

Seasonal Affective Disorder; An Overview

Research Article

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Abstract

The recurrent serious depressive disease known as seasonal affective disorder, or SAD, typically starts in the fall and lasts through the winter. It is (SAD) is characterised by recurrent wintertime depressions that form and then go away in the spring or summer. In addition to having a gloomy mood, patients often have a greater appetite and sleep for longer periods of time in the winter. In temperate climates, SAD is a moderately common disorder that affects 1-3% of individuals. Women are more likely than males to experience it. The main signs are a depressed mood and decreased energy. Uncertainty surrounds the pathogenic mechanisms underlying SAD. A number of neurotransmitters have been linked to this, and numerous studies have shown that the serotonin system, in particular, is dysfunctional. Light therapy is a good way to cure SAD. In traditional light therapy, the SAD patient sits in front of a light box for 30 to 120 minutes each day during the winter, exposing themselves to 2000–10,000 lux. SAD is currently being treated with several types of light therapy, medication, and other therapies.

Keywords

Seasonal affective disorder, Winter depression, Pathophysiology, Serotonin, Treatment

Introduction

SAD, Seasonal affective disorder is not thought of as a separate diagnostic entity. It is actually a kind of severe seasonal recurring depression. Two conditions must be met in order for depression to be classified as having a seasonal pattern, according to the Diagnostic & Statistical Manual of Mental Disorders DSM-5 [1]: there should be more depressive seasons in a lifetime than there are seasons without depression. In the winter, seasonal pattern disorders seem to be more prevalent, yet they can also occur in the summer.

The neurotransmitter serotonin, which is thought to be in charge of maintaining mood balance, is difficult to control in individuals with seasonal affective disorder. A protein called SERT, which aids in serotonin transport, was found in one research to be 5% more prevalent in persons with SAD during the winter than during the summer. Because SERT moves serotonin from the synaptic cleft to the presynaptic neuron, higher levels of SERT produce depression by decreasing serotonin activity. Throughout the summer, sunlight frequently keeps SERT at low levels [2]. But the activity of the neurotransmitter serotonin also

declines in a manner comparable to that of the amount of sunshine in the fall.

Melatonin overproduction may be problematic for SAD patients [3]. The pineal gland produces the hormone melatonin, which makes people drowsy in response to darkness [4]. In the winter, as the days become shorter, more melatonin is produced, which makes SAD sufferers feel sleepy and lethargic [5]. Although melatonin probably has an impact on SAD symptoms, it cannot fully explain these occurrences [6].

Circadian rhythms are affected when serotonin levels are low and melatonin levels are high. The body's circadian rhythms, or internal 24-hour "clock," are synchronised to react to the regular changes in light and dark that take place every day and throughout each season. It has been discovered that the circadian signal, which signals a seasonal shift in day length, is timed differently for those with SAD, making it harder for their systems to adjust [7-9]. Additionally, SAD sufferers may manufacture less vitamin D in the winter because their skin receives less outdoor sunlight [10,11]. Vitamin D shortage and insufficiency have been linked to clinically significant depression symptoms [12,13] because it is thought that Vitamin D contributes to serotonin activation. There is currently no proof that melatonin, serotonin, circadian rhythms, or vitamin D cause Seasonal affective disorder. However, there are and are being investigated correlations between these important elements. This review's objective is to assess the symptoms, pathophysiology, epidemiology and treatment of seasonal affective disorder in depth along with the cause and other factors participating in the prevalence of this disorder.

Epidemiology

Between the ages of 18 and 30 is thought to be the optimal window for the start of seasonal affective disorder, which affects women four times more frequently than males [14]. The most vulnerable are those who reside in northern latitudes and are the furthest from the equator [15]. SAD, for instance, affects 9% of Alaskans and 1% of Floridians living in the United States [16]. In Canada, 2 to 6% of people have SAD, and 15% of people have the winter blues [17]. 20% of people in the UK experience the winter blues, and 2% have SAD [18,19].

It is challenging to determine prevalence since the condition may go undetected and therefore go undiagnosed

[20]. It can be challenging to identify SAD since it frequently co-occurs with other bipolar, depressive, alcoholism, eating disorders & attention deficit [21]. Their hypothyroidism can conceal SAD symptoms since persons with SAD may also experience mild declines in thyroid function [22]. Nurses and other healthcare workers who work shifts may be particularly at risk for SAD because it is an illness that affects women more frequently and is brought on by insufficient sunlight exposure [23].

Pathogenesis

SAD stands out among psychiatric disorders in those individuals can be researched while exhibiting symptoms, following therapy, and the following summer while they are in untreated remission. Since most treatments don't include pharmaceuticals, this isn't a complicating element when evaluating the biological changes linked to treatment response. This paradigm has been used in many investigations. The main areas of study have been circadian rhythm disorders, hormones, and neurotransmitters. Numerous neurotransmitters, including catecholamines, have been linked to SAD, but serotonin has undergone the most thorough research.

Symptoms

According to information intended for the general public, people with SAD may experience feelings of sadness, irritability, and frequent crying; they may also experience fatigue and lethargicness, trouble focusing, Oversleeping, low energy, decreased activity levels, withdrawal from social situations, craving sugar & carbohydrates, and a propensity to overeat are all factors that lead to weight gain [24-26]. In contrast, symptoms of the less common summer seasonal pattern disorder emphasis on irritability in addition to weight loss accompanied by a decreased hunger, agitation, insomnia, restlessness, anxiety, and even brief violent outbursts [27,28]. It is significant to highlight that the severity of seasonal pattern disorders varies. Some people may develop subsyndromal S-SAD, also known as the "winter blues," a milder type of SAD [29-31]. Others, though, may be profoundly disabled and incapable of function. SAD symptoms can occasionally be as severe as those of nonseasonal depression in inpatients [32,33]. Suicidal thoughts may be present, as they are with all depressive disorders [34]. With individuals they suspect have or may have SAD, health practitioners must constantly do suicide assessments.

Treatment

Combinations of antidepressant medications, vitamin D supplementation, light therapy, and counselling are frequently used as treatment methods. A quick summary of these can be found in the next section.

Vitamin D supplementation

A comprehensive investigation and meta-analysis found a connection between inadequate levels of vitamin D and depression. When measuring vitamin D concentration, serum 25-hydroxyvitamin D (25-OH D) levels are utilised. Optimal levels are 30 ng/mL, whereas insufficient levels are less than 30 ng/mL, deficient levels are less than 20 ng/mL, and intoxication levels are higher than 150 ng/mL. Low vitamin D levels are typically caused by poor food or lifestyle choices, such as insufficient time spent in the sun. Those who reside 33 or 30 degrees north or south of the equator are unable to synthesis vitamin D from November through February [35].

Although no additional research has verified According to the studies into this association, those with SAD and S-SAD, who typically have low or insufficient levels of vitamin D, may benefit from taking 100,000 IU of vitamin D daily to help with symptoms [36,37]. Consuming vitamin D prior to the onset of winter's darkness may help reduce depressive symptoms. Intoxication or adverse effects are uncommon but could happen at doses of greater than 50,000 IU per day.

Light Therapy

Attempts to substitute the diminished sunlight with bright artificial light, especially in the morning, have regularly shown promise. This is because it is known that decreasing daylight can play a significant role in the onset of SAD & S-SAD. The terms "light therapy" and "phototherapy" are both interchangeable terms for "light therapy." One can buy light boxes that produce full spectrum light with a similar spectrum to that of sunlight. Beginning in the early fall and lasting until the beginning of spring, resting in front of a light box can help SAD and S-SAD symptoms. Light rooms, which have indirect lighting that is dispersed uniformly, are accessible in Scandinavian nations. During the fall and winter, light boxes usually need to be exposed to 10,000 lux of cool-white fluorescent light for 20 to 60 minutes per day to filter out UV radiation [38]. This is roughly 20 times better than typical indoor lighting.

The negative side effects of light treatment are typically milder than those brought on by antidepressants. They include fatigue, headaches, irritability, age-related macular degeneration risk, and trouble sleeping. Light therapy is not linked to ocular alterations or disorders. Lithium, melatonin, some antibiotics, and phenothiazine antipsychotics are a few examples of photosensitizing drugs that shouldn't be combined with light therapy. Hypomania and suicidal thoughts can appear sometimes, especially in the early stages of therapy [39]. A health care provider should keep an eye on your use of light treatment [40].

Antidepressants

Similar to other depressions, Serotonin activity in the brain is thought to be altered in SAD patients. As a result, second-generation antidepressant (SGA) medications for depression, particularly fluoxetine (Prozac), have emerged as potential SSRIs (Selective Serotonin Reuptake Inhibitors). In the landmark Canadian trial (Can-Sad) comparing the efficacy of fluoxetine or light therapy in SAD, fluoxetine was discovered to be equally effective and well-tolerated as light therapy, as well as being more cost-effective [58]. Another SGA SSRI that has received widespread promotion as a treatment for SAD is bupropion (Wellbutrin) [41-43]. One study done in the north of the US and Canada indicated that commencing bupropion XL 150-300 mg daily early on in the season while subjects were still healthy did assist to prevent the recurrence of seasonal depressive episodes [44].

It's crucial to raise the topic of side effects with any drug treatment. Insufficient data exist to draw general conclusions on the use of second-generation antidepressants (SGAs) for SAD, according to a Cochrane review of the topic. The authors also pointed out that up to 27% of study participants who received SGAs for SAD withdrew early due to negative side effects. Therefore, antidepressant medication is a viable and frequently effective treatment for SAD, especially for those whose symptoms are incapacitating. However, other treatments should also be considered.

Counselling

People with SAD might receive assistance and support from counselling techniques. According to one study, two 90-minute sessions of Cognitive Behavioral Therapy (CBT) delivered in a group setting over the course of six weeks

were equivalent to 30 minutes of 10,000 lux cool-white fluorescent light each morning. By altering how people think about difficulties, CBT aims to help people overcome overwhelming issues and destructive routines.

By introducing fresh perspectives on low energy and depressed mood, several types of SAD and S-SAD counselling incorporate CBT components. Programs that encourage people to improve their nutrition by cutting back on carbohydrates and sweets, increase their exercise, control their stress, prevent social disengagement, and spend more time outside are all advised when depression symptoms are not severe.

Norman Rosenthal promotes self-counselling on his website by offering strategies for lowering the tension that invariably comes along with the debilitating signs and symptoms of SAD. He discovered that activities he enjoyed, such as walking and Transcendental Meditation (TM), as well as other mindfulness practises, yoga, and other forms of exercise, were all useful. Rosenthal recommends consuming a diet rich in complex carbohydrates, veggies, unprocessed foods, and proteins. Additionally, he advises arranging winter vacations in warm locations before winter arrives and people lose interest in doing so.

As was said in the sections above, SAD is a condition brought on by inadequate exposure to sunlight. Additionally, the majority of SAD therapies strategies are predicated expanding the amount of bright light humans are exposed to the exception of antidepressant medicines and counselling. By working to better understand SAD, including diagnostic tools like the SPAQ into their work, and learning about current evidence-based therapy modalities, health practitioners can be extremely helpful in assisting individuals with SAD.

Conclusion

In conclusion, this study gave a general overview of SAD, outlining the DSM-5 criteria, epidemiology, symptoms, diagnosis, and treatment of the condition. People who have SAD have such low energy levels and depressed moods & they are unable to carry out daily tasks. Sunlight is essential for the reduction of serotonin activity, the generation of melatonin, the disruption of circadian rhythms, & the low concentrations of vitamin D linked to SAD symptoms. Antidepressant drugs provide some solace. However, treatments including vitamin D supplements, light therapy, and counselling techniques are also starting to show promise. This paper urges health practitioners

to incorporate SAD examinations and therapies into their practise when working with themselves, their loved ones, and other people who care about them.

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