

**Investigation of the Effectiveness of Three Forms of Treatment for Anxiety Disorders:  
Medication, Exposure Therapy, and Interpersonal Therapy**

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## **Abstract**

Anxiety disorders affect many people worldwide and can have significant impacts on people's well-being and ability to function. There are currently various forms of treatment including medication, exposure therapy, and interpersonal therapy (Markowitz et al, 2014; Murrough et al, 2015; Sars & van Minnen, 2015). Each type of treatment represents a different type of approach to treating the anxiety in the patient. Using medication represents a biological approach to treating anxiety which is very effective but may not be sufficient in helping the patient overcome the disorder they are facing. Exposure therapy represents the cognitive behavioral approach to treating anxiety which can be very helpful to the patient because the patient gets experience with facing the anxiety and tolerating it. Interpersonal therapy represents a more relationship oriented approach because it focuses on the patient's emotions and relationships with others (Markowitz, 2014, para. 8). The goal of this study is to examine whether there is a statistically significant difference in patient outcomes between each of the three approaches. To test each treatment, participants will be in a treatment group based on the treatment they are receiving at their provider. They will be given a survey to measure their anxiety and these scores will be added up and analyzed statistically using a Mixed Model ANOVA test. It is predicted that there will be a statistically significant difference between the three treatment groups and the medication group will be the most effective and the interpersonal therapy group will be least effective. The main implication of this study is identifying whether or not there is a difference between the three treatment groups.

## **Introduction**

Anxiety disorders are among the most common types of psychiatric disorders (Markowitz et al, 2014). They are believed to impact a significant portion of the population (Remes et al, 2016, para. 5). Anxiety disorders have also been linked to increased risk of death (Meier et al, 2016). Also, anxiety disorders are found at higher rates in people who smoke (Kutlu & Gould, 2016). Understanding these disorders better and treating them better can improve the lives of many people. Identifying the most effective treatments for anxiety disorders would be very beneficial to many people because of the pervasiveness of these disorders. The question in this study is identifying the most effective treatments for anxiety disorders, which is defined by the outcome of the patient after the treatment. Anxiety generates feelings of worry and fear, which can be overwhelming. Anxiety disorders occur when these feelings are pervasive in one's life and lead to dysfunction.

One of the types of treatment for anxiety disorders is psychotherapy. Psychotherapy can be very effective because it is found to have an effect on the control of neural structures that are related to fear processing (Brooks & Stein, 2015). Exposure therapy is a specific type of psychotherapy where the patient confronts the source of anxiety and is repeatedly exposed to it. "Exposure was further viewed as a credible and attractive treatment option and the respondents saw few barriers to its usage" (Sars & van Minnen, 2015, sect. 33). Exposure therapy is an effective form of treatment and should be used to treat anxiety disorders. For example, social anxiety patients can use exposure therapy to put themselves in situations that require social interaction so they can learn to tolerate the anxiety and, over time, reduce the anxiety. However, we don't know how reliable the self-report measures of anxiety are, which is a limiting factor in

assessing the effectiveness of exposure therapy. Despite this, exposure therapy is viewed as a reliable form of treatment for anxiety (Sars & van Minnen, 2015, para. 42).

Medication is a good form of treatment for anxiety that can supplement psychotherapy. Some of the best medication treatments for anxiety disorders include, Selective Serotonin Reuptake Inhibitors (SSRIs), Selective Norepinephrine Reuptake Inhibitors (SNRIs) and benzodiazepines (Murrough et al, 2015, sect. 18). Benzodiazepines in particular have been shown to be effective in the treatment of anxiety (Bandelow et al, 2017). However, these medications have considerable side effects including nausea, diarrhea, headache, insomnia, somnolence, and sexual dysfunction in SSRIs (Murrough et al, 2015, Table 1). SNRIs have the same side effects as SSRIs along with hypertension and benzodiazepines can cause somnolence, cognitive problems, appetite change, and fatigue (Murrough et al, 2015, Table 1). Medication is a valuable tool in treating anxiety disorders but is not always the best form of treatment because of the side effects associated with them.

There are other existing forms of psychotherapy such as interpersonal psychotherapy that can be used to treat anxiety (Markowitz, 2014, para. 4). Interpersonal psychotherapy does not involve patients confronting the source of the anxiety and getting experience with tolerating the anxiety-producing stimulus. Instead it focuses on understanding one's feelings in interpersonal situations and how it reflects the nature of the patient's symptoms and illness (Markowitz, 2014, para. 10). Exposure therapy is a different treatment approach because it directly exposes the patient to the source of anxiety. It is also different from medication treatment because medication treats the underlying physiological basis of the anxiety. "it showed no advantages relative to competing anxiolytic psychotherapies, and was found inferior to outpatient CBT in one generally well-designed social phobia trial and one less rigorous panic disorder trial." (Markowitz et al,

sect. 11). Interpersonal psychotherapy has not been shown to have the advantages of exposure therapy or medication. However, it could still be used as an alternative to the other forms of therapy to give the patient more options when deciding which treatment approach to use.

Anxiety disorders have a large impact on many people. The question in this study is finding out what treatments are the most effective and reliable in treating anxiety disorders. If each of the types of treatments is tested then I hypothesize there will be a statistically significant difference in treatment outcome between medication treatment, exposure therapy treatment, and interpersonal therapy treatment. To measure the effectiveness of each treatment, participants who have been diagnosed with an anxiety disorder will be monitored while receiving treatment for their disorder. Their outcome will be measured by a survey that they take before their treatment starts, after 1 month, after 2 months, and after 3 months. Having a greater understanding of these disorders and better treatments can help a lot of people. These types of disorders are very disabling and if we can effectively treat them then we can allow people to live more fulfilling lives.

## **Methods**

### **Participants**

About 1,000 participants will be needed for the study and the participants will be divided into three groups: the medication group, the exposure therapy group, and the interpersonal therapy group. Both male and female participants will be included in the study. The prevalence of anxiety disorders is about twice as high for women as it is for men (Donner and Lowry, 2013). Thus, it is likely that there will be a higher number of participants who are women compared to the number who are men. The participants will be recruited from various psychological and psychiatric treatment centers and each participant will be required to have a

diagnosis of Generalized Anxiety Disorder (GAD), Panic Disorder, Specific Phobia, or Social Anxiety Disorder (Social Phobia) (Remes et al, 2016, para. 13). Each participant will be assigned a group based on what type of treatment they are participating in with their provider. Patients receiving a combination of treatments will not be included in the study. Each participant will be compensated \$50 for participating in the study. Before each participant begins the study, they will sign an informed consent form that describes what the study will require of them and any risks associated with participating in the study.

## **Materials**

Each participant will be in a treatment condition according to what treatment they are receiving: medication treatment, exposure therapy, or interpersonal therapy. Each participant will be given a survey after every month of treatment for three months to measure the participant's level of anxiety. The Beck Anxiety Inventory (BAI) will be used to measure the participant's anxiety (Rose, 2014 & Devine, Table 1). A higher score on the survey indicates a higher level of anxiety. The item contains 21 items (Rose & Devine, 2014, Table 1) addressing anxiety in the patient and includes questions such as "Indicate how much you have been bothered by ... fear of dying ... during the past month" (Rose & Devine, 2014, p. 197-211). This survey is overall a good measure of anxiety but focuses on somatic symptoms such as heart rate which is a potential limitation of the survey because it might not include some of the psychological aspects of anxiety such as fear (Rose & Devine, 2014, Table 1). The data generated from the surveys will be analyzed and organized by the R programming language, which is designed to analyze statistical information.

## **Procedures**

The participants will be recruited from treatment centers including hospitals and outpatient facilities and each of the prospective participants will be required to have a diagnosis of Generalized Anxiety Disorder (GAD), Panic Disorder, Specific Phobia, or Social Anxiety Disorder (Social Phobia) (Remes et al, 2016, para. 13). After the participants are recruited they will sign an informed consent form that includes information about what they will be required to do for the study and what the risks of participating in the study are. Then participants will be monitored in their progress while receiving treatment. This study will occur over a three month period and each participant will be given a survey, the BAI (Rose & Devine, 2014), to measure their symptoms of anxiety. The surveys will be conducted using a computer so they will be able to take the survey wherever they want. Participants will be assigned a group based on what type of treatment they are receiving: medication treatment, exposure therapy treatment, or interpersonal therapy treatment. Patients receiving a combination of treatments will not be included in the study. The independent variable for the study is treatment type (medication, exposure therapy, or interpersonal therapy) and will be self-reported by the patient. The dependent variable for the study is the treatment outcome score which will be measured by the score on the survey. The score on the survey will be calculated by adding up the reported scores on each of the items in the survey to generate a total score for the survey. These methods and procedures will allow us to determine whether treatment type is related to a change in treatment outcome.

## **Results**

The purpose of the statistical analysis of the results is to compare the three means of the participant's outcomes and see if there is a statistically significant difference between the

three groups. If each of the three treatment types is tested then I hypothesize that there will be a statistically significant difference between the three treatment groups. To analyze the results of the study, a mixed model ANOVA test will be used to measure how treatment type is related to treatment outcome over 4 time points, one at the beginning of the study (0 months), one after 1 month, one after 2 months, and one after 3 months. I expect to see a statistically significant difference in treatment outcome between the three groups. Therefore, the obtained F statistic will likely be larger than the critical value and the null hypothesis will be rejected and therefore there will be a statistically significant difference between the three treatment groups. The medication group will most likely have the best outcome, the exposure therapy the second best, and interpersonal therapy the worst. From this data, we will be able to conclude whether there is a statistically significant difference between the means of the three treatment groups over time. This is valuable information because we will then be able to report whether further studies can be done to determine which treatments are best. If the result is that there is not a statistically significant difference between the means, then it would indicate that the difference in outcome between the three groups is small.

### **Discussion**

The purpose of the study is to see if there is a statistically significant difference between the outcomes of three different types of treatments for anxiety disorders: medication treatment, exposure therapy treatment, and interpersonal therapy treatment. If we test all three of the types of treatment then I hypothesize that there will be a statistically significant difference between the outcome scores of the three treatment types. The medication treatment will have the best outcome, exposure therapy will have the second best outcome

and interpersonal therapy will have the worst outcome. The expectation is that the mixed model ANOVA test will result in a statistically significant result. Thus, we will be able to conclude that there is a statistically significant difference between the means of the treatment groups. This means that not all of the treatment types have the same relationship between the treatment and its outcome. We expect that the data found in the study will fit with the hypothesis because we expect to find that the mixed model ANOVA test will result in a statistically significant result.

This study adds to previous work done regarding the treatment of anxiety disorders because it provides a direct comparison of the effectiveness of three different treatments for anxiety disorders. If there is no statistically significant difference between the three treatment groups then it would mean that none of the treatments have different outcomes, which unlikely based on previous work. This study would provide support for the study on exposure therapy because there is evidence that it is effective (Sars & van Minnen, 2015), and the study on medication treatment of anxiety because the use of SNRIs, SSRIs, and benzodiazepines have been shown to be effective in treating anxiety (Murrough et al, 2015). It also might provide further evidence that interpersonal therapy is not as effective as the other two treatment types (medication treatment and exposure therapy) because it has only been shown to be effective in treating mood and eating disorders (Markowitz et al, 2014). If our hypothesis is supported then it would allow for further investigation of the nature of the differences between each treatment group. This study would advance understanding of treatment for anxiety disorders because it directly compares three treatments for anxiety disorders and can potentially give additional support for the continued use of medication treatment and exposure therapy.

A follow-up study should examine which treatment has the best outcome when combined with the other forms of treatment. This would be useful because it could help provide support for certain combinations of treatments. The results of our current study test will determine whether or not certain treatments have a statistically significant outcome. For example, medication treatment is considered to be superior to interpersonal therapy (Markowitz, 2014). However, if we find that the difference between the three treatment groups is not statistically significant then it would challenge the idea of medication being superior to interpersonal therapy (Markowitz et al, 2014). This research is important because anxiety is very prevalent and affects many people (Markowitz et al, 2014). If we can have a greater understanding of the effectiveness of treatments for anxiety then we can improve the lives of many people. This study has the potential to provide further support for treatments that are known to be effective such as exposure therapy (Sars & van Minnen, 2015) and also can provide new findings about the effectiveness of interpersonal therapy (Markowitz et al, 2014). Some limitations of the study are the reliability of the self-report measure, and the how accurately the survey measures anxiety. Some participants may not report how they are feeling accurately and the survey may not fully capture all the symptoms related to anxiety.

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