# Research proposal: effects of exercise on patients with depression

Data collection, analysis, evaluation, dissemination of results, and conclusion of evidence based practice project.

Data collection

The PICOT question for the research proposal is this: In female patients ages 18-35 seeking treatment for depression, would an exercise regimen that includes 3 days per week of 1 hour weight training and 2 days per week of 1 hour cardio, lower scores on the Beck Depression Inventory test by at least 10 points after 6 months of starting exercise regimen when compared to female patients ages 18-35 not on the exercise regimen? The participants will be referred by five local area primary care physician offices over a period of 6 months. They must be female ages 18-35 and be seeking treatment for their depressive symptoms. Patients will be able to ask questions in a private, quiet area regarding the length and terms of the trial and signed, informed consent will be obtained. After obtaining informed consent, patients will individually fill out an initial Beck Depression Inventory (BDI) in paper form. The BDI will take about 10 minutes to complete. Participants need to have a fifth-sixth grade reading level to understand the questions. The BDI has a high level of internal consistency with alpha coefficients of . 86 for psychiatric patients and . 81 for non-psychiatric patients (American Psychological Association, 2019).

Along with the BDI survey, participants will be asked demographic data including age, yearly income, employment status, and marital status. This will ensure reliable and valid results. Surveys will be collected from a large, random sample to increase the likelihood that responses will be reflective of

a larger population. The BDI can have a rating of zero to over 40. The associated level of depression with each score is as follows: 1-10 normal ups and downs; 11-16 mild mood disturbance; 17-20 borderline clinical depression; 21-30 moderate depression; 31-40 severe depression; and over 40 would be considered extreme depression. Data collection points will be measured and a positive result will be documented when a patient scores 10 points or more lower than their initial score on a six month follow up self reported BDI.

The length of time for data collection will be 18 months. There will be a six month period of enrollment into the study. Participants will be placed on their exercise regimen at their initial visit. Participants are expected to adhere to the exercise regimen of five days per week for six months. Once the final participants complete the six month exercise regimen, the data collection will end and analysis of results can begin. The source of data will come from the patient's self reported BDI. Each patient will have two BDI's. One from the start of the trial and one at the completion of their 6 month exercise regimen.

A method that is useful in enhancing quality data is to consider if the results are accurate by looking for bias. Bias can occur unintentionally and may be the result of interventions not being followed accurately or an error in the sample (Chamberlain University, 2019). A second way to enhance quality is making sure to research something that is clinically significant. Making sure to meet the key elements of quality data: credibility, dependability, confirmability, and transferability, will ensure that the data being used can be put into practice on a larger scale (Limpert, 2011).

Analysis

Descriptive statistics is summarizing and organizing data in way that can be understood. This evidence based practice proposal will use descriptive statistics to explain data. Results from the quantitative design will be simplified so all of the data from the start of the exercise trial to the end of the trial will be made useful to stakeholders. Individual BDI's will be calculated looking for a 10-point or more decrease on their depression rating after the prescribed six month exercise regimen. If there is a 10-point decrease in the BDI, exercise will be considered a successful treatment or adjunct treatment for patients suffering from depression and seeking help from their primary care physician. Using inferential statistics, the sample population data will be inferred to a larger population of women seeking treatment for depression. This can be done due to large sample size and long period of data collection (Bradley, 2016).

Evaluation

To objectively determine if the outcomes are positive, the results must be carefully critiqued. Making sure no bias is present in samples is key. BDI's that are not completely filled out or participants that have missing personal data will have to be disregarded and not used when calculating final results. Having a large enough sample of women from multiple primary care physician offices involved will make for a more reliable outcome. Some variables to be examined are age, BMI, and race. Distribution of data will be marked on a graph chart. A P-value will be created using an inferential

statistic. The P-value can then be compared against the level of significance which will be 0. 05 (Simpson, 2015).

The evidence based practice proposal will have positive outcomes for key stakeholders. The primary care physician offices treating patients for depression will likely see a decrease in depressive symptoms in their patients who go on an exercise regimen. The Substance Abuse and Mental Health Services Administration (SAMHSA) is another key stakeholder. This is a government agency that works to improve treatment services to patients in need. Patient's who have positive outcomes from the exercise regimen will no longer need resources for SAMHSA.

When the exercise regimen is implemented, nursing practice will be improved. Number one, patients will be treating their symptoms holistically. They will not only benefit from decreased depressive symptoms but gain multiple other known health benefits from exercise, one being improved cardiovascular function (American Heart Association, 2019). Another benefit to nursing practice when patients are on the exercise regimen is freeing up time for nurses to see new patients. A patient that is not getting relief of depressive symptoms needs to be seen multiple times per year. Once a patient has better relief of symptoms, they will be able to manage better on their own.

Dissemination of Results

The project will be shared to stakeholders through the use of powerpoint slides. A luncheon will be held at each primary care doctors office participating in the use of exercise to treat their patients for depression. The

powerpoints will be colorful and use pie and graph charts to share unbiased results. Action plans will also be offered to increase likelihood of positive patient outcomes.

The results and action plan will be shared in the future practice of mental health nurse practitioners. Posters will be hung in offices with simple exercise techniques and motivational quotes. This will encourage patients to take control of their own well-being and health. Powerpoints will be shared at national conferences and with government agencies to encourage national change.

Conclusion

Patients seeking treatment for depression need more than to be prescribed medicine. They need a holistic level of care and treatment to maximize their quality of life. Stakeholders, including primary care offices and government agencies, can play an important role in improving patient outcomes. Fist, the evidence based practice study needs to be conducted using a quantitative approach. Females ages 18-35 will fill out BDI questionaires at the start of the exercise trial and again at the end of the exercise regimen. Data will be collected over a period of six months. Using descriptive statistics, data can be put into a useable and understandable form that will be useful to nursing practice. Patients will not only likely have decreased depressive symptoms but will experience other known health benefits from regular exercise such as improved cardiovascular health. Along with education and quality research, nurse practitioners can improve patient's symptoms of depression with exercise.

# References

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