

The Elicitation of Relaxation and Interoceptive Awareness Using Floatation Therapy in Individuals With High Anxiety Sensitivity

Justin S. Feinstein, Sahib S. Khalsa, Hung-wen Yeh, Obada Al Zoubi, Armen C. Arevian, Colleen Wohlrab, Marie K. Pantino, Laci J. Cartmell, W. Kyle Simmons, Murray B. Stein, and Martin P. Paulus

ABSTRACT

BACKGROUND: Floatation-REST (Reduced Environmental Stimulation Therapy), an intervention that attenuates exteroceptive sensory input to the nervous system, has recently been found to reduce state anxiety across a diverse clinical sample with high levels of anxiety sensitivity (AS). To further examine this anxiolytic effect, the present study investigated the affective and physiological changes induced by Floatation-REST and assessed whether individuals with high AS experienced any alterations in their awareness for interoceptive sensation while immersed in an environment lacking exteroceptive sensation.

METHODS: Using a within-subject crossover design, 31 participants with high AS were randomly assigned to undergo a 90-minute session of Floatation-REST or an exteroceptive comparison condition. Measures of self-reported affect and interoceptive awareness were collected before and after each session, and blood pressure was measured during each session.

RESULTS: Relative to the comparison condition, Floatation-REST generated a significant anxiolytic effect characterized by reductions in state anxiety and muscle tension and increases in feelings of relaxation and serenity ($p < .001$ for all variables). Significant blood pressure reductions were evident throughout the float session and reached the lowest point during the diastole phase (average reduction >12 mm Hg). The float environment also significantly enhanced awareness and attention for cardiorespiratory sensations.

CONCLUSIONS: Floatation-REST induced a state of relaxation and heightened interoceptive awareness in a clinical sample with high AS. The paradoxical nature of the anxiolytic effect in this sample is discussed in relation to Wolpe's theory of reciprocal inhibition and the regulation of distress via sustained attention to present moment visceral sensations such as the breath.

Keywords: Anxiety, Blood pressure, Floatation-REST, Floating, Interoception, Mindfulness, Novel intervention, Relaxation response

<https://doi.org/10.1016/j.bpsc.2018.02.005>

Anxiety sensitivity (AS) refers to one's fear of experiencing anxiety-related symptoms and sensations, especially those arising from within the body (1). Individuals with high AS often believe that these sensations can lead to adverse consequences, such as death, insanity, or social rejection. Such catastrophic misinterpretations make AS an anxiety amplifier; individuals with high AS are easily alarmed by anxiety-related sensations, and exposure to such sensations often further intensifies their anxiety (1). For this reason, AS has been referred to as a fundamental fear distinct from derivative ones such that the fear of anxiety can provide a motive for avoiding any stimulus likely to incite anxious symptoms (2). Consequently, most cases of chronic anxiety—including panic disorder, agoraphobia, generalized anxiety disorder, social anxiety disorder, and posttraumatic

stress disorder—also feature high levels of AS, making AS a core construct underlying the initiation and maintenance of pathological anxiety (3,4).

Recent evidence suggests that reducing AS may be important for the prevention and treatment of anxiety across diagnostic categories. Prospective studies have shown that AS is a strong predictor for the onset of mood and anxiety disorders and the development of spontaneous panic attacks (1,5,6), whereas longitudinal studies have shown that individuals with high AS have a propensity for greater chronicity of illness and a higher likelihood of experiencing future anxiety symptoms (3,7,8). Controlled studies have shown significant reductions in AS following successful treatment with psychotherapy (9) or pharmacotherapy (10), and several transdiagnostic treatments have been developed to specifically target AS using different forms of

interoceptive exposure (11–14). Taken together, this evidence supports the notion that AS is a fundamental driver of anxiety, and treatments that target AS have the potential of helping patients overcome anxiety regardless of their specific anxiety diagnosis (11).

Our laboratory has recently started to investigate a novel intervention for anxiety that may be beneficial for patients with high levels of AS. Referred to as Floatation-REST (Reduced Environmental Stimulation Therapy), the procedure entails floating supine in a shallow pool of water saturated with magnesium sulfate (Epsom salt). The float experience is calibrated so that sensory signals from visual, auditory, olfactory, gustatory, thermal, tactile, vestibular, gravitational, and proprioceptive channels are minimized, as are most movement and speech. Prior research investigating Floatation-REST has mostly focused on healthy populations, with the most consistent finding being decreases in indices of stress and increases in relaxation as measured from before to after the float session (15,16). Thus far, there has been only one controlled study in participants with clinical anxiety, and the findings showed significant reductions in self-reported symptoms of generalized anxiety following 12 sessions of Floatation-REST that was maintained at 6-month follow-up (17). In a recently completed open-label study (18), we recruited a sample of 50 anxious and depressed participants spanning a range of different anxiety and stress-related disorders (including posttraumatic stress disorder, generalized anxiety disorder, social anxiety disorder, panic disorder, and agoraphobia). Participants underwent a single 1-hour session of Floatation-REST, and overall the procedure was well tolerated, with no major safety concerns or adverse events. Regardless of diagnosis, the float experience induced a strong short-term reduction in state anxiety and a substantial improvement in mood. A subgroup analysis revealed that the participants with the highest AS experienced the greatest reduction in anxiety. To follow up on these findings, the current investigation recruited participants with high AS from the initial open-label study to complete a more intensive protocol that included both a comparison condition and concurrent measurement of blood pressure (BP), a key index of the relaxation response (19). Since other transdiagnostic treatments targeting AS feature manipulations that enhance exposure to interoceptive sensations (11–14), we were also interested in exploring whether the float environment altered interoceptive awareness, a construct that surprisingly has not been formally investigated in prior studies of Floatation-REST despite initial anecdotal reports of enhanced cardiac awareness (20) as well as initial experimental evidence of enhanced cardiac control (21). We hypothesized that by removing exteroceptive sensation, Floatation-REST would enhance awareness for interoceptive sensation.

METHODS AND MATERIALS

All study procedures were approved by the Western Institutional Review Board, and all participants provided written informed consent prior to participation. The trial was registered on [ClinicalTrials.gov](https://clinicaltrials.gov) (<https://clinicaltrials.gov/show/NCT03051074>),

and this study is part of a larger project examining the subjective, physiological, and neural effects of Floatation-REST.

Participant Recruitment and Randomization

The current protocol used a within-subject crossover design. Participants who met specific inclusion and exclusion criteria (see [Supplemental Table S1](#) and [Supplement](#)) were randomly assigned ([Supplemental Figure S1](#)) to complete either a 90-minute session of Floatation-REST (referred to as the float condition) or a 90-minute session of an exteroceptive comparator (referred to as the film condition) that entailed watching a nature documentary from the BBC *Planet Earth* series (22). After completion of one condition, participants crossed over to the other condition approximately 1 week later (average time between conditions was 8 days), with both conditions scheduled to occur at the same time of day for each participant. The randomization sequence was predetermined using a 1:1 allocation ratio, and the study used an open-label design with no blinding or concealed allocation. More details about the Floatation-REST intervention and the exteroceptive comparator can be found in the [Supplement](#).

Measures

All self-report measurements were administered electronically to participants via an electronic tablet (Apple iPad). Survey measures were obtained using REDCap (Research Electronic Data Capture; www.project-redcap.org), a secure web-based application for electronic collection and management of research and clinical trial data. Three different types of self-report measures were administered (see [Supplement](#) for specific details about each measure): baseline measures, before and after session measures, and interoceptive measures. The baseline measures assessed each participant's current symptoms and level of functioning during the time period of the study. The before and after measures were collected at two time points, approximately 30 minutes before and after each float or film session, to assess state-related changes in anxiety [primary outcome measure: change score on Spielberger State Anxiety Inventory (23)] and relaxation. At each time point, participants rated how they felt "right now, in the present moment." In contrast, the interoceptive measures were aimed at gathering retrospective data about how participants felt during the actual float or film experience. Participants also completed a short debriefing interview with the experimenter at the end of the float condition to gather more qualitative information about the float experience and assess for adverse reactions. Finally, BP was measured at 10-minute intervals during each float or film session using a wireless and waterproof setup (see [Supplement](#)).

Statistical Analysis

Change scores were computed for all before- and after-session measures, and most analyses were focused on between-session contrasts of the change scores. To be consistent with the range of scores (0–100) on the visual analog scale, each participant's raw score for state anxiety, serenity, and interoceptive attention was first converted into

Download English Version:

<https://daneshyari.com/en/article/8814478>

Download Persian Version:

<https://daneshyari.com/article/8814478>

[Daneshyari.com](https://daneshyari.com)