

Rx Nature: Nature Therapy for the Reduction of Affective Condition Symptoms

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BACKGROUND

In a study done by the Department of Industrial and Systems Engineering at Texas A&M, they found that 71% of students reported high stress and anxiety due to the COVID-19 outbreak and 82% of the students surveyed had “increased concerns on academic performance” (Son et al., 2020). Yorgason et al., found that only one-third of college students were adequately informed about their college’s mental health services, and that a significant number of college students who were mentally distressed did not seek treatment (2010). Additionally, mental health services employing psychotherapy are expensive and often inaccessible. Meditation and mindfulness techniques can effectively reduce stress and symptoms of depression in a solitary setting (Batchelor, 2011). Mindfulness is centered around self-awareness and acceptance which can facilitate transformation. Meditation uses self-regulation practices meant to train attention and awareness in order to have greater voluntary control over mental processes. By comparison, Pearson and Craig (2014) assert that as little as ten minutes in a natural environment can “capture attention while simultaneously eliciting feelings of pleasure”. Beyer et al. associated greenspace exposure with reduced symptoms of anxiety and depression in a study of working American adults (2014). There has been additional research into the concept of Nature-Deficit Disorder which refers to the greater incidence of mental and physical health problems as connection to nature diminishes further and further (Gladwell et al., 2013; Godbey, 2009). For the purposes of this research, greenspace will be calculated across the full extent of Washington County as defined by geographic information system (GIS) boundaries and zonal statistics (Taylor & Hochuli, 2017). These areas will range from recreational parks to zones of undeveloped wilderness. Nature therapy will refer to time spent in a greenspace for the direct purpose of recreation or relaxation, which excludes paid outdoor labor. This project addresses the empirical question to what extent does greenspace exposure via nature therapy moderate symptoms of anxiety and depression in college students compared to meditation and mindfulness practices.

Empirical Question

To what extent does greenspace exposure via nature therapy moderate symptoms of anxiety and depression in college students compared to meditation and mindfulness practices?

PROPOSED METHOD

Participants

Convenience sampling will occur on the Pacific University campus from the undergraduate population, using email solicitation, in-class announcements, social

media, and word-of-mouth. We anticipate a sample of 75 participants with the mean age of 20 years old. There are no exclusionary criteria, except that participants must be 18 years of age.

Materials

The materials for this study include a standard demographic measure as well as the following published, cited measures: **Beck Anxiety Inventory (BAI)** is a 21-item self-report instrument for measuring the severity of anxiety in adolescents and adults. (Beck, 1993). **Beck Depression Inventory (BDI)** is a 21-item, self-report rating inventory that measures characteristic attitudes and symptoms of depression. (Beck, 1996).

Design and Procedure

Participants will be convenience sampled and randomly assigned to three different conditions; our control group who will not change their outdoor exposure (n=25), a comparator group that seeks mindful meditation in a comfortable space indoors (n=25), and the experimental group that spends half an hour of time in greenspaces per day (n=25). The duration of our research will last a week and will be conducted during the school year. Every participant will be given an informed consent and asked to fill out a pre-posttest survey to assess their levels of anxiety, depression, and loneliness. From the data collected from the pre-posttest survey, appropriate statistical analysis will be completed.

PROPOSED RESULTS

We will be interpreting our data using two separate 3x3 analyses of variance, one for the Beck Depression Inventory scores and one for the Beck Anxiety Inventory scores as they relate to our 3 treatment conditions. Afterwards we will also be running a Tukey’s Honestly Significant post-hoc test in order to determine effect size estimates for the treatment conditions. Finally, we will run two independent analyses of covariance to look at our expected covariates of gender and time previously spent in nature.

CONCLUSION

We expect to find that greenspace exposure will be associated with significant decreases in symptoms of anxiety and depression, perhaps even above that of mindfulness meditation. This will provide a cheap and easy method of increased mental wellness, especially during the COVID-19 pandemic. Students are more stressed, and access to traditional therapeutic mental care is often restricted. One confounding variable of this study could be participants’ access to greenspace. Further research could be done focusing on how greenspace may lead to more social engagement, and greater mental wellbeing overall because of it.

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