

Is Sound Therapy the Key to Efficiency Stress Management?

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Synopsis

The use of biofeedback in stress management has been documented for many years, but the use of sound therapy is still under investigation. Considering that the current literature data on the combination of biofeedback with sound therapy at the same time are poor, we tried to investigate their effectiveness in improving anxiety manifestations. Our results seems that this combination has a positive effect in the management of stress.

Introduction

According to the international references for biofeedback and the clinical practice the most complete definition is *Technique through which a function of the body, which is unconscious, is perceived by the patient, with visual and audio messages, which are directly proportional with the various states of this function* (S. Stathopoulos - I. Souretis, 1994), ¹

The Association of Applied Psychophysiology and Biofeedback rated that therapy as efficacious for anxiety (level 4 on a scale of 1 - 5 with 5 being the best). ²

Whether it is Mozart or Mikis Theodorakis, music affects us all in different ways, but on a fundamental level, music is just organised sound. Sound therapy deconstructs music into pure sound, harnessing the knowledge that sound can have a powerful effect on our emotions. On the other hand, the brainwaves states that incorporate Beta, Alpha, Theta, and Delta frequencies at different levels with one frequency dominating at any given time determines our “state of mind.”

Our brain as responds to vibrations from rhythmic sounds, the using a Brainwave Synchronizer, can help our brain to mimic the frequency that comes through the headphones. In this way, we can entrain or guide our brain into different states, even shifting our state of consciousness.

According to Huang TL, et al the psychological effects of brainwave entrainment interventions protocols should be clearly defined and the relationship between session frequency/ duration and outcomes should be explored, ³ and Bin Yu et al there is a significant interaction effect between music and biofeedback on the improvement of heart rate variability, ⁴

For all the above we tried to investigate the combination of biofeedback with sound therapy at the same time for improving anxiety manifestations.

Methodology

30 persons (15 men and 15 women) with a self-assessment of their stress through the www.psychoscopis.eu were studied with the following proceedings:

1. Zung self-assessment score: 60-74 (marked to severe anxiety levels)
2. One physiotherapist
3. Same room
4. Constant temperature (23 °C) and luminosity



5. All the session at 18, 00 to 20, 00
6. Sound therapy software
7. Idem headphones
8. SPR biofeedback

The participants are divided in 3 groups as well:

Group A, consisted of 5 men (mean age 43 years), with a mean score of Zung self-assessment: 70.60 in the first session and 5 women (mean age 42.58 years) with a corresponding Zung self-assessment mean score: 69.80 in the first session, in which 15 sessions SPR biofeedback of 20 minutes each, were administered for 3 times a week

Group B, consisted of 5 men (mean age 43.60 years), with a mean score of Zung self-assessment: 70.20 in the first session and 5 women (mean age 42.60 years) with a corresponding Zung self-assessment mean score: 70.60 in the first session, in which 15 sessions of sound therapy (ALPHA waves at 9hz) of 20 minutes each, for 3 times a week, were applied

Group C, consisted of 5 men (mean age 43.40 years) with a mean score of Zung self-assessment: 70.80 in the first session and 5 women (mean age 43.40 years) with a corresponding Zung self-assessment mean score: 70.20 in the first session, in which 15 sessions of SPR biofeedback & sound therapy (ALPHA waves at 9hz), were applied simultaneously, 20 minutes each, for 3 times a week

All data were analyzed using IBM SPSS v28 statistical software, with quality variables in the form of frequencies and percentages and quantitative variables based on their mean \pm standard deviation (mean \pm SD).

The variables were compared with the Student's T-test and the correlation between the variables was investigated.

Results

There was a statistically significant improvement of group C compared to groups B and A (48 ± 2.3 vs 54.6 ± 0.5 vs 53 ± 2 $p < 0.001$).

From the above, it results that the combination of SPR biofeedback & sound therapy (ALPHA waves at 9 Hz) at the same time, has positive results in the more effective management of stress

Discussion

We hope that our research will trigger further efforts in this direction so that the improvement of anxiety manifestations becomes short, without dependencies and side effects.

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Study Limitations: All the participants were adults and had at the Zung self-assessment score: 60-74

Ethical Approval: not required, cause was self-employed research

Informed consent: the statement of informed consent taken from the patient was in Greek language and included:

- Describe the subject population
- Explain how you will recruit subjects into the research (including when and where recruitment will be conducted and methods of recruitment (e.g., flyers, email, social media, face-to-face)
- Identify where the research will take place (i.e., the location of the research)
- Briefly describe the research procedures that will be conducted with subjects, including a description of the data collection methods and any research interventions
- Explanation of the purposes of the research and the expected duration of the subjects' participation

- Description of the procedures to be followed
- Description of any reasonably foreseeable risks or discomforts to the subject
- Statement that participation is voluntary

Competing Interests: none

References

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