

Generalized Anxiety Disorder

by

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Abstract

One of the most widely recognized and prevalent anxiety disorders nowadays is generalized anxiety disorder (GAD). GAD is a psychological disorder characterized by fear, concern, and a persistent sense of becoming overwhelmed. It is distinguished by intense, prolonged, and unreasonable concern about little things. Generalized anxiety is also defined as uneasiness and persistent illogical concern over prospective risks to the individual or their loved ones. This disorder is significantly linked with other conditions such as depression. Many individuals can calm oneself and lessen or regulate their anxiety using a number of coping mechanisms. Those with GAD, on the other hand, have a difficult time locating relaxation, serenity, and time away from their anxieties.

Generalized Anxiety Disorder

Generalized anxiety disorder (GAD) can impact how a person thinks, feels, and acts. Generalized anxiety is characterized by the constant feeling of overthinking. This disorder involves chronic anxiety, extreme worrying, and tension, even when there might be nothing to trigger it. GAD can make day-to-day activities extremely hard for people who struggle with this disorder.

Anxiety in all forms can have a negative effect on a person's social interactions and their mindset. GAD is sometimes confused with panic and obsessive-compulsive disorders due to the similar symptomology. The symptoms of GAD consist of irritability, restlessness or feeling keyed up or on edge, becoming easily fatigued, having difficulty concentrating, and experiencing panic/fear and sleep disturbances (difficulty falling asleep, staying asleep, restless or unsatisfying sleep). GAD is one of the most common mental disorders and can occur at any age in a person's life. Researchers have discovered GAD has an impact on 6.8 million adults—3.1% of the entire U.S. population, yet only 43.2% are receiving the right treatment for this disorder (ADAA, 2023). Why is this disorder undertreated?

Knowing how hard it is for people with generalized anxiety to deal with and overcome day-to-day challenges, I want to explore the kind of negative impacts it has on someone's day-to-day activities, social interactions, mental health, and mindset; how the brain of someone with GAD differs in structure and function than someone without GAD; and the best treatments for GAD, focusing on cognitive behavioral therapy (CBT). The aim of this paper is to thoroughly understand how GAD affects people and what obstacles they go through in life.

Generalized Anxiety Disorder: Symptomatology and Diagnosis

Generalized Anxiety Disorder is one of the most common mental health disorders and impacts not only children but has been estimated to affect up to 20% of adults every year (Munir & Takov, 2022), though estimates from other studies are more conservative, with one study estimating that 5-6% of the population is affected by GAD (Nutt et al., 2002). Fear, concern, and a continual sense of being overwhelmed characterize GAD. Patients with GAD frequently experience physical symptoms, and it may be challenging to separate these symptoms from those of anxiety-related medical conditions. In evaluating patients for generalized anxiety disorder, practitioners should routinely consider medical conditions, and before they start to make a diagnosis of generalized anxiety disorder, practitioners should take a history and perform a physical examination in order to rule out medical causes of anxiety. It is important to take into account any additional psychiatric conditions that could be mistaken for generalized anxiety disorder (Jordan et al., 2017).

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) lists the specific requirements that must be met for a diagnosis of GAD, which includes the following symptomatology: difficulty managing anxiety, having anxiety that leads to extreme stress and an impact on everyday life, and continuous worry about everyday obstacles that is out of proportion to the potential threat.

Excessive fear is common in people with GAD, and it can linger for months or years. Attention issues can be exacerbated by GAD due to the amount of attention that is spent worrying excessively. People with GAD may have difficulties in their daily lives. Feelings of fear or panic, for example, can make a job, school, and relationships difficult. Anxiety disorders are frequently treated with psychotherapy and medication.

People do not outgrow this disorder as they age. In fact, the negative impact of GAD may increase with age. Individuals with GAD may experience neural reorganization that increases with age as a result of the disorder (Wang et al., 2022). Differences in resting state electroencephalography (EEG) patterns were seen between patients with GAD who were under the age of 50 and patients with GAD over the age of 50. The older patients had decreased functional connectivity intensity in low frequency brain waves, suggesting that the negative impact of GAD on neural function increases with age.

How does GAD affect a person's day to day lifestyle and mindset?

Generalized anxiety affects a person's day to day life, work environment, social interactions, and even home atmosphere. In one case study (Fricchione, 2004), a woman who characterized herself as a lifelong "worrier" and had a history of depression recalled experiencing exhaustion, tense muscles, and disturbed sleep. This patient reported an increase in stress related to her children, her job, and her wellbeing. GAD was determined to be the cause of these symptoms, which affected her family, day-to-day life lifestyle, and mindset.

The cycle of anxiety experienced by people with GAD can affect their general mindset about their activities, opportunities, and challenges. The amount of time someone with GAD spends worrying is negatively correlated with psychological well-being (Iani et al., 2019). However, mindfulness may mitigate some of the negative impacts of GAD. This was examined in a study of 66 people with GAD (Iani et al., 2019). They conducted this study using a cross-sectional design to figure out if emotional intelligence, brooding, and worry may relate to psychological well-being and anxiety symptoms. The results demonstrated a negative relationship between "worry" and psychological well-being (PWB). After accounting for the

other factors, worry also demonstrated a propensity to be significantly linked with the indications of anxiety.

Persistent, intense, and unpredictable worry over a variety of diverse subjects is a defining feature of GAD. People with GAD say they have a hard time stopping their concern once it starts. According to cognitive processing theories of GAD (Hayes & Hirsch, 2007), the ways in which people with GAD perceive and organize their environment differ from people without GAD, and these differences in attention and perception perpetuate the anxiety. People with GAD and high levels of worry exhibit increased attention to potential hazards in their environment. Additionally, there is strong evidence that people with GAD have an interpretative bias that favors the frightening interpretations of emotionally ambiguous events or information. According to recent studies (Hayes & Hirsch, 2007), it might be feasible to teach people with high levels of anxiety to acquire more mild interpretative biases, which might also result in a reduction in their anxiety and worry. Because worry consumes limited processing resources, high levels of anxiety and worry have been linked to a decreased working memory capacity (Hayes & Hirsch, 2007). This might make it harder for people with GAD to shift their focus away from worrying and onto other subjects, which would lead to continued worrying and would interfere with the achievement of personal goals.

What are the best treatments for GAD and how do they work?

Common approaches to treating GAD include the use of pharmaceuticals and/or psychological therapies. Although medications are generally used for symptom management, therapy-based treatments are intended to retrain the brain to be less anxious by changing the way the individual frames their thoughts and emotions. However, research on psychological therapies has received less attention than psychopharmacological treatments (Mitte, 2005).

Cognitive behavioral therapy is known as a psychosocial treatment that is widely used in the treatment of anxiety and depression to improve emotional wellbeing and create unique coping mechanisms. This type of therapy focuses on confronting and altering cognitive distortions as well as the behaviors that go along with them. Doctors usually recommend this type of treatment before diving into medication; they believe this is the most effective form of treatment for anxiety (Pim et al., 2014). Individuals with GAD are frequently treated with cognitive behavioral therapy. Examples of such therapies include applied relaxation, cognitive rewiring of unhealthy ideas, and cognitive engagement to worry. These are such therapies in the cognitive field that can help improve GAD.

The effectiveness of CBT for treating GAD was examined in a meta-analysis of 41 studies (Cuijpers et al., 2014). Most studies compared CBT to a waitlist control condition. The meta-analysis revealed a substantial effect of CBT on the reduction of GAD symptoms. Similar effects were seen on the reduction of depressive symptoms in these individuals as well. This meta-analysis didn't include enough studies contrasting CBT with other psychotherapies or medication to draw conclusions about how different treatment approaches compare.

A different meta-analysis assessed the results of 65 studies and compared the effectiveness of CBT for treating GAD with the efficacy of pharmaceutical therapy (Mitte, 2005). CBT was more successful than no-treatment control conditions in the various studies, producing medium-sized effects in the reduction of GAD symptoms. The meta-analysis demonstrates the efficacy of cognitive-behavioral therapy (CBT) in treating generalized anxiety disorder (GAD). According to the study, CBT is very successful at reducing both the primary symptoms of anxiety and their related depressive symptoms, which ultimately improves quality

of a person's life. The study also discovered that each individual study's characteristics, that are more well known as patient variables, method, or therapy procedures, have little bearing on the treatment's effectiveness. The study does point out that there might not have been any differences discovered if the strict exclusion criteria used to choose the articles for the meta-analysis had not led to a drop in variance. Clinical researchers occasionally concentrate on various CBT variations while assessing the effectiveness of the therapy. They might also measure the therapy's short- and long-term impacts. It has been discovered that different CBT techniques may provide various outcomes; some techniques may be efficient for significant, short-term benefits that may not be sustainable, while other CBT techniques may be more efficient for long-term gains. The study lastly importantly demonstrates that future research should focus on issues that were not covered by the meta-analysis, that could be known as new advancements in the treatment of GAD and the evaluation of quality of life.

In general or with patients who have generalized anxiety disorder, there is limited evidence-based knowledge about how psychotherapists should treat both abrupt improvements as well as more gradual session-by-session adjustments (Flückiger et al., 2021). Eighty patients and 20 therapists compared the implementations of a Prolonged Focus on Change and a State-Of-The-Art CBT. According to the study, CBT was a successful treatment for GAD, with significant symptom reductions across all outcome measures. The study also discovered that the effects of CBT persisted over time and that there were no appreciable variations in results between the two therapists who carried out the intervention. Overall, the research points to CBT as a promising treatment for GAD and implies that it may be successful in easing anxiety and depressive symptoms in this population.

The effectiveness of CBT has been compared to the effectiveness of a newer approach known as metacognitive therapy (MCT). While CBT focuses on identifying negative and inaccurate thoughts and correcting them, MCT targets the underlying psychological processes that create negative and inaccurate thoughts, with the goal of preventing those negative thoughts from occurring. When directly compared in a randomized controlled study of patients with GAD, MCT led to higher recovery rates (65%) than CBT (38%), and these effects were maintained at a two-year follow-up (Nordahl et al. 2018). Solem et al. (2021) examined the long-term effects of each therapy in 39 of the 60 patients who had participated in the earlier study (Nordahl et al., 2018), collecting follow-up data roughly 8 to 11 years after the completion of the therapies. Upon long-term follow-up, those who had received MCT had a 57% recovery rate, while those who had received CBT had a 38% recovery rate. The reduction of symptoms of worry and anxiety was greater in those who had completed MCT than CBT. Although both therapies provide a benefit for people with GAD, more people may experience recovery from GAD after a course of MCT than CBT.

Anxiety and Comorbid Depression

In many cases, anxiety and depression go hand in hand. It has been reported (Kessler et al., 1999) that two thirds of patients with GAD also experience Major Depressive Disorder (MDD). Why does this happen? Does anxiety have such a negative impact on a person's mindset that they become depressed? The relationship between these two disorders is not well understood. Although they are viewed diagnostically as two different conditions, some have questioned whether MDD and GAD should be regarded as distinct disorders. Hofmann et al. (2010) examined this in 39 participants with GAD, 14 of whom also reported symptoms of MDD. A worry-induction method was used to induce psychological stress in these participants.

Various physiological measures were taken at rest and during the worry-induction, including heart rate, high frequency heart rate variability (HF-HRV), and galvanic skin level, along with self-reported anxiety level. There were no differences between participants with GAD and MDD and those with just GAD on measures of perceived anxiety, pulse rate, and galvanic skin levels. The HF-HRV values were the only measure that differentiated the two groups, but these differences support viewing these two disorders as distinct.

The prevalence of DSM-IV GAD in the general population is estimated to be five to six percent (Nutt et al., 2002). In addition, just like other anxiety disorders, GAD shows comorbidity with depression and the bulk of the other anxiety disorders. The neurological underpinnings of generalized anxiety disorder (GAD) are extensively discussed in this article. Studies have evaluated cerebral blood flow and metabolic activity in many regions of the brain using neuroimaging techniques, despite the fact that the precise mechanisms are not yet fully known. It has been demonstrated that there are differences between depression and GAD in the activation of the hypothalamic-pituitary-adrenal (HPA) axis. Corticotropin-releasing factor and plasma cortisol levels have been reported to be elevated in depressive patients but normal in GAD patients. In GAD patients, the dexamethasone suppression test has revealed a non-suppression rate of about 30%, which may point to anomalies in HPA control. Furthermore, plasma noradrenaline levels have been shown to be higher in GAD patients than in healthy controls, suggesting that noradrenergic neurotransmitter systems may be involved in the disorder. At rest, baseline cerebral blood flow in patients with GAD is comparable to that of healthy controls; nevertheless, during a passive viewing task, these patients exhibit increased activity in the occipital, temporal, and frontal lobes, the cerebellum and thalamus, as well as the basal ganglia. They exhibit enhanced basal ganglia activity when given vigilance exercises. The

cerebral blood flow in the frontal, parietal, and temporal regions is diminished in depressed patients, as is the cerebral metabolic activity in the limbic system, temporal frontal lobes, and basal ganglia when they are required to be vigilant.

Another article (Noyes, 2001) discusses the comorbidity in patients with GAD, which varies based on different populations studied. Some studies excluded patients with panic disorder, MDD, or both. Comorbidity among anxiety disorders can worsen the primary disorder's severity and outcome. The implications for treatment include the possibility that coexisting disorders may affect response to treatment and outcome, treatment for the primary disorder may or may not lead to improvement of coexisting disorders, and treatment that accounts for comorbidity may be more effective than treatment that does not. The relationship between GAD and MDD was examined in a large epidemiologic sample of women, and strong evidence for comorbidity was found. GAD has high rates of comorbidity with other disorders, especially MDD and panic disorder, in all populations studied.

The Anxious Brain

How does the brain of someone with GAD differ in structure and function than the brain of someone without GAD? A meta-analysis of 89 studies examined the neurobiology of GAD, with 26 studies focusing on structural and 63 studies focusing on functional differences between individuals with GAD and those without (Madonna et al., 2019). Structural atypicalities were commonly observed in the pre-limbic system, including the dorso-lateral prefrontal cortex (DLPFC), anterior cingulate cortex (ACC), amygdala, and ventro-lateral prefrontal cortex (VLPFC), brain areas that are all strongly interconnected. These brain areas have been associated with the processing of threat-related stimuli, recognizing emotional expressions, and the processing of general social information. Functional atypicalities have been observed in some of

these same regions, specifically atypically high levels of activation in the amygdala and atypically low levels of activation in the prefrontal cortex (PFC). The PFC is thought to play an important role in regulating the fear responses of the amygdala. An underactive PFC combined with an overactive amygdala would produce the type of constant worrying that is typically observed in people with GAD.

Similar results were reported by a different meta-analysis, involving 35 structural and 42 functional studies (Kolesar et al, 2019). Reduced gray matter volume was observed in the hippocampus, ACC, and amygdala. Reduced functional connectivity was observed between the amygdala and the DLPFC and ACC.

The differences between the brains of those with GAD and those without tend to increase according to the number of years someone has had GAD. In a study by Chen et al. (2020), patients were divided into groups based on the length of their illnesses, from short to long, and their gray matter volume was measured in various areas of the brain. They used the differences between these four groups to map the progressive changes that occur with GAD. They observed that the ACC is the earliest region affected by GAD, followed by the medial PFC, DMPFC, left inferior temporal gyrus, and right insula. With increased illness length, total gray matter volume gradually decreases in people with GAD.

Decision-making and the handling of emotions are essential elements of everyday life. Emotions provide information on which many decisions are based (Paulus & Yu, 2012). When an individual cannot regulate the anxiety they feel, this will shape how they calculate potential risks and benefits as they evaluate the paths before them. An overestimation of risk may prevent people with GAD from pursuing potential opportunities.

Summary and Future Directions

GAD can affect a person's daily life, mindset, and mental health. It's difficult for people with generalized anxiety to not feel high levels of worry and anxiety, which causes them to pay more attention to hazardous information in their environment (Hayes & Hirsch, 2007). Overall people that suffer from generalized anxiety find it hard to get through daily life activities while also keeping a positive mindset.

GAD can affect a person's mental state as well. A lot of the time people that suffer from GAD also deal with depression as well. Suffering from generalized anxiety can make a person withdraw from friends, family, and even their work environment. The person being affected by GAD might avoid going or doing certain things that trigger their anxiety, and this causes a negative impact on the mindset and mental health.

The brain of someone with GAD differs in structure and function than someone without GAD. The brains of people with generalized anxiety disorder have been looked at and it was discovered that they have weaker connections between the PFC and ACC (brain structures that regulate emotional responses) and the amygdala (a brain structure that identifies potential threats). This makes the brains of people with GAD much different from those without GAD and makes it more challenging for those with GAD to control their fears and anxious thoughts.

The best treatments for GAD have been discovered to be MCT, CBT, and medications. It is not clear which is more effective—CBT or medications—though there is evidence that MCT may be more effective than CBT. All of these treatments are effective ways of targeting a person's emotions, feelings, and behaviors and can lead to overall symptom reduction as well as recovery from GAD.

Future research should examine the optimal combinations of medications and psychological therapies as well as the best timing of the different treatments. It should also explore whether there are individual differences in treatment outcomes and whether there are risk factors that would prevent someone from being a good candidate for a treatment. Future research should also explore the optimal way to treat GAD with comorbid depression, as the majority of those with GAD suffer from both disorders. Finally, future research should explore whether there are ways to prevent GAD from developing. For example, would teaching children the principles of MCT, a therapy that focuses on preventing negative thought processes, prevent GAD from developing? Similarly, is there a way to strengthen connections between the PFC and the amygdala, so that the PFC can better regulate the signals coming from the amygdala? Future research should explore these important questions.

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