

# Single-system design essay sample



**ASSIGN  
BUSTER**

## Abstract

The paper summarizes a single-system design aimed at improving the participant's score on the Clinical Assessment of Anxiety through the intervention of meditative breathing. A baseline of three weeks was measured followed by four weeks of treatment phase. During the treatment phase, the participant completed meditative breathing exercise three times daily for five days each week. The participant completed the Clinical Assessment of Anxiety each Friday of the treatment phase. The results indicated improvement in the scores, however the participant's score never got below the clinical cutting score of 30.

**Meditative Breathing for the Treatment of Anxiety** The purpose of this paper is to present the findings from an experiment that examined the effectiveness of meditative breathing on the participant's clinical level of anxiety.

## Anxiety

Mood and anxiety disorders are among the most common psychiatric disorders noted in the clinical setting. About 5% of U. S. adults experience generalized anxiety disorder at some point during their lifetime, and about 3% have it in any given year (Toneatto & Nguyen, 2007). Some ways anxiety manifests in persons who suffer from it are gastrointestinal symptoms, sleep disturbances, changes in eating patterns, muscle aches and pains, increased irritability, shortness of breath, and difficulty concentrating (Zinn et al., 1992). Another common symptom of anxiety is racing thoughts, which often stems from difficulty concentrating. A person with a clinically high level of

anxiety may not be able to maintain focus on a present task due to his or her fleeting thoughts of future responsibilities needing attention.

Studies have shown that there is a genetic component in persons who are diagnosed with anxiety disorders; however, research also strongly suggests that a person's environment, particularly a consistently stressful one, can influence his or her anxiety level in a negative way (Zinn et al., 1992).

With the increased frequency anxiety is being diagnosed, treatments for the disorder are also being researched and implemented among those experiencing anxiety. Some common forms of treatment for anxiety disorder include cognitive behavior therapy, exposure therapy, medication therapy, exercise, journaling, stress-reduction techniques, hypnosis, and meditation (Annesi, 2005).

Over the past several years, meditation has received increased attention from researchers focusing on alternatives to medication for persons with anxiety.

**Meditative Breathing** Over the past 20 years, meditation has established a place among common forms of treatment for a wide array of physical and psychological health problems. Meditation has been found to be effective with chronic pain, quality of life, stress reduction, and anxiety disorders (Murphy, 2006). Zinn, et al. noted in one study that meditation is effective in reducing anxiety symptoms, and maintain the reduction. The author further noted that due to the nature of the study it suggested strong generalizability to nonstudy participants (1992).

Meditation is similar to other anxiety reduction techniques in that it teaches people to relax, decrease intrusive thoughts and/or obsessive thinking, and enhance focus and performance. The ultimate goal of meditation leads towards participants having a relaxed, focused state of mind that allows them to then interact with the world in an efficient and calm manner (Murphy, 2006). With the newfound calmness, the person can then refocus his or her energy on the present rather than what may or may not happen in the future and/or any obsessive thoughts they are having; thus meditation is often helpful in reducing racing and/or obsessive thoughts that interfere with the completion of present-moment tasks (Murphy, 2006).

The literature to substantiate continues to increase as researchers and patients alike seeks alternative to medication for treating anxiety.

Meditation is especially useful in then clinical setting, and applicable to a wide participant base, due to the absence of spiritual/religious language and its compatibility with other interventions (Murphy, 2006). Meditation is also appropriate in treating anxiety since persistent symptoms of anxiety, and depression, often reflect deficiencies in coping that meditation techniques often have a positive effect on (Toneatto & Ngyuen, 2007).

Meditative breathing is specific form of meditative that has been found effective in treating symptoms of anxiety (Vukovic, 2003). Meditative breathing is essentially taking a few minutes to stop and focus on the rising and falling on your breath. A person will do the activity for a specified time limit or number of breaths. The goal is for the person to clear his or her mind of all thoughts unrelated to their breathing. Through this process the person

is said to be ‘centering’ themselves and disengaging from stressful distractions such as racing and/or obsessive thoughts (Murphy, 2006).

Meditative breathing is effective in treating anxiety for several reasons. First, meditative breathing reduced the person’s heart rate and therefore has a positive effect on the physiological symptoms of anxiety. Second, meditative breathing is convenient and practical in that it can be performed in any location and takes little time to complete. Third, initial results are immediate-producing an instant calm when performed. Lastly, it can be combined with other treatment modalities (Vukovic, 2003).

For these reasons, meditative breathing was chosen as the appropriate intervention strategy to combat anxiety.

### Methodology

The participant’s target problem was her social anxiety. The intervention chosen was meditative breathing. The objective of the experiment was to significantly reduce the participant’s anxiety through the use of meditative breathing done three times a day. Meditative breathing was assigned three times a day in order to combat the three most stressful times of her day, in the morning before leaving for school, during her lunch hour, and before going to sleep.

The meditative breathing exercise included 5 minutes of deep breathing during which time the participant would 1) remove herself from distractions (phone, peers, television, radio, etc.), 2) sit in a comfortable position, 3) breath deeply in and out for a total of 5 minutes paying close attention to the

rise and fall of her breath and focusing her thoughts on her breathing. During the periods of deep breathing the participant would try and block out intrusive and/or racing thoughts.

This exercise was completed at approximately the same times each day based on the participant's school and work schedule.

The construct of anxiety was measured by the Clinical Anxiety Scale (CAS). The CAS was an appropriate measure for this experiment since it measures specific events or situations that typically induce anxiety for the person (Nugent, Sieppert, & Hudson, 2001). It is appropriate since the participant's anxiety is identified as social anxiety, specifically induced by the thought of being around large groups of people, particularly in the school setting. The CAS has produced scores with a .90 or higher reliability, and is evidenced to have good content and construct validity.

The CAS consists of 25 questions and has a clinical cutting score of 30, indicating that a person with a score over 30 most often has a clinically significant problem with anxiety (Nugent et al. 2001). The CAS is also an effective measurement tool since it utilizes reverse questioning. The design used for the experiment was the basic single-system design, the AB design. This design was used since it was feasible to gather a baseline measurement, and then implement the treatment phase; however a baseline was not re-measured after the treatment phase. The use of the AB design was helpful in increasing the power of the single-system design and providing a compelling argument for the interventions effects on the target problem.

The AB design was also chosen in order to continue to provide a positive intervention to the participant. Studies with meditation indicate that the effects rarely wane after prolonged periods, and often times the effectiveness remains steady, if not increasing (Zinn, et al., 1992). With this knowledge, it was decided to complete an AB design, unless the meditation produced an adverse affect on the participant's level of anxiety, in which case the intervention would be withdrawn. However, unless negative results were indicated by the participant's score on the CAS, treatment would not be discontinued.

The baseline was three weeks in length, measured two consecutive Fridays before the participant began intervention. The measurement used was the Clinical Anxiety Scale. The intervention phase lasted Monday-Friday for four weeks. The participant completed the meditative breathing exercise three times each day, Monday-Friday, for the four weeks. In order to monitor the effect of the intervention on the participant's anxiety, she completed the Clinical Anxiety Scale at approximately the same time each Friday throughout the intervention phase.

The participant's scores were calculated by a second-party who was not made aware of the meaning of the score, or the clinical cutting score. The participant did not read the scale between measurement times, nor did she see her scores until after completing the scale for the final time. These steps were taken in order to decrease the threat to internal validity.

## Results

At the end of the seven week experiment, the scores were put into a table (1. 1) and then graphed (1. 2) in order to interpret the results.

Table 1. 1: Measurement of Anxiety (on CAS) During Meditative Breathing

Intervention Week 1 (Baseline) 2 (Baseline) 3

(Intervention) 4 (Intervention) 5 (Intervention) 6 (Intervention) 7 (Intervention) Score

on CAS 36 34 34 33 32 31 31 Measurement of Anxiety (score on CAS) during

Meditative Breathing Intervention Baseline Intervention While the scores do

show a decrease during the intervention phase, the clinical significance is

difficult to determine. This is due to a few reasons. First, the scores declined

before treatment was initiated, with a jump from 36 to 34 before the

participant began meditative breathing. Second, the scores never dipped

below the clinical cutting score of 30, indicating that the participant was still

at risk for significant anxiety symptoms at the end of the experiment.

However, a good indication that the intervention was having an impact on

the problem was that the scores steadily declined, and the last score

measured was 31, much lower than the initial 36. Also, there was no overlap

in the scores, which is indicative of efficacy of the intervention since at least

the participant's score did not increase during the intervention phase.

Although the participant's score never got below the clinical cutting score of

30, the weighted average trend was . 7. This shows a strong positive

correlation between the intervention and outcome. Again, coupled with the

fact that there was no overlap and that the scores were steadily moving in

the expected direction are all indicators that the intervention did have an

impact on the problem.



## Discussion

Many factors came into play during this experiment. Environmental factors such as midterms and family stressors influenced the participant's overall level of anxiety, regardless of the influence of the intervention. The participant completed the assigned intervention each day at approximately the same time, and for the same amount of time each session- adding to the likelihood of environmental factors influencing the outcome. Still, the overall effectiveness of meditative breathing for treatment of the participant's anxiety was demonstrated through the steady decline in the participant's score on the CAS throughout the intervention phase, and the participant's willingness to continue with the intervention. It was an easy to follow intervention technique that produced positive effects on her anxiety without negative drawbacks, thus enhancing its usefulness for the average participant.

## References

Annesi, J. (2005). Changes in depressed mood associated with 10 weeks of moderate cardiovascular exercise in formerly sedentary adults. *Psychological Reports, 96*, 855-862.

Murphy, M. (2006). Taming the anxious mind: An 8-week mindfulness meditation group at a university counseling center. *Journal of College Student Psychotherapy, 21*, 5-13.

Nugent, W., Sieppert, J., & Hudson, W. (2001). *Practice Evaluation for the 21st Century*. Belmont, CA: Wadsworth.

Toneatto, T., & Nguyen, L. (2007) Does mindfulness meditation improve anxiety and mood symptoms? A review of the controlled research. *Canadian Journal of Psychiatry*, 52, 260-266.