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The psychological influence of optical stimulation on reduces Generalized Anxiety Disorder (GAD) and increase power of concentration

Abstract

According to a national study of Comorbidity America is reported that one out of every four diagnostic criteria for at least one anxiety disorder and 12month prevalence of this disorder is 17.7 percent. Women with a lifetime prevalence of 30.5% compared to men with the prevalence of lifetime anxiety disorder may be 19.2%. In medicine, intermittent photic Stimulation is a form of visual stimulation used in conjunction with electroencephalography to investigate anomalous brain activity triggered by specific visual stimuli, such as flashing lights or patterns. Photic stimulation may also be used to elicit myoclonus, especially cortical reflex myoclonus when present in photo-sensitive forms. Because of the relationship between anxiety and concentration on process variables to be both ascending and descending. In this study with using from photic stimulation in two stages clam and emotional, induction (Guided imagery) suggestion (mental imagery), Guided Virtual reality and melody is trying to reduce Generalized Anxiety Disorder (GAD) and increase power of concentration.

Keywords: optical stimulation, generalized anxiety disorder, guided imagery, mental imagery, guided virtual reality and melody

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Introduction

Generalized anxiety disorder is characterized by persistent, excessive, and unrealistic worry about everyday things. People with the disorder, which is also referred to as GAD, experience excessive anxiety and worry, often expecting the worst even when there is no apparent reason for concern. They anticipate disaster and may be overly concerned about money, health, family, work, or other issues. GAD is diagnosed when a person finds it difficult to control worry on more days than not for at least six months and has three or more symptoms. Sometimes just the thought of getting through the day produces anxiety. They don't know how to stop the worry cycle and feel it is beyond their control, even though they usually realize that their anxiety is more intense than the situation warrants. GAD affects 6.8 million adults, or 3.1% of the U.S. population, and 8 million adults, or 5% of the Iran population, in any given year. Women are twice as likely to be affected. The disorder comes on gradually and can begin across the life cycle, though the risk is highest between childhood and middle age. Although the exact cause of GAD is unknown, there is evidence that biological factors, family background, and life experiences, particularly stressful ones, play a role. When their anxiety level is mild, people with GAD can function socially and be gainfully employed. Although they may avoid some situations because they have the disorder, some people can have difficulty carrying out the simplest daily activities when their anxiety is severe. GAD is seen in women twice as much as men. GAD is also common in individuals with a history of substance abuse and a family history of the disorder. Once GAD develops, it may become chronic, but can be managed or eliminated with proper treatment. In a given year, approximately two percent of American adults and European adults experience GAD. Globally about 4% are affected at some point in their life. Photic stimulation may refer to, intermittent photic stimulation as diagnostic procedure and any stimulation involving photons. In medicine, Intermittent Photic Stimulation, or IPS, is a form of visual stimulation used in conjunction with electroencephalography to investigate anomalous brain activity triggered by specific visual stimuli, such as flashing lights or patterns. IPS and EEGs are often used to diagnose conditions such as photosensitive epilepsy. The field is relatively new and the details of use of IPS have not been widely standardized. IPS is often used in conjunction with other controllable generators of visual stimuli, such as low-level visual stimulation LLVS. Photic stimulation may also be used to elicit myoclonus, especially cortical reflex myoclonus when present in photo-sensitive forms. IPS may be used to stimulate the visual system for patients with amblyopia. This system uses a visual stimulus that is usually red in color with a frequency of about 4Hz to stimulate the neural pathway between the retina and the visual cortex. The objective is to improve the visual acuity of an amblyopic (lazy) eye. In this study, two groups of 30 testable were used for experimental and control.

Materials

1. Fluorescent red light with a wavelength of 610nm (dark Red).
2. Fluorescent blue light with a wavelength of 450nm (Royal Blue).
3. LED white light for pulse and exposure time of 4 to 10 seconds.
4. Mirrors 30cm in 30cm to reflect light in the environment.
5. Using the right set for induction and suggestion.
6. GAD-7 test, ring toss, Darts, Rubik and nerves instruments.
7. Virtual reality headset for create Guided virtual imagery.
8. SPSS software.

Methods

The methods will be described in 6 sections: A: Optical Stimulation; B: Gentle Melody; C: Virtual Reality; D: Induction (Guided imagery); E: Suggestion (mental imagery) F: Analyzing the data.

Optical stimulation

Photic stimulation may refer to, intermittent photic stimulation as diagnostic procedure and any stimulation involving photons. In this research, Using Fluorescent red light with a wavelength of 610 nm (dark Red), and Fluorescent blue light with a wavelength of 450 nm (Royal Blue),and LED white light for pulse and exposure time of 4 to 10 seconds, and using Mirrors 30cm in 30cm to reflect light in the environment or visual field subjects.

Melody

Using from Smooth melody and excited melody in optical stimulation psychological section. According to available research on mental relaxation and the impact of this intervention has proven neural plasticity. For example; Parts sad music make sinter beat interval, decrease heart rate, increase in systolic blood pressure and diastolic blood pressure, mean arterial pressure, decrease skin conductance level and decrease finger temperature.[1]

Virtual reality

Virtual reality typically refers to, computer technologies that use software to generate realistic images, sounds and other sensations that replicate a real environment (or create an imaginary setting), and simulate a user's physical presence in this environment, by enabling the user to interact with this space and any objects depicted therein using specialized display screens or projectors and other devices. This is subject Virtual reality used for guided imaginary in induction and suggestion.

Induction (Guided imagery)

Induction can be guided imagery or the equivalent of planting the thought in the minds of the subjects presented. Planting the thought in mind to help participants a virtual reality headset for audio-visual experience when test subjects are stuck defines done.

Suggestion (mental imagery)

Suggestion is the psychological process by which one person guides the thoughts, feelings, or behavior of another. Nineteenth-century writers on psychology such as William James used the words "suggest" and "suggestion" in senses close to—one idea was said to suggest another when it brought that other idea to mind. Early scientific studies of hypnosis by Clark Leonard Hull and others extended the meaning of these words in a special and technical sense.[2]

Analyzing the data

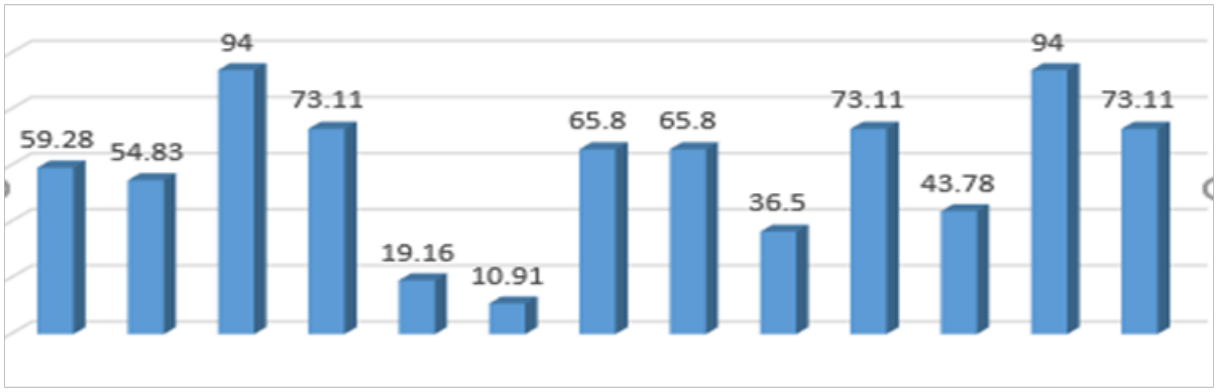
The data are analyzed using SPSS software, for Statistical calculations done (Table 1) (Graph 1).

1. Optical stimulation (LED Red and Blue light) with melody, suggestion and induction for estimate mind power and doing Generalized Anxiety Disorder test with experimental steps.
2. Doing Anxiety practical test, including: ring toss, Dart, Rubik and nerves instruments.
3. Optical stimulation (LED clear light) with Guided virtual reality for visual imagination and suggestion.
4. Using imagination for increase power of mind and concentration and reduce Generalized Anxiety disorder.
5. Doing Generalized Anxiety Disorder test in pre-test for 50 people and selective 30 testable for this experiment and created two group with 15 testable for doing experiment (control and experimental).
6. Optical stimulation (LED clear light) with melody and suggestion for mental imaginary. The duration of this phase is 35 minutes. In this step reflect LED light from mirror.
7. Optical stimulation (Fluorescent blue light) with melody for increase mind power. The duration of this phase is 35 minutes.
8. Optical stimulation (Fluorescent blue light) with melody for increase mind power. The duration of this phase 35 minutes.
9. Doing concentration practical test, including: ring toss, Dart, Rubik and nerves instruments. The duration of this phase 45 minutes.
10. Optical stimulation (Fluorescent Red light) and melody for increase mind power, the duration of this phase 10 minutes.
11. Optical stimulation (Fluorescent Red light) with virtual reality headset for imagination, the duration of this phase 40 minutes.
12. Optical stimulation (LED Red-light) with melody and induction for guided imaginary, the duration of this phase 40 minutes.
13. Optical stimulation (LED clear light) with melody and suggestion for mental imaginary and increase concentration power, the duration of this phase 30 minutes, in this step reflect LED light from mirror.
14. Optical stimulation (LED blue light) with smooth melody and virtual reality headset for increase mind power and concentration, the duration of this phase 35 minutes.
15. Optical stimulation (LED Red light) with melody and induction for guided imaginary and increase mind power in testable, the duration of this phase 25 minutes.
16. Doing concentration practical test, including: ring toss, Dart, Rubik and nerves instruments, the duration of this phase 40 minutes.
17. Optical stimulation (LED clear light) with melody, suggestion and induction for estimate mind power in testable, the duration of this phase 20 minutes in 4 steps with reflect LED light from mirror.
18. Estimate mind power in testable and using virtual reality headset for guided virtual reality. The duration of this phase 45 minutes.
19. Final using virtual reality headset for guided virtual imaginary for increase power of mind and reduce Generalized Anxiety disorder in testable. The duration of phase 35 minutes.
20. Doing Generalized Anxiety Disorder test (GAD-7) in second post-test for 30 testable in two group (control and experimental). The duration of this phase 35 minutes (Figures 1 & 2) (Graph 2 & Graph 3).

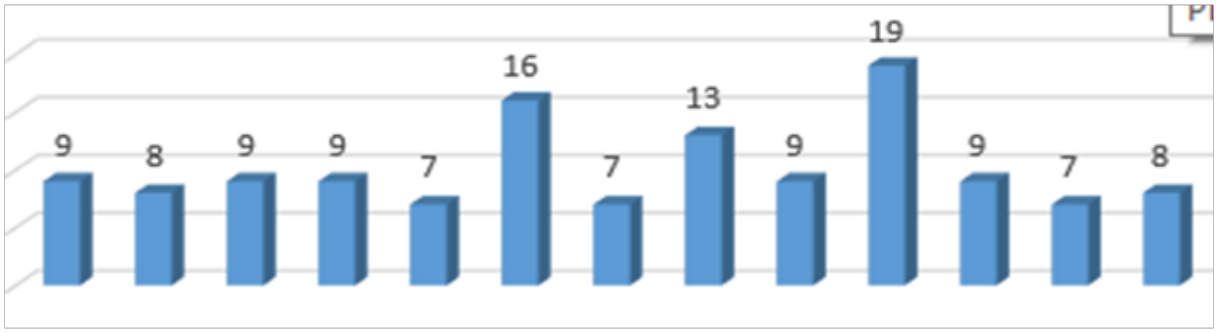
Citation: Olya MKK, sherbaf HRA, Sistani MBN, et al. The psychological influence of optical stimulation on reduces Generalized Anxiety Disorder (GAD) and increase power of concentration. *J Psychol Clin Psychiatry.* 2018;9(6):648–653. DOI: 10.15406/jpcpy.2018.09.00603

Table 1 Average, standard deviation and variance in GAD-7 test

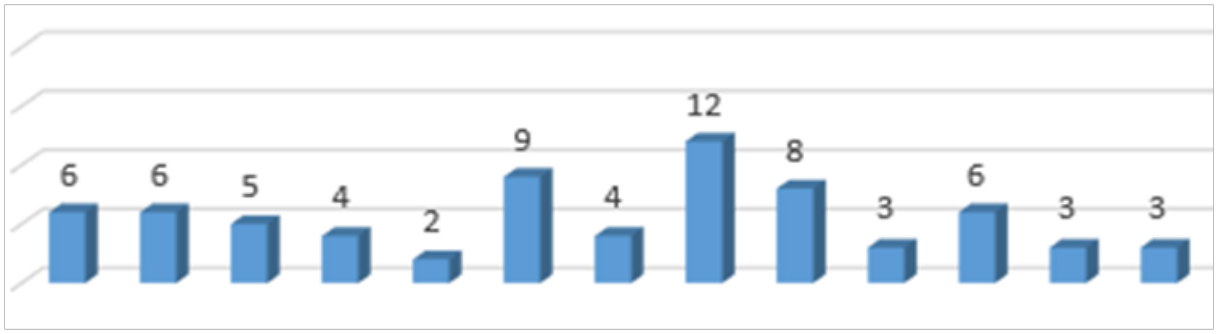
Group	Variable	Pretest			Posttest		
		MD	SD	Variance	MD	SD	Variance
experiment	GAD-7	10	3.72	13.83	5.46	2.85	8.1
control	GAD-7	9.31	1.88	3.57	9.38	2.5	6.27



Graph 1 Concentration efficiency percent for post-test in experimental group.



Graph 2 Generalized anxiety disorder Score in pre-test for experimental group.



Graph 3 Generalized anxiety disorder score in post-test for experimental group.

Results

Results of statistical analysis of this hypothesis have shown that optical stimulation reduces symptoms of Generalized anxiety, The use of optical excitation for the connection between modeling psychology, cognitive neuroscience and psychology first focused on generalized anxiety disorder and concentration power, Based on the questionnaire (GAD-7) Generalized Anxiety Syndrome Scale After treatment, symptoms and anxiety symptoms in all patients who have participated in all the meetings, shows a significant decrease. After treatment, signs and symptoms of increased focus on all patients who have participated in all the meetings show increase significant, Cut-off point in Anxiety are 7 of 21 in this method (Table 2).[3–31]

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Table 2 Society index in experimental group for 15 people

Subject	Age	Degree	Field of study	Contact time (day)	Gender	Marriage
1	33	Under Graduate	Accountancy	65	female	marriage
2	25	Under Graduate	psychology	65	female	single
3	26	Under Graduate	Medicine	66	male	single
4	28	Under Graduate	psychology	70	female	marriage
5	22	Under Graduate	Educational science	67	female	marriage
6	23	Under Graduate	psychology	63	female	single
7	34	Graduate	psychology	63	female	marriage
8	26	Under Graduate	psychology	65	female	marriage
9	20	Under Graduate	psychology	63	female	single
10	25	Under Graduate	psychology	67	female	marriage
11	29	Graduate	Mechanic	66	male	marriage
12	22	Under Graduate	Surgery room	65	male	single
13	25	Under Graduate	psychology	69	female	single
14	21	Graduate	psychology	66	male	marriage
15	28	Graduate	Psychiatry	70	female	single

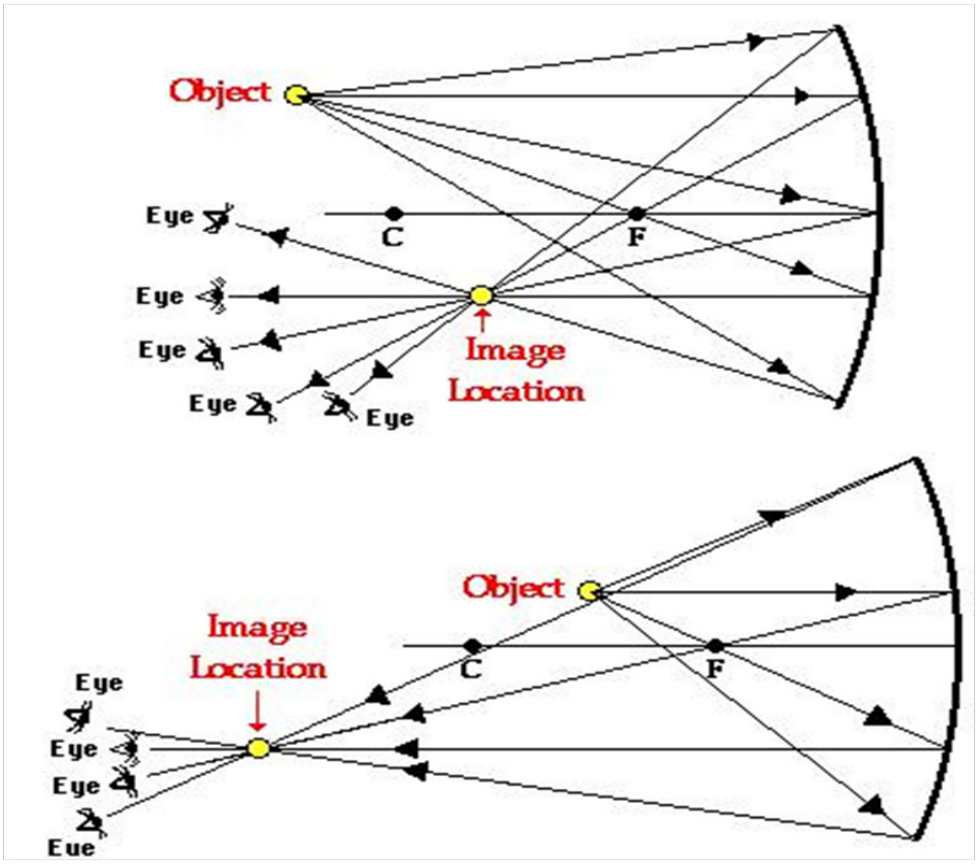

Figure 1 LED light in optical stimulation and light radiation in mirror and reflect to image location and testable eyes.

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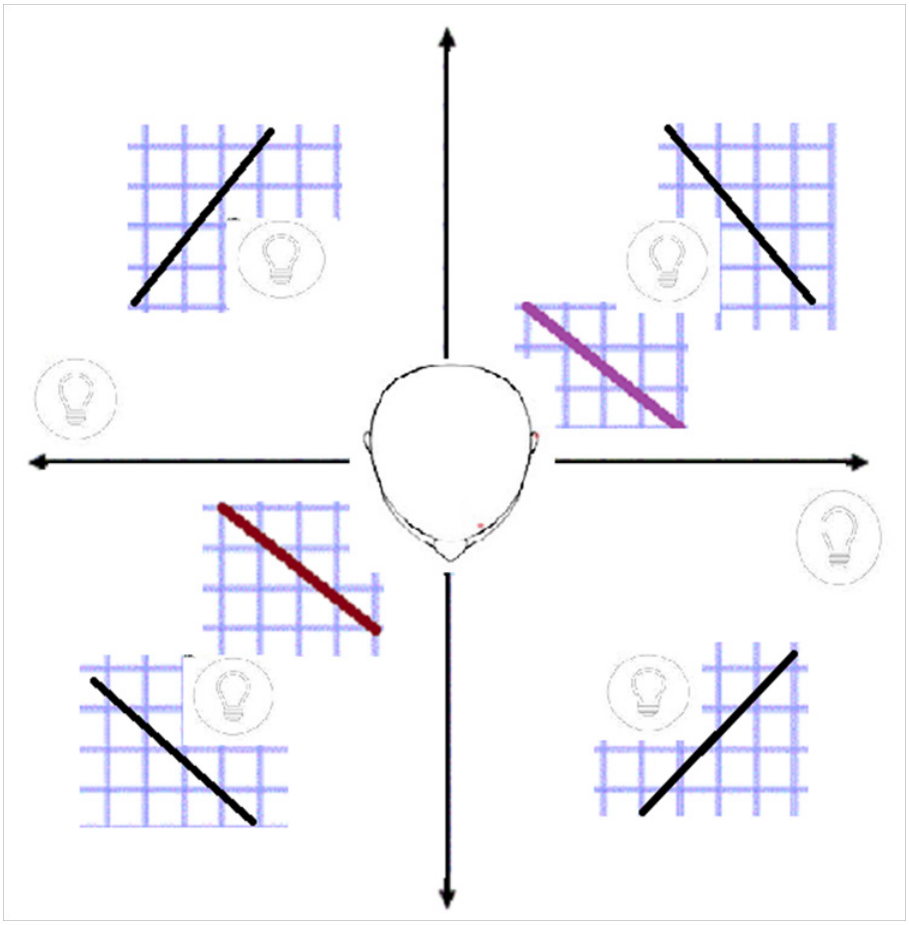

Figure 2 The subjects angle in the experimental environment.

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Conflicts of interest

The author declares that there is no conflicts of interest.

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