

The Effect Of Relaxing A Deep Breath On Anxiety Levels

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Abstract

Emotions and breathing are closely linked in a complex feedback loop. Understanding this interrelationship between breathing and emotions is critical to better understanding how to deal with anxiety, stress, depression, and emotional disturbances. During emotional attacks and anxious states, the autonomic nervous system triggers physiological variables such as heart rate, breathing, blood pressure, hormonal secretions, palpitations, gastrointestinal functions suddenly increase as a result of which the normal social and behavioral functions of the individual are disturbed. It is generally believed that deep breathing, practiced with various techniques, such as qigong and yoga, can promote relaxation. Source searches were carried out on the online portal of journal publications as many as 10 sources from Medscape, Google Scholar, National Center for Biotechnology Information (NCBI) with the keywords anxiety, relaxation, and deep breathing. Deep breathing relaxation has been shown to be effective in reducing the perception and symptoms of anxiety. Deep breathing offers several advantages over conventional therapies currently used to treat anxiety problems. These advantages include a non-pharmacological approach, safety, minimal space requirements, ease of learning, and ease of practice.

Keywords: Anxiety; Relaxation; Deep Breath;

Introduction

Anxiety disorders are the most common type of mental illness in the European Union, Switzerland, Iceland, and Norway (figures for 2010). With a 12-month prevalence of 14% and an estimated 61.5 million affected people, the disease is more common than any other mental illness among people in Europe aged 14 to 65 years. Women are affected two to three times more often than men (Ströhle, Gensichen, & Domschke, 2018, p. 611)

The World Health Organization (WHO) reports that, in 2015, Anxiety disorders rank sixth among all mental and physical diseases in the world, and are the cause of the so-called years of disability, ranking fourth in developed countries; therefore, they are one of the chronic diseases that have the greatest impact on patients' lives. Specific phobias are the most common type of anxiety disorder.

Anxiety is related to fear, manifested as a future-oriented emotional state, composed of complex cognitive, emotional, physiological, and behavioral response systems. These responses are related to preparing for anticipated events or environments that are considered threatening. Pathological anxiety is triggered when there is an overestimation of perceived threat or an incorrect assessment of the danger of a situation leading to an exaggerated and inappropriate response (Chand, Marwaha, & Bender, 2021). Anxiety disorders appear to be caused by the interaction of biopsychosocial factors. Genetic susceptibility interacts with stressful or traumatic situations to produce clinically significant syndromes (Chand et al., 2021). A substantial literature supports clinically important associations between psychiatric illness and chronic medical conditions. Most research focuses on depression, finding that depression can adversely affect self-care and increase the risk of incident medical illness, complications and mortality (Roy-Byrne et al., 2008)

Deep breathing is a basic procedure during meditation practice in individuals involved in yoga and traditional martial arts such as tai chi. Recently, systematic reviews have reported that mind-body exercises (yoga/tai chi) can reduce stress in individuals under high stress or negative emotions by modulating sympathetic-vagal balance (Ma et al., 2017, p. 874). Martarelli et al. It shows that deep breathing increases the antioxidant activity of athletes and reduces the oxidative stress after exercise. Deep breathing may become a non-drug treatment for patients with stress disorders and chronic respiratory diseases. Although many studies have investigated the efficacy of breathing exercises in the treatment of chronic obstructive pulmonary disease (COPD), asthma, postoperative lung function, and cardiopulmonary function in patients after Fontan surgery, DB is effective other disorders, eg cancer, heart failure, and anxiety, remains to be seen. further researched (Hamasaki, 2020, p. 65).

Method

The writing of this article includes various sources originating from scientific journals and government guidelines and related agencies. Subject titles, keyword searches and sources were carried out on the online portal of journal publications as

many as 10 sources from *Google Scholar* and the *Nation Center for Biotechnology Information/ NCBI*, with the keywords "anxiety", "relaxation", "deep breath".

Research Result

Relaxation of diaphragmatic breathing or deep breathing exercises has been shown to be effective in reducing the perception and symptoms of anxiety. Deep breathing offers several advantages over conventional therapies currently used to treat anxiety problems. These advantages include non-pharmacological approaches, safety, minimal space requirements, ease of learning, and ease of practice (Chand et al., 2021)

Discussion

Deep breathing is known to maintain emotional balance, reduce psychological anxiety, remove toxins in the body, reduce body pain, nourish the heart, and help digestion of the digestive organs. Research has shown that deep breathing is a good way to facilitate oxygen supply to mitochondria which are involved in cellular respiration as one of the organelles. Deep breathing can change the movement of the heart by activating the activity of the nervous system by facilitating the supply of oxygen to the body. Modern people are always stressed in complex social relationships and unlimited competition. It is very important for modern people to reduce their stress as long as they can live healthy and disease-free lives. Deep breathing is a very effective method that can be used by everyone to reduce stress (Kim, Bae, & Bae, 2018, pp. 1460–1464)

Stress lowers the human immune system and reduces the ability of the autonomic nervous system to regulate and slow down the activities of various organs. Apart from various physical ailments, stress also causes mental suffering such as dissatisfaction, nervousness, anxiety, anger, frustration, and depression. Deep breathing, also known as hyperpnoea, is known to be a beneficial way of supplying oxygen-deficient bodies. Autonomic nerves that are less able to control because stress affects the heart and changes heart rate (Kim et al., 2018)

Deep breathing has been shown to have a positive impact on various factors such as stress, anxiety, and negative affect in various studies (Toussaint et al., 2021). Cortisol is a glucocorticoid steroid hormone that is released in response to stress. Cortisol release is related to depression, anxiety and other negative emotions. The underlying mechanism may be based on its sensitivity to the activity of the hypothalamic-pituitary-adrenal (HPA) axis, which regulates metabolism, immune, and several mental processing, including memory and emotional judgment. Plasma cortisol levels reflect changes in HPA axis activation with changes in CO₂ inhalation, while salivary cortisol levels have been associated with rapid attentional withdrawal in response to angry faces (Ma, Xiao *et al.*, 2017).

In an experiment conducted in China, 40 healthy participants were recruited to study the effects of deep breathing on concentration, negative emotions, and stress. Participants were randomly divided into a control group and an experimental group. The variables of interest, including attention, emotion, and cortisol, were measured before and after a 30-minute daily treatment for eight weeks. The results showed that during the deep breathing treatment, compared with the control group, the participants increased sustained attention and reduced negative effects and cortisol levels (Toussaint *et al.*, 2021).

Psychological research has shown that breathing exercises are an effective non-pharmacological intervention that can enhance mood, including reducing anxiety, depression and stress (Perciavalle *et al.*, 2017, pp. 451–458). A 1-day breathing exercise was found to relieve emotional exhaustion and depersonalization caused by work burnout. 30 interventions for 5 minutes a day can significantly reduce the anxiety of premature pregnant women. In addition, a similar anxiety effect was observed in a 3-day intervention study in which breathing exercises were performed 3 times a day (Jerath, Crawford, Barnes, & Harden, 2015). Further evidence from randomized controlled trials (RCTs) shows that a 7-day intensive residential yoga program that includes pranayama (breathing exercises) reduces anxiety and depression in patients with chronic low back pain. Supportive evidence also comes from the TCC and yoga RCT lines. At present, breathing exercises are widely used in the clinical treatment of mental illness, such as post-traumatic stress disorder (PTSD), movement disorders, phobias and other stress-related emotional disorders (Ma *et al.*, 2017)

Previous studies have looked at impaired attention/alertness associated with respiratory dysfunction in dementia and impaired breathing during sleep in individuals of all ages. Recent studies have shown that there is a two-way relationship between breathing and attention. More and more clinical studies have shown that meditation including breathing may represent a new non-drug method to improving certain aspects of mindfulness. Mindfulness, for example, contributes to alerting and orientation but goes against monitoring. In addition, 8 weeks of mindfulness-based stress reduction produced a greater effect than 1 month of intensive attention retreat, on the attention-modifying component. Focused mindfulness Meditation is a kind of Buddhist practice, which requires selective attention and breathing. It has been found that three months of concentrated attention meditation can reduce the variability of target tone attention processing and improve the performance of attention tasks. Several studies have investigated simultaneous cognitive and emotional enhancement, and have shown that brief mental training can increase sustained attention and reduce fatigue and anxiety (Chen, Huang, Chien, & Cheng, 2017). Some researchers believe that the relaxation produced by peaceful breathing helps manage symptoms of inattention among children with attention deficit-hyperactivity disorder (ADHD). These

results led to the development of a breath-controlled biofeedback game called ChillFish, which increases children's levels of sustained attention and relaxation (Ma et al., 2017)

Studies oriented to the physiological mechanisms of the effects of respiratory interventions have demonstrated the common physiological basis of breathing, emotions and cognition involves the autonomic nervous system. Physiological evidence shows that even a single breathing exercise can significantly reduce blood pressure, increase heart rate variability (HRV) and oxygenation, improve lung function, and improve cardiorespiratory health and respiratory muscle strength. 15 minutes of breathing exercise a day for 2 consecutive weeks significantly increased the average forced expiratory volume and maximum expiratory flow rate by 1 second. It was found that breathing at a certain frequency and amplitude can alleviate the clinical symptoms of patients with sleep disordered breathing of all ages. Evidence from yoga practice also confirms the decrease in the sympathetic nervous system and the increase in the activity of the parasympathetic nervous system. Assuming that the vagus nerve tone of the heart is part of the common physiological basis of breathing and emotions. It is influenced by breathing and is also an integral part of vagal nerve stimulation which is closely related to the physiological basis of emotion, including emotion regulation, psychological adaptation, emotional reactivity and expression, empathic response, and attachment. In addition, autonomic nervous system dysfunction was observed in adults with anxiety, depression, PTSD, panic disorder, and other stress-related mental and physical disorders (Ma et al., 2017)

The common physiological basis of attention and breathing can be partially detected in the autonomic nervous system of ADHD patients, but electroencephalography (EEG) studies and functional magnetic resonance imaging (fMRI) studies provide more evidence. For example, EEG studies have shown that regular breathing exercises during yoga and meditation can increase activity in the left frontal, midline, and occipital brain regions that are related to improving cognitive abilities, such as attention, memory, and executive function, function. In addition, Compared with the relaxed state, the fMRI study also detected a significant increase in the activation of the bilateral subfrontal and temporal areas in the meditation state. These studies involve the right inferior frontal cortex/right insula and the right middle/superior temporal cortex as areas involved in meditation.

Deep breathing is also useful with some other patient populations. A study of 4,793 preoperative The patient aims to study the benefits of using deep breathing and aromatherapy to reduce preoperative anxiety. After deep breathing and lavender aromatherapy, about 40% of patients showed reduced anxiety. In addition, deep breathing has been shown to have a positive effect on certain chronic diseases. In a quasi-experimental study, 32 patients with type 2 diabetes received deep breathing training and compared with an untrained control group. Deep breathing resulted in a significant reduction in the Hamilton Anxiety Scale scores of participants who had

undergone deep breathing training, while the untrained control group showed no decrease in anxiety (Toussaint et al., 2021)

Behavioral therapy is formulated based on learning theory. Practicing slow deep breathing exercises develops voluntary control over autonomic nervous function. Therefore, the response to conditioned anxiety stimuli begins to decrease step by step due to repeated practice of slow deep breathing exercises. As in Pavlovian classical conditioning, Introduced conditioned stimulus (CS) slow deep breathing exercises and paired with unconditioned stimulus (UCS) anxiety stimulus response to obtain conditioned response (CR) relaxation. Repeated practice of this type of exercise can enhance conditioned responses and eliminate anxiety responses (Sellakumar, 2015)

Simultaneously, repetitive deep breathing exercises help individuals to learn and achieve powers of concentration, emotional control, muscle relaxation, etc. Furthermore, it is used as an antidote behavior to gradually overcome unwanted emotional responses and stimulates it progressively to loosen its ability to arouse anxiety. Practicing slow deep breathing exercises reduces stress, anxiety, anger, and other emotional disturbances. Similarly, reduced breathing facilitates psychophysiological inhibition and produces a relaxation response (Sellakumar, 2015)

Slow deep breathing exercises are easy to understand and easy to practice that can be applied to any population group and have no side effects. A non-clinical method can be used to treat people who face anxiety-related problems (Sellakumar, 2015)

Conclusion

Anxiety disorders rank sixth among all mental and somatic illnesses worldwide as a cause of so-called years of life with disability, and in fourth place in developed countries; thus they are among the chronic diseases with the greatest impact on the patient's life. Deep breathing is a technique based on the idea that the integration of mind and body results in relaxation. This technique requires the participant to contract the diaphragm, inhale and exhale slowly. Deep breathing seems to increase blood oxygen levels, massage the internal organs located in or near the abdomen, and possibly stimulate the vagus nerve. Deep breathing is known to maintain emotional balance, reduce psychological anxiety, remove toxins in the body, reduce body pain, nourish the heart, and help digestion of the digestive organs.

Early diagnosis and treatment of anxiety are advised because of the high stress and long recovery period associated with this disorder. Relaxation of diaphragmatic breathing or deep breathing exercises has been shown to be effective in reducing the perception and symptoms of anxiety. Deep breathing offers several advantages over conventional therapies currently used to treat anxiety problems. These advantages include a non-pharmacological approach, safety, minimal space requirements, ease of learning, and ease of practice.

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