

Szypłowska Małgorzata, Kuś Adrian, Gładysz Konrad, Neścior Małgorzata, Szpiech Kamil. Beneficial health effects of treatment with flotation-REST on anxiety, muscle tension pain, depression and sleep quality. *Journal of Education, Health and Sport*. 2019;9(8.S):129-134. eISSN 2391-8306. DOI <http://dx.doi.org/10.5281/zenodo.3370424>
<http://ojs.ukw.edu.pl/index.php/johs/article/view/7249>

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part B item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eISSN 2391-8306 7

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The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 05.07.2019. Revised: 25.07.2019. Accepted: 18.08.2019.

Beneficial health effects of treatment with flotation-REST on anxiety, muscle tension pain, depression and sleep quality

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Abstract

Restricted environmental stimulation therapy (REST) is a method where all the external stimuli are restricted and it is used to relieve stress, anxiety and depression, as well as improving sleep quality. During a session of flotation-REST a patient is lying face-up in a tank filled with high-buoyancy water, allowing the patient to float comfortably on the surface. The tank reduces the external stimulation and allows to achieve a state of deep relaxation. It has many potential health benefits, including reduction of stress, anxiety and depression. A few studies suggested its positive effects on sleep quality too.

The purpose of this paper is to evaluate potential positive health effects of flotation-REST. Flotation-REST treatment decreased the degree of stress, anxiety or depression, whereas the patients' optimism and sleep quality were significantly increased. The results also

indicate that the most severe perceived pain intensity was significantly reduced, however low perceived pain intensity was not influenced by the floating technique.

It was concluded that flotation-REST has beneficial effects on decreasing stress, anxiety, depression and pain, therefore the method has potential as a complementary treatment of these. However, more studies are warranted to further evaluate the treatments efficacy.

Keywords: flotation tank, flotation, flotation-REST, REST, relaxation, stress, anxiety, pain, health

Introduction and purpose

Restricted environmental stimulation therapy consists of two main treatments: chamber-REST and flotation-REST. During both of these, the patient's external stimuli are restricted to minimum. In chamber-REST, the subject is placed in a dark, quiet chamber, whereas during flotation-REST they are immersed in a tank filled with water. Thanks to its high-buoyancy, the patient is floating easily on the surface and not drowning. The water has the temperature of a human body to further reduce any stimulation from the outside. This paper concentrates on flotation-REST and does not discuss chamber-REST technique. A standard flotation-REST session has duration of 45 minutes to 1 hour. It allows to achieve a deep relaxation state and subsequent positive health effects.

Description of the state of knowledge

In this article beneficial health effects of flotation-REST and its potential as an effective mean to achieve relaxation are investigated. Multiple positive effects were reported over time, for example reduction of stress and subsequent relaxation, reducing the state of anxiety and alleviating chronic muscle tension pain, diminishing depression and increasing quality of sleep. Side effects of the treatment are also discussed in this paper.

Anxiety and muscle tension pain

Contemporary society, living in urban centers, experiences fast pace of life which has a negative impact on health. Increased needs and omnipresent competition have severe consequences on physical health, social life and psychological well-being [1]. Sped-up society is more susceptible to stress and therefore disorders related to it. Stress increases incidence of somatic diseases, such as coronary heart disease or diabetes [2, 3], two of the leading causes of death in modern world population [4]. Along with somatic disorders, stress has negative consequences on mental health and predisposes to depression and anxiety, the diseases that likewise heighten the risk of mortality [5,6]. Elevated tension level, which can be caused by stress or anxiety, may contribute to occurrence of the muscle rigidity and subsequently chronic pain.

In consequence, it seems that de-stressing by the use of relaxation methods in today's society seems all the more important. Flotation-REST appears to be a promising mean of relieving stress. Several studies have debated the effect of flotation treatment on stress-related disorders, including anxiety and muscle tension pain. Study including thirty-one participants with one or more anxiety disorder has proven that after first floating session state of anxiety is significantly reduced and state of relaxation increased. Compared to the control group, who watched a nature documentary, the magnitude of these changes was significantly higher in the floating group. Feeling of relaxation may have contributed to decreased muscle tension in the floating group, reduction of tension most endured in the back. On the contrary, the film condition has not experienced changes in muscle tension [7]. In the group of healthy patients' similar results were acknowledged and twelve sessions of flotation-REST have significantly decreased their degree of anxiety [8]. Another open-label study tested fifty participants with a

wide range of anxiety or stress-related ailments, opposed to previous studies conducted on healthy participants. After a single one-hour session of flotation-REST all fifty participants reported reduction of anxiety as well as significant decrease in stress, muscle tension pain, depression and negative affect. Subsequently, their mood improved and levels of serenity, relaxation, happiness, positive affect, overall well-being, energy and feeling refreshed and peaceful increased. The positive results were observed in every participant regardless of sex or medication status. The largest effect occurred in patients with most severe anxiety-related disorders. The latter finding is interesting in particular, as those with the most severe anxiety tend to be the most treatment-resistant. It is suggested that flotation-REST can be effective and potentially beneficial for those affected by severe stress- or anxiety-related problems. Nearly three-quarters of participants stated that they achieved more relaxation after the treatment with flotation-REST than after the use of other relaxation methods [9]. Flotation-REST provides a safe and relaxing environment, therefore enabling patients to achieve state of relaxation without other resources [10]. It can be an effective tool in treating anxiety disorders in patients with whom other methods have failed. General Anxiety Disorder (GAD) is a common disorder characterized by excessive, uncontrollable and often irrational worry about events or activities [11] for at least 6 months [10]. The most common secondary diagnosis is depression [12]. GAD is one of the most treatment-resistant anxiety disorders [10]. Complementing pharmacological and nonpharmacological treatment, flotation-REST has been proven an effective intervention for GAD. In one study twelve sessions of flotation-REST therapy were run on fifty-nine participants, which showed decrease in GAD-associated symptomatology, as well as pathological worry, followed by increased mindfulness. This implicates that flotation-REST can be a complimentary treatment for GAD [13]. Increased stress and anxiety state induce increase of muscle tension which may lead to chronic pain. Thirty-seven patients participated in a study that was to prove if flotation-REST can be an effective mean to treat muscle tension pain. They were all sufferers from chronic pain, most aching in the neck and back area. Nine sessions of floating-REST were performed. For a normal pain intensity, no differences were found before and after treatment, while the control group experienced more pain afterwards. Patients with pain intensity at its worst have experienced less severe pain after the floating treatment, with no changes observed in a control group. They have reported feeling of well-being and relaxation. Anxiety and depression were decreased and optimism increased. The feeling of relaxation and reduction of tension were both the reason for reducing tension pain and the result of such. This study suggests that flotation-REST is an interesting mean to alleviate intense pain [14]. Many studies confirmed that flotation-REST has positive effects on muscle tension pain, as mentioned above. However, none of them has taken into consideration the possible interfering effect of attention-placebo. How much the muscle tension pain alleviation was caused by flotation-REST, rather than the effect of attention-placebo was investigated in a Swiss study. The group of thirty-two patients with stress-related muscle pain were recruited to the study. The experimental group received half of the attention for six weeks and the control group obtained high attention during twelve weeks. They were all treated to twelve flotation-REST sessions. 78% of participants of both groups experienced positive effects on muscle tension pain with its decrease or complete elimination and it was showed that the reduction of pain was independent of attention-placebo. Since the attention has insignificant or no ramification on flotation-REST effect on muscle tension pain, it can be concluded that its beneficial effects come from achieving relaxation response mentioned before through the psychological and hormonal changes. Flotation-REST appears to be an excellent treatment for pain related to muscle tension [15]. The same conclusion was drawn in the study conducted on sixty-five participants who were treated to a total of twelve flotation-REST sessions. The only difference was that the participants had no chronic pain, however experienced pain in some

areas of their bodies. After the treatment, the worst pain diminished significantly. Low-intensity pain was not affected. A possible reason for those results is that high-intensity pain may be stress-related, whereas low-intensity pain is usually not related to muscle tension [8].

Depression and sleep quality

Depression has become a serious problem and a major concern for global public health. It has exploded in the modern world in the last generation and today affects one in twenty people across the world, with the rates of prevalence carried on up constantly. Both developing and developed countries are severely impaired by the disorder. The symptoms of depression include low mood (sadness, pessimism, low self-esteem, lack of self-confidence), lack of energy (psychomotor retardation and apathy), inability to experience pleasure and circadian rhythm disorders, mainly insomnia. The patient's quality of life is negatively affected and as so is their functioning and performance impaired. That's why depression is now considered the leading cause of disability worldwide [16,17]. Sleep deprivation is a significant risk factor for depression and increases risk of depression syndromes [18,19]. Major depression in turn decreases quality of sleep [19]. Depression is associated with higher risk of hypertension, coronary heart disease and diabetes [20]. Treating depression consists of medications (e.g. selective serotonin reuptake inhibitors) and psychotherapy (e.g. cognitive behavioral therapy), however some patients with depression do not experience positive therapeutic outcome [21]. Flotation-REST seems like a valuable tool for diminishing depression. After twelve sessions of flotation-REST depression was reduced significantly in the group of sixty-five healthy participants, while their optimism increased [8]. Flotation-REST enhances positivity and well-being which may be a contributing factor to reduction of depression symptoms. Lower level of stress and anxiety leads to relaxed mood, therefore increasing quality of sleep. Sleep quality was significantly improved in the flotation-REST group [8]. After three months of floating sleep latency is statistically and clinically decreased in patients with sleep disorders, however after one-week and one-month follow-up no such improvements had been found [22].

Side effects and controversies

A thorough research was conducted on side effects of the flotation-REST treatment in 2018. Only 4% of the participants decided to end the session earlier than the prescribed 60 minutes, with one exiting the session after 48 minutes and the other one after 22 minutes due to the itching back, caused by formerly invisible small lacerations of the skin. Almost half of the participants who accomplished the one-hour session said they wanted to stay in longer, nearly one third was satisfied with the amount of time prescribed and every fifth was ready to get out ahead of the end of treatment. After the session, participants completed a 43-item side effect checklist. The positive effects of treatment outbalanced the negatives, despite there being twofold as many negative options as positive ones listed in the side effects checklist. The top 10 reported side effects were rated positive, with most common being "a feeling of total serenity and peacefulness", "total relaxation of the body without any muscle tension" and "feeling completely refreshed, like a reset button was hit". Occasional dry mouth and itchiness were most marked negative effects. There were also a few instances of potentially negative effects described by participants as positive, e.g. "feeling detached from the world" or "racing thoughts", but also visual hallucinations were reported, described as "visual lights and color, very pretty and relaxing", with no participant experiencing those hallucinations branding them negative [9].

Summary

Restriction of external environmental stimulation during the session of flotation-REST allows a patient to achieve a state of relaxation and can be used as a potential therapy to stress-related diseases. Flotation-REST has a similar impact on treating stress-related ailments, such as anxiety, as methods already in use. Anxiety, muscle tension pain, depression and sleep quality are positively affected by the treatment with flotation-REST. This method should be considered a complimentary treatment to stress- and anxiety related problems, including GAD. Reducing the state of anxiety may also lead to beneficial effects on muscle tension pain, which decreases after the flotation session. Flotation-REST diminishes depression and increases optimism. Sleep quality is significantly improved after the treatment. To summarize, it was concluded that flotation-REST has beneficial effects on decreasing stress, anxiety, depression and muscle tension pain, however more studies should be conducted to further evaluate the efficacy of this treatment.

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