

Community Intervention Program for Adults with Depression

Depression is a very prevalent mental health disorder that commonly presents as a co-morbidity for patients in physical therapy for musculoskeletal or neurologic pain. Due to its potentially harmful effects and the ways it can be detrimental to progression through a rehabilitation program, a community could benefit from a holistic wellness program to reduce the prevalence of it. This program will utilize physical activity, patient education, family support, and regular counseling for those that are affected by this disorder. Through the utilization of this multifaceted program, depression will not be as prevalent in the community, creating a happier and healthier lifestyle for all. In order to do this, it will implement both the Social Cognitive Theory and the Cognitive Behavioral Theory.

To begin the program, participants will be evaluated by a clinical psychologist and assessed by a physical therapist. The clinical psychologist will determine the severity of depression and what the best approach to treatment is outside of physical activity. This initial evaluation is critical because some individuals with severe depression do require adjunct therapy involving medication, psychosocial therapy, and physical exercise.¹ Other individuals with minor or moderate depression usually do not require medication initially, hopefully being able to resolve their depression with physical activity and psychotherapy.¹ This evaluation addresses depression at the intrapersonal level, and helps form a framework for the individual's experience in the program.

The core component of this program is exercise. Numerous studies suggest regular exercise can reduce depression in all adults, but being most noticeable in older

adults.²⁻⁵ It was also found that if we can combine regular exercise with the Social Cognitive Theory, it can help reduce the symptoms of depression. The program will incorporate a psychologist and physical therapist discussing social support, goal-setting, and physical activity with participants and their families, as these were found to be significantly interrelated when treating patients with depression.⁶ By integrating family and household support into the program, depression is addressed at the interpersonal level.

A randomized controlled trial compared aerobic exercise to strength training in older adults with high or low depressive symptomatology.⁵ What they found is that aerobic exercise can significantly lower depression scores on the Center for Epidemiologic Studies Depression scale (CES-D) more than strength training (23% compared to 6%).⁵ Because of these findings, this program aims to make aerobic training an active component of the physical exercise aspect of this program. However, because of the results of this study showed that there is some benefit to strength training, this is a component of the program.

Aerobic training has many forms. Because there are numerous gyms in the area that have a variety of equipment to address this, and many of the individuals with depression have varying levels of physical function, this component of the program is individualized to the patient's preference. They will have written plans that include the frequency and intensity at which they should exercise, but overall, they will be able to choose the modality that best suits them. Participants will be given the options of community ambulation, stair climbing, bicycling, swimming, and running. They will receive information regarding the rigor of each of these exercises and will make the

selection with the assistance of a physical therapist. The individualization of the aerobic training component addresses depression at the intrapersonal level.

One of the components of this program will be a group-based Pilates class that meets weekly. Pilates was chosen because of the numerous benefits it offers to this population. Fleming and Herring⁷ performed a systematic review and meta-analysis of the effects of Pilates on mental health and found that this intervention can significantly reduce symptoms of depression and anxiety. Additionally, it can improve the health-related quality of life in individuals that participate in it.⁷ Furthermore, the types of exercise involved in Pilates is shown to improve exercise tolerance for patients that have the four major non-communicable diseases: cardiovascular disease, cancer, respiratory diseases, and diabetes.⁸ If individuals are suffering from depression as a result of these diseases, we can promote Pilates as an evidence-based intervention to not only allow them to be more physically active but also see a reduction in their depressive symptoms as well.

The reason that this Pilates-based intervention is beneficial is partially due to the exercise that it provides, but also because it is group-based, therefore addressing depression at the interpersonal level. It should be noted that it also more cost-effective, making it more efficient for this program and affordable for the participants involved. Finally, it will allow these participants to form long-lasting relationships with one another, which could help maintain the gains that were made during their time in the program long after they leave.

Now, just because there are a wide array of benefits for utilizing different forms of exercise to decrease depression or specific depressive symptoms does not mean that it

is the only intervention to use. This program will also include weekly meetings for participants to meet in a group setting for counseling and discussion. This treatment will be based on the cognitive behavioral theory (CBT) and will be led by a counselor licensed in providing this. A review by Martinsen⁹ identified that current evidence recommends group cognitive behavioral therapy with an emphasis on behavioral activation. They discussed that if this individual can use CBT to focus more on active participation in activities and reduce their passive participation in activities, it can reduce the prevalence of their depressive symptoms.

An RCT performed by Wuthrich et al.¹⁰ supports this review, as it explored the benefits of CBT group-based therapy when compared to regular group counseling sessions and found that CBT group-based therapy is more effective and efficient at reducing depression and anxiety scores and severity in older adults. The group that was involved in CBT saw 54% of the participants achieve a full recovery from their primary disorder, with 38% being anxiety and mood disorders.¹⁰ They maintained these benefits at 6-months follow-up, which indicates that this therapy has long-term benefits.¹⁰ These benefits are a result of the psychoeducation, activity scheduling, problem-solving, cognitive restructuring, and coping mechanisms that a CBT intervention provides.

Unfortunately, it is difficult to assess depression objectively. Most of the outcome measures used to track depression do their best to assess objectively, but ultimately, they are subjective because the patient is filling them out. However, evidence points out that some are more reliable for test-retest measures, and each has its benefits. The main outcome measures that this program uses are The Beck Depression Inventory-II (BDI-II), the WHO-5 Well-Being Index (WHO-5), the Quality of Life Scale (QLS), and the

numeric pain rating scale (NPRS). We chose the BDI-II because of its ability to effectively detect the severity of depression and because of its good to excellent test-retest reliability (.74 to .96).¹¹ This indicates that it would be a reliable outcome measure to use for assessing long-term changes. The WHO-5 was selected because it is brief (5 questions), has been tested and found to be sensitive and specific in geriatrics, neurology, psychiatry, and a vast number of other settings, indicating that can be used across a community of a variety of individuals.¹² The QLS was selected because it can be used to identify sources of depression due to its multi-faceted questioning. It addresses work, home, social, and other aspects that could be contributing to psychological distress. Finally, the NPRS is being used to identify any sources of musculoskeletal or nerve pain and to track the severity of those throughout the program.

Physical therapists will be able to use any other outcome measures they deem as appropriate for each individual, but these outcomes will not be necessarily included in program reporting. This will allow the physical therapist the ability to write goals and track progress throughout their component of the program design.

Through utilizing this program, patients with depression are able to receive individualized and tailored interventions that are targeted to not only help them, but also provide an outlet for meeting others that are going through a similar experience. The individual evaluation and exercise prescription will help these participants at the intrapersonal level, where the group-based Pilates and CBT therapy will help them at the interpersonal level. As a result, the patients who follow this program will not only become more physically and mentally healthy through activity; they will also form long-

lasting relationships with other participants and counselors to carry them into a future of happiness.

Goals of the Program:

In order to make this program as successful as possible, the following participant goals must be achieved:

- The participant will achieve 17.5% or greater improvement from baseline to 12 weeks in on their BDI-II score, indicating an MCID.¹³
- The participant will demonstrate an improvement of 5.3 or greater from baseline to 12 weeks in their QLS score, indicating an MCID.¹⁴
- The participant will have a 15% or greater change in their numeric pain rating scale score from baseline to 12 weeks to indicate an MCID.¹⁵
- Each week, the participant will complete the exercises on 80% or greater of their assigned individual exercise program days, as measured by data from Physitrack.
- Over 12 weeks, the participant will have attended at least 9 of 12 (75%) group CBT counseling sessions
- Over 12 weeks, the participant will have attended at least 9 of 12 (75%) group Pilates classes.

Methods:

This program will run continuously and will be open to the public. Referrals will be made from psychologists, psychiatrists, and physical therapists for patients who they believe could succeed in the program. They will enter the program and receive a

thorough evaluation from the physical therapist and psychologist on staff. The psychologist will be responsible for administering the outcome measures and performing a thorough psychological evaluation. The physical therapy component of this evaluation will include a cardiovascular screen, a neurological screen, and a musculoskeletal screen. This physical therapy evaluation will take outcome measures to assess baseline muscular function, cardiorespiratory function, and neurological status to ensure that the participant is of adequate health to participate.

At the end of the evaluation with the physical therapist, the therapist and the participant will then discuss the patient's exercise goals with them and help them form an independent home exercise plan for that component of this program. This exercise plan will consist of aerobic exercise and strength training and will be done in the patient's own free time at the location of their choosing. If they are more interested in outdoor activity, they are allowed to do so. If they are more interested in exercising indoors, they can choose from any of the many gyms in the area. Exercises will be given to the patient in a paper format and also provided through the Physitrack platform. This platform allows them to access their fitness program on their phone, computer, or tablet. It provides detailed instructions on how to properly perform exercises, when to perform them, and allows them to log their progress per session. This information will then be received by the therapist to keep form continuous data.

Ideally, the individual component of this exercise program will occur at a frequency of 3-4 times per week with an emphasis on aerobic exercise due to its greater benefits for individuals with depression. This frequency of 3-4x per week will also allow

for 2-3 days of rest when the 1 day per week Pilates class is included. Examples of an individualized plan can be seen below:

| Day of Week | Exercise | Time (min) | Set/Reps |
|--------------------|-------------------|-------------------|------------------|
| Monday | Bicycle ride | 30 min+ | 1 set |
| Tuesday | Bicep curls | | 3 sets x 10 reps |
| | Chest press | | 3 sets x 10 reps |
| | Pulldowns | | 3 sets x 10 reps |
| | Row | | 3 sets x 10 reps |
| | Tricep extensions | | 3 sets x 10 reps |
| Wednesday | Rest | | |
| Thursday | Pilates | 1 hour | |
| Friday | Jogging/walking | 30 min+ | 1 set |
| Saturday | Leg press | | 3 sets x 10 reps |
| | Leg extension | | 3 sets x 10 reps |
| | Leg curls | | 3 sets x 10 reps |
| | Calf raises | | 3 sets x 10 reps |
| Sunday | Rest | | |

The individualized portion of this program will take place over 12 weeks. This length was partially chosen because it is longer than 9 weeks, thereby providing enough of a benefit for reducing depression.¹⁶ It also exceeds the minimum allotted time necessary for a physical therapist to perform a re-evaluation, which is 30 days or 10 visits. Finally, it allows adequate time for the patient to become accustomed to their program, gains to be made, and new habits to be formed. If the patient feels like they need to modify their program at any point, they can contact the physical therapist and set up an appointment.

The other two components of the program (group meetings and Pilates class) will take place at a local community center. In this sense, they will be both affordable and accessible to anyone in the community who elects to participate. The group meetings will occur once per week and will be organized by a licensed psychologist in the area that specializes in CBT. The main purpose of these meetings will be to air grievances and to provide support for one another. These sessions will be continuous and will always be open to any members of the program as well as the public.

The Pilates class will meet once per week for 60 minutes. This course will be offered 2-3 times per week to ensure that enough individuals can fit it into their schedule, but will only be required once per week for attendance purposes. Participants will sign up for class times through an app on their smartphones, allowing the instructor to prepare in advance for class sizes. This component of the program will be led by a certified Pilates instructor, and preferably one that is also a licensed physical therapist to ensure continuity and communication between them and the program evaluator. This will be used as a time to let out any stress or tension that has been building up over the

week in a group-based exercise format. The focus on strength, flexibility, balance, and body awareness will be key for helping our participants improve their overall health and incorporate core strengthening into the weekly program plan.

After 12 weeks, the patient will return to the physical therapist and psychologist for re-assessment of outcomes and a re-evaluation. Comparisons will be made between the pre-program outcome scores and the post-program outcome scores. At this time, if the patient elects to continue in the program, they will either have their plan tweaked or have an individual plan written up for them by the physical therapist.

Program Evaluation:

Considering that this program is year-round, continuously running endeavor, the evaluation of it will be ongoing as well. The team of physical therapists, psychologists, course instructors, and counselors will meet once monthly at minimum to review outcomes data, discuss pros and cons, work on marketing tactics, form or update budget proposals, and review feedback from members and the community. These meetings will be imperative to keeping the program successful and forward thinking.

Periodically, the physical therapist in charge of the program will sit in on a class of Pilates and observe the patients' physical progress. This will be done to ensure that all participants in the program are showing improvement in their physical functioning. In the event that they are regressing or having difficulty with components of the Pilates class, they will have an appointment scheduled with the physical therapist to help them

with whatever deficits they are having. The therapist will then modify both the individual and Pilates-based components of their program to better ensure their success.

The psychologist will also report any pertinent information about his group sessions to the program director while abiding by HIPAA protocol. Any pertinent changes in outcomes, adverse events, etc. will be shared and discussed. If negative changes are occurring as a result of something that the program is responsible for, then alterations will be made to improve the success of the program.

The figures of all outcomes data for each patient will be submitted to the central registry of Physitrack to keep track of patient progress through the program.¹⁷ These numbers will be accumulated and run through the Physitrack data-storing software that keeps the names of the patients anonymous.¹⁷ This software will then allow therapists, program analysts, and program developers to track the outcomes of the program on a broad scale. If certain outcomes data are showing poor results, they can make the changes necessary to improve them. This aggregate data can also be shared with stakeholders in the program and used as a marketing tool for the program.

Conclusion:

This program will be important for the community for a number of reasons. Depression is one of the, if not the most prevalent mental health disorder in the United States today. In 2015, 10.3 million individuals in the United States had at least 1 major depressive episode with associated impairment.¹⁸ Of these individuals, only 44% sought thorough medical care for it.¹⁸ 37% of adults did not receive any care for it.¹⁸ This absence of quality treatment is partially do to the cost and availability of said treatment.

It can be difficult to schedule appointments with a psychologist or psychiatrist, and additionally, can be intimidating. However, studies show that individuals with depression can achieve similar positive therapeutic results through exercise as they would receive through medication.¹⁹ Additionally, physical inactivity is associated with the development of mental health disorders such as depression.¹⁹

This program is effective because allows individuals affected by depression access to a supportive, inclusive resource close to home. It also raises awareness about this ever-present mental health disorder, allowing a community to collectively combat it together. It will also reduce health care costs for treating it by utilizing a group-based format with individual components. This individual component also allows these participants to take control of their life, giving them the sense of accomplishment.

With your financial help, we can help minimize the presence of this disease in the community. Through the implementation of this program, we can create a more cohesive, supportive, and positive environment for not only those affected by depression, but also for their families and future generations of the population.

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