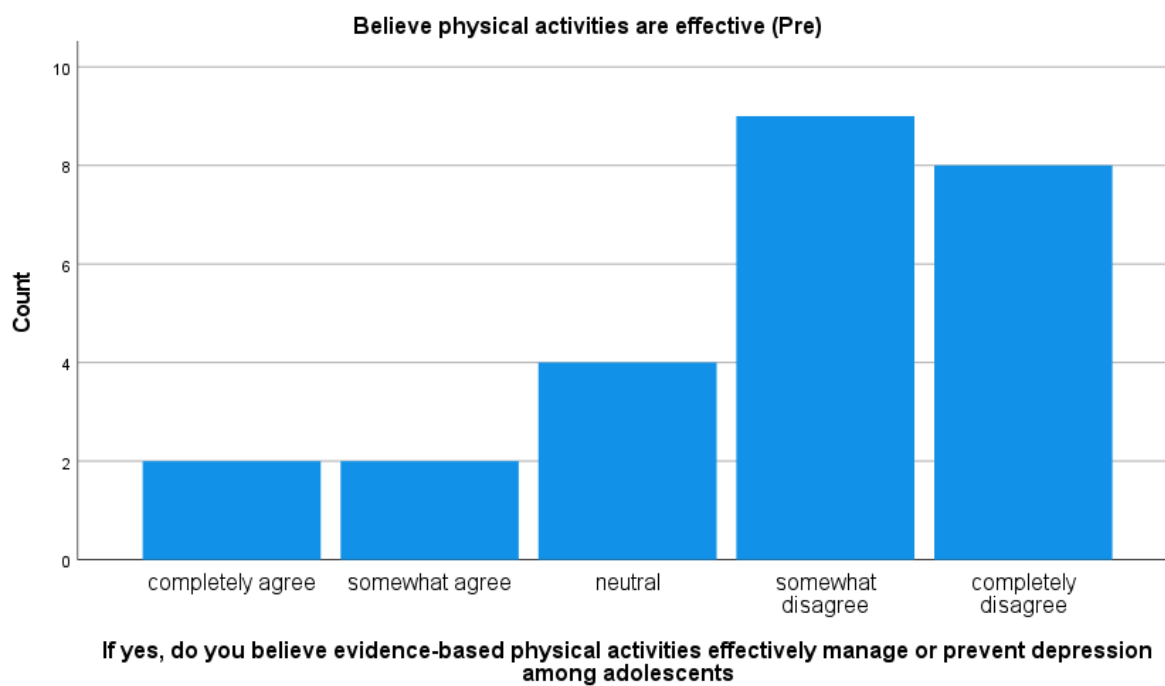
Q5 – Would you recommend evidence-based physical activities as a treatment method for depressed adolescents?	Responses at beginning of the study	Percent Pre	Responses at end of study	Percent Post
Completely agree	6	24%	12	48%
Somewhat agree	9	36%	11	44%
Neutral	4	16%	2	8%
Somewhat disagree	3	12%	0	0%
Completely disagree	3	12%	0	0%

Responses to Question 5, Pre & Post.

Q6 – Would you attend another educational seminar to learn about depression management strategies?	Responses at the beginning of the study.	Percent Pre	Responses at the end of the study	Percent Post
Yes	8	32%	17	68%
No	11	44%	0	0%
Unsure	6	24%	8	32%

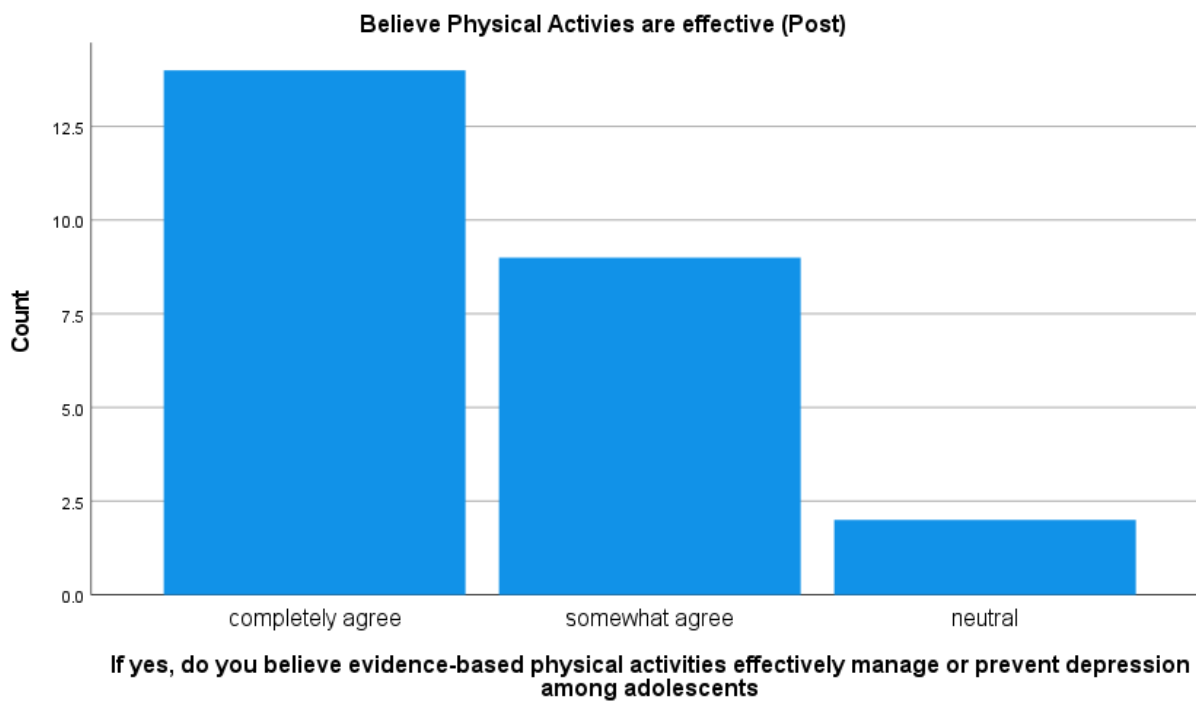
Responses to Question 6 Pre & Post.

Graph



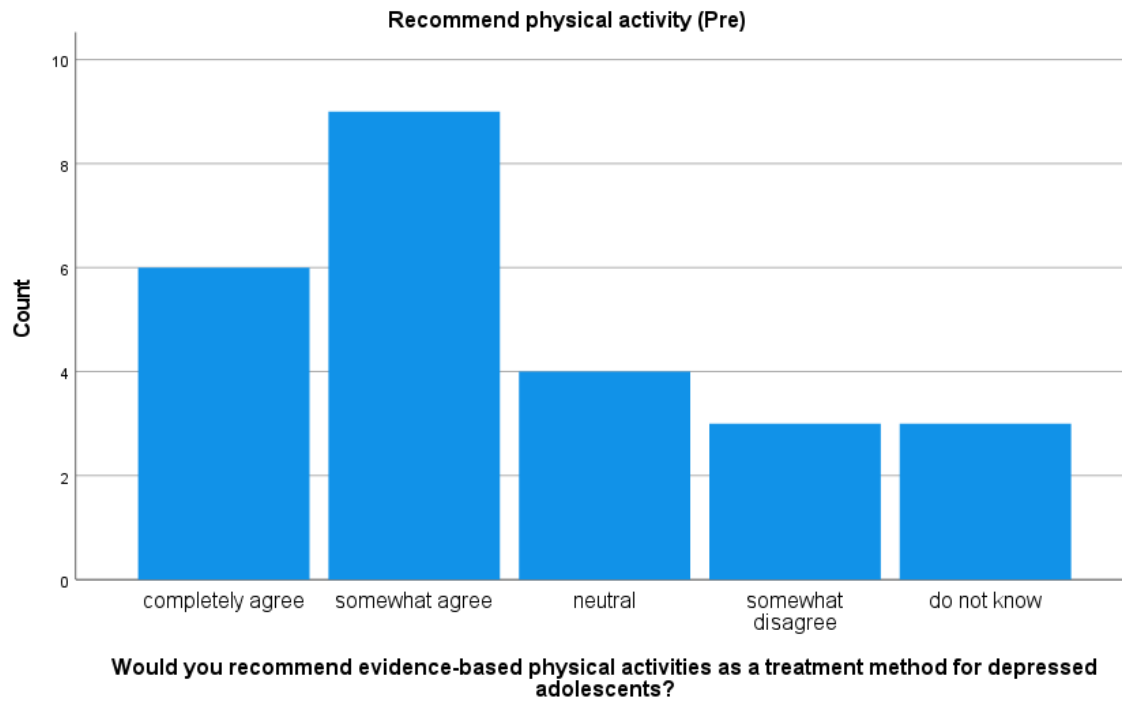
Participant responses to questionnaire item 2, Week 1 (Pre).

Graph



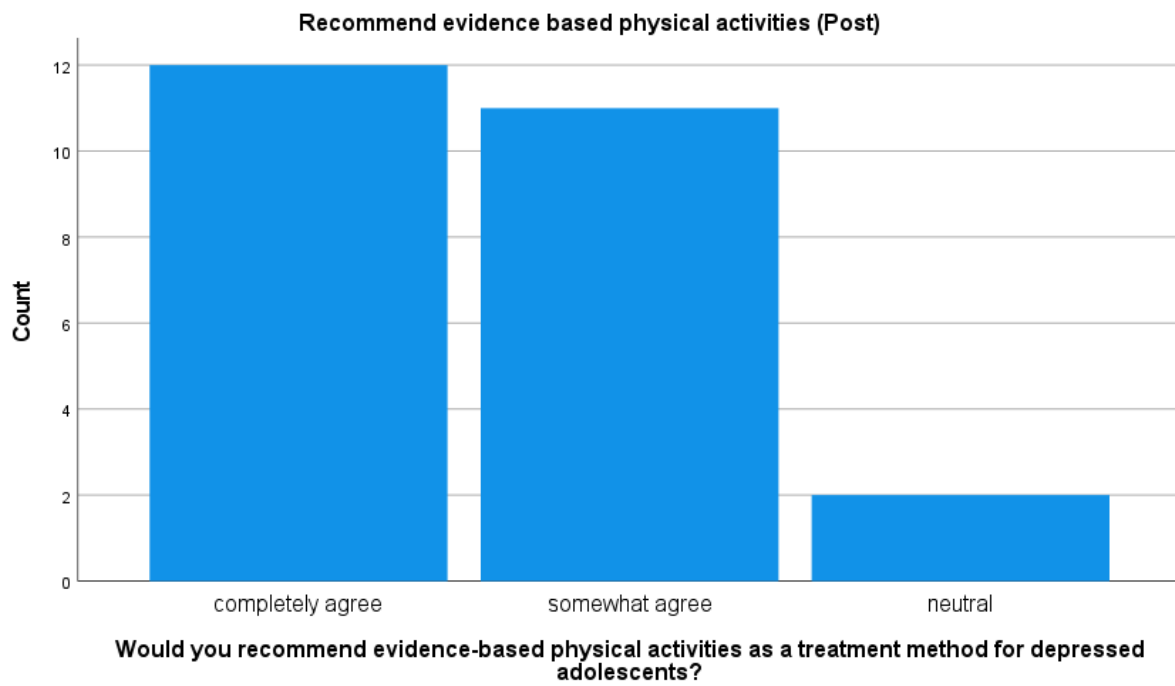
Participant responses to questionnaire item 2, Week 5 (Post).

Graph



Participant responses to questionnaire item 5, Week 2 (Pre).

Graph



Participant responses to questionnaire item 5, Week 5 (Post).