Mental Illness/Health/Disorders, Treatments, and Outcomes

Caroline Parks

Department of Psychological Sciences, Auburn University

PSYCH 2140: Research Methods

Dr. Elaina Frieda-Siepmann

April 21, 2023

Mental Illness/Health/Disorders, Treatments, and Outcomes

The most significant risk factor for suicide is mental illness, which affects more than 90% of those who take their own lives (Navaneelan, 2012). In a world where mental illness is such a common struggle, the general population needs to be aware of its relevance, as well as the different treatments that are offered to aid mental illnesses. With this being said, the bigger question at hand is which of these treatments results in the most positive outcomes? An awareness of the use of exercise or medication as a treatment for mental illness may help those affected by mental illnesses find a treatment that is best for them. The purpose of this research paper is to dive into the past literature associated with exercise and medication treatments and the different benefits that result from each one. It will explore the effects that exercise and medication have on mental illness, assess the differences in the positive outcomes resulting from each treatment, and determine which treatment patients feel had a more positive impact.

Mental illness is an ongoing, and often overlooked hardship that can affect anyone regardless of race, gender, or age. Almost 50% of Americans have encountered a mental illness at some point in their lives. Conclusions from the National Comorbidity Survey Replication indicate that 50% of people with mental illnesses began experiencing symptoms before the age of 14, and 75% were suffering by the time they were 24 (McNally, 2012). Given that young adults frequently experience mental illness, it is critical to have a thorough understanding of such a broad subject, whether this involves general knowledge, stigmas, or mental health disparities. Safran et al. (2009) notes that a Harris Interactive and American Psychological Association survey says that 25% of US inhabitants lack sufficient access to mental health care. Considering the immense gap between those with mental illness and those with access to adequate treatment,

exercise is one treatment that everyone affected by mental illness has access to, regardless of the disparities.

While the abundance of research towards the improvement in mental illness treatment continues, exercise is a well-known factor in the enhancement of one's well-being, benefitting more than just mental illness. Mizzi et al. (2022) state that individuals with post-traumatic stress disorder (PTSD) have shown that participation in physical activity can assist different negative psychological symptoms. In another study, Bernstein et al. (2019) state that exercise may act as a barrier against lingering depressive states. In another study (Mizzi et al., 2022), she also notes the effectiveness of aerobic activity in treating Major Depressive Disorder symptoms, and that they are even comparable to the effects of anti-depressant medication. Exercise seems to have a large effect on many different psychological disorders, including Generalized Anxiety Disorder (GAD) and Panic Disorder, resulting in the reduction of anxiety for both. Not to mention, the tremendous physical advantages exercise provides, such as a lower chance of obesity or cardiovascular disease (Mizzi et al., 2022). Additionally, exercise can be customizable to each individual patient's needs. The application of various workout programs adapted to client demands has been shown to directly improve one's well-being (Callaghan, 2004). While exercise is an effective, customizable, and beneficial treatment in aiding mental illness, another form of treatment that is commonly used throughout the mental health community is medication.

Moving on to my next area of focus, prescribed medication is another form of mental illness treatment that is heavily used throughout the world. Medication can be used to aid a number of different issues, including anxiety, attention deficit hyperactivity disorder (ADHD), depression, and many others. Considering the variety of different medications that can be taken, and the toll they can take on one’s well-being, it is important to be educated on what you are

taking, and how it will affect you personally. For example, tryciclin antidepressants have been known to be toxic to cognitive function, while selective serotonin reuptake inhibitors (SSRIs) have demonstrated to have a minimal impact on cognitive function (Hindmarch, 1998). The recently discovered use of ketamine as an antidepressant is in a rapid state of research. Ketamine has shown to consistently reduce depressive symptoms after a single subanesthetic dose, outperforming the active comparator midazolam (Ioenscu & Papakostas, 2017). Additionally, they studied other medications including Riluzole, Lanecimine, and Rapastinel, which have resulted in reduced symptoms of depression and anxiety. In a study focussing on the effect of stimulant medication in children with ADHD, it was found that the medication had a significant effect on the children's academic productivity. With this being said, the use of stimulant medication could be used to improve a child's ability to comprehensively work in a classroom setting (Pelham et al., 2022). The abundance of research we have regarding the different kinds of medications used to aid mental illness opens up a world of opportunities and customizable treatment options for patients suffering from differing issues.

Exercise and Medication are two important ways to help mental illness. Several meta-analyses have been conducted to analyze the literature on exercise anxiety in the past to further our understanding of the connection between exercise and psychological illnesses (Petruzello et al., 1991). Additionally, copious amounts of studies have been done examining the effects that medication also has on mental illness. My study will address the gap in literature that fails to compare the outcomes of exercise and medication directly. My intention is to give a definite answer on which exercises patients should partake in order to improve their mental health the most, or, provide patients with a treatment medication that is not only beneficial but is not accompanied with a laundry list of negative side effects. Overall, My research will only be

focused on the outcomes of exercise and medication, providing those with mental illness a definite and accurate form of treatment that is not overwhelmed with negative reactions.

The goal of my research project is to compare the effects of exercise and medication and identify which one patient's perceive to have a greater positive impact. I am interested in further examining the specifics of exercise and research of medication and how both of these factors can create the most beneficial treatment for people with mental illness. Based on prior research, I hypothesize that exercise will have a more positive impact in aiding clinical patients with mental illness.

Method

Participants

This sample includes 500 young adult men and women ranging from the ages of 17-25. These participants all suffer from a mental illness or disability and choose to help their illness through medication or exercise. These participants will be chosen from a local medical clinic. Flyers will be placed in a medical clinic, and patients will be questioned by their doctors asking them questions about their age, mental illness/disability, and how they choose to help their illness/disability. Then the anxiety levels of the different groups will be tested and results will be gathered from each group in order to determine who has the lowest anxiety levels. The participants who use medication and the participants who use exercise are evenly sampled, 250 each. This sample included 70% women and 30% men. Participants were 65% white, 30% black, 4% Asian, and 1% other races. There is a fair amount of diversity here in Auburn, so the only deviance would include the slightly higher percentage of women in the sample. Searching for participants outside of Auburn would be far more difficult because a college town would have a

higher percentage of young adults with mental illnesses. Responses enabled the classification of 2 groups, (1) exercise aid and (2) medication aid.

Materials

Assessment of anxious qualities

After the patients partake in their anxiety-reducing treatment (exercise or medication), the patients are asked to rate the anxiety that they feel. The State-Trait Anxiety Inventory (STAI) test was administered to the patients (Julian, 2011). This was first published in 1970 and revised in 1983. This is a self-report scale to measure patients' current anxiety symptoms, their intensity, and their tendency to experience anxiety in general. It is administered with paper and a pencil in an individual format. The first subscale, known as the State Anxiety Scale (S-Anxiety) measures the participant's current state of anxiety, measuring subjective tension, nervousness, worry, and arousal of the autonomic nervous system. The second subscale, the Trait Anxiety Scale (T-Anxiety), measures how prone each participant is to anxiety, evaluating calmness and security.

Response to subject matter

The S-Anxiety scale responses evaluate the strength of present anxiety "at this moment": 1) Not at all, 2) a little, 3) considerably, and 4) greatly. The T-Anxiety scale responses measure the frequency of anxiety "in general" 1) almost never, 2) occasionally, 3) frequently, and 4) nearly constantly. The STAI has 40 items, 20 for each subscale. The score is calculated by adding the item scores and should be reversed for items not related to anxiety. A higher score (ranging from 20-80) indicates higher levels of anxiety. Initial development test-retest reliability values ranged from 0.31 to 0.86, with intervals spanning 1 hour to 104 days. Alpha coefficients were quite high. The majority of the STAI items were chosen from other anxiety measures based on

significant correlations in order to optimize content validity. The STAI and these 2 measurements had overall correlations of 0.73 and 0.85 (Julian, 2011).

Procedure

Before the completion of the anxiety level test, participants were asked by their doctors a series of questions regarding their age, gender, and mental illness/disability. This information is important so we can take into consideration any confounding variables that could affect the outcome. Next, the participants will be asked to continue with their daily tasks, including the act of exercise or anxiety-reducing medication. After the participants continue with their normal day including either exercise or taking medication, they will scale their anxiety using the State-Trait Anxiety Inventory test. A computer will randomly assign the order of the participants. Each session will be about 10 minutes and detailed guidelines are provided for each of the S-Anxiety and T-Anxiety subscales (Julian, 2011). The test will be administered by the clinical doctors but remains a self-report test. Participants will be tested in a non-anxiety-inducing room (quiet, friendly) in Cary Hall on Auburn University's campus.

References

Bernstein, E. E., Curtis, J. E., Wu, G. W. Y., Barreira, P. J., & McNally, R. J. (2019). Exercise and emotion dynamics: An experience sampling study. *Emotion*, *19*(4), 637-644. https://doi-org.spot.lib.auburn.edu/10.1037/emo0000462

Callaghan, P. (2004), Exercise: a neglected intervention in mental health care? *Journal of Psychiatric and Mental Health Nursing*, *11*(4), 476-483. https://doi.org/10.1111/j.1365-2850.2004.00751.x

Hindmarch, I. (1998), Cognition and anxiety: the cognitive effects of anti-anxiety medication. *Acta Psychiatrica Scandinavica*, *98*(s393), 89-94. https://doi.org/10.1111/j.1600-0447.1998.tb05972.x

Ionescu, D., Papakostas, G. (2017), Experimental medication treatment approaches for depression. *Transl Psychiatry*, *7*(e1068), https://doi.org/10.1038/tp.2017.33

Julian, L. J. (2011). Measures of anxiety: State-Trait Anxiety Inventory (STAI), Beck Anxiety Inventory (BAI), and Hospital Anxiety and Depression Scale-Anxiety (HADS-A). *Arthritis Care & Research*, *63*(S11), S467–S472. https://doi.org/10.1002/acr.20561

McNally, R. J. (2012). What is mental illness?. *Harvard University Press*.

Mizzi, A. L., McKinnon, M. C., & Becker, S. (2022). The Impact of Aerobic Exercise on Mood Symptoms in Trauma-Exposed Young Adults: A Pilot Study. *Frontiers in Behavioral Neuroscience, 16*(829571), https://doi.org/10.3389/fnbeh.2022.829571

Navaneelan, T. (2012). Suicide rates: An overview. *Statistics Canada*.

Pelham, W. E., III, Altszuler, A. R., Merrill, B. M., Raiker, J. S., Macphee, F. L., Ramos, M., Gnagy, E. M., Greiner, A. R., Coles, E. K., Connor, C. M., Lonigan, C. J., Burger, L., Morrow, A. S., Zhao, X., Swanson, J. M., Waxmonsky, J. G., & Pelham, W. E., Jr.

(2022). The effect of stimulant medication on the learning of academic curricula in children with ADHD: A randomized crossover study. *Journal of Consulting and Clinical Psychology*, *90*(5), 367–380. https://doi-org.spot.lib.auburn.edu/10.1037/ccp0000725.supp

Petruzzello, S.J., Landers, D.M., Hatfield, B.D. (1991). A Meta-Analysis on the Anxiety-Reducing Effects of Acute and Chronic Exercise. *Sports Medicine*, *11*(3), 143–182. https://doi.org/10.2165/00007256-199111030-00002

Safran, M.A., Mays, R.A., Huang, L.N. Jr., McCuan, R., Pham, P.K., Fisher, S.K., McDuffie, K.Y., Trachtenberg, A. (2009). Mental Health Disparities. *American Journal of Public Health*, *99*(11), 1962-1966. https://doi.org/10.2105/AJPH.2009.167346