

The anxiety-reducing effects of cannabidiol treatment in teenagers with social anxiety disorder

Nobuo Masataka, Professor of Primate Research Institute at Kyoto University, Japan has recently completed and published exciting research into the treatment of the debilitating condition of social anxiety disorder with cannabidiol, a constituent of cannabis. Social anxiety disorder has a major impact on sufferers and the condition is becoming increasingly prevalent. Here, Professor Masataka's promising new research findings are presented within the context of the current evidence base, providing an overview of where we are now, and the direction required to develop sound scientific evidence to better treat social anxiety disorder.

Fear and anxiety are adaptive responses that are essential for our ability to cope with threats to our survival. However, when fear and anxiety become excessive, it can be extremely disabling. One condition where this occurs is general social anxiety disorder, or SAD. SAD is a common anxiety condition which has detrimental impacts on a person's social life (Bergamaschi, 2011). SAD is characterised by excessive anxiety in social situations, or where a person may feel judged, for example speaking at meetings, or public speaking. SAD has a profound impact on sufferers and this is particularly serious for teenagers who may stop going to school and withdraw from any social communication. People who suffer from anxiety disorders in general may have a diminished sense of wellbeing, may be more likely to experience relationship breakdowns, unemployment and have an elevated suicide risk. There is a huge economic burden associated with anxiety related disorders (Blessing et al., 2015). Although SAD is a common anxiety disorder, there is an absence of good quality research into this debilitating

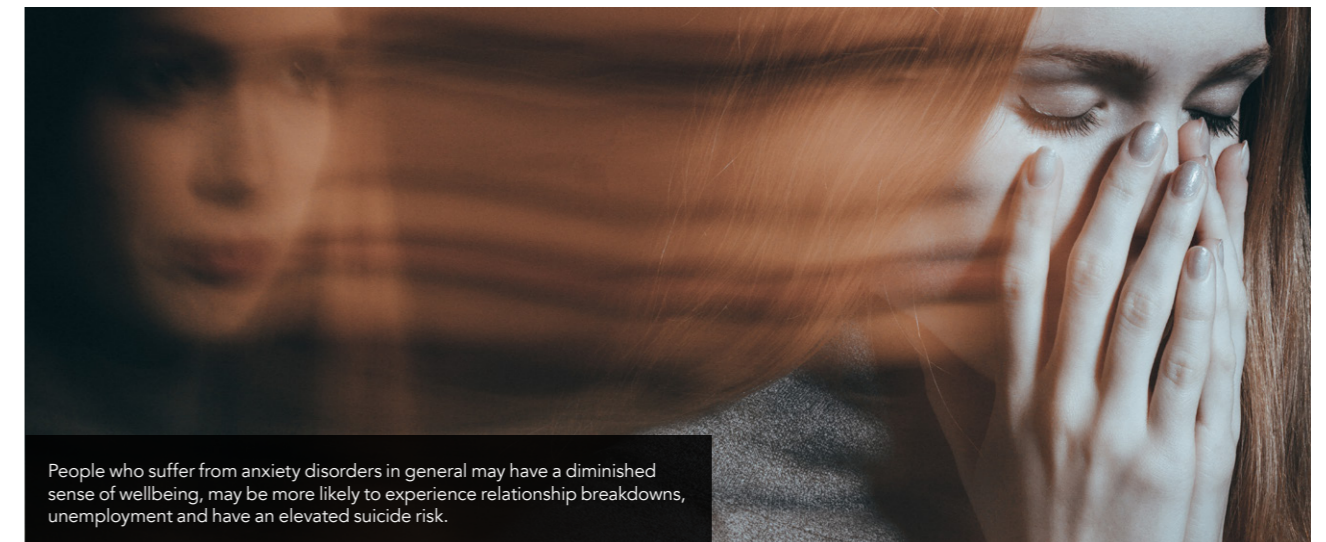
condition, meaning that the cause of SAD and the treatment of the disorder are not fully understood.

The treatment of SAD with currently available medications is problematic with only around 30% of patients showing a recovery without ongoing symptoms (Blanco et al., 2002). The current range of pharmacological medications are limited by adverse side effects. Blessing and colleagues note the high priority to develop novel alternative medications for the benefit of patients and to relieve the substantial burden on society.

CANNABIDIOL AS A TREATMENT OPTION

Cannabidiol, otherwise known as CBD, is a constituent of cannabis. CBD has shown potential in the treatment of chronic pain, nausea, epilepsy and psychosis (Masataka, 2019). Additionally, CBD has properties that reverse anxiety-like behaviour in humans and animals and as such has been regarded as a potential treatment option for SAD.

Recreational and medicinal users of illegally available cannabis have reported side effects of panic and anxiety. One constituent of cannabis, D9-tetrahydrocannabinol (THC), causes the euphoria and mind-altering effects of cannabis, but detrimentally, THC has been proven to increase anxiety levels in cannabis users. CBD, which acts very differently on the body to THC, does not have the psychoactive effects of THC, and in contrast CBD has been proven to induce an anti-anxiety effect and works to reduce anxiety.



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In relation to SAD, the benefits of CBD over alternative medications is that CBD is fast acting and does not have the side effects associated with medications traditionally used to treat SAD. Bergamaschi and colleagues report that up to 1500 of CBD mg/day is well tolerated by patients with no reports of slowed responses, poor mood, nor any detrimental impacts on the heart and breathing rates. One of the current medication options for SAD might be benzodiazepines. Unlike treatment with CBD, benzodiazepines may impair function, cause dependence and withdrawal symptoms (Bergamaschi, 2011).

EXISTING EVIDENCE SUPPORTING CANNABIDIOL

Blessing and colleagues published a paper in 2015 that reviewed the existing evidence for the use of CBD to treat anxiety-related disorders. It appraised the evidence from a broad range of studies to include preclinical evidence, human experimental studies and epidemiological studies (Blessing, et al). The findings indicated that animal studies support the use of CBD to treat anxiety related disorders. The team also found that human studies are supportive of the anti-anxiety effects of CBD, but there was a need for further research in this area to support the use of CBD as a treatment option for specific anxiety related conditions, and also to investigate which are the optimum levels of dosing.

A small trial investigating the effects of CBD on participants with SAD who were public speaking (which induces similar

anxiety effects to SAD), found that those people who were treated with CBD had reduced anxiety and improved comfort when they were speaking (Bergamaschi et al). The authors recognised the need for a large trial to further test the effects of CBD on anxiety.

CANNABIDIOL TO TREAT SAD: NEW FINDINGS

Professor Masataka and colleagues have recently published their exciting clinical trial investigating the effects of CBD on teenagers experiencing SAD in *Frontiers in Psychology*. This trial shows promising results concerning the treatment of SAD with CBD. Masataka and colleagues recruited 37 Japanese teenagers with

SAD who were randomly allocated to receive treatment with either CBD, or a placebo for four weeks treatment. The placebo treatment contained olive oil and the CBD treatment contained 300mg of CBD oil. The treatment was administered by a clinical psychologist, unaware of the teenagers' treatment allocation, at the participants' home. Anxiety was measured before and after treatment using the Fear of Negative Evaluation Questionnaire and the Liebowitz Social Anxiety Scale. The teenage participants were followed up for 6 months after their treatment for brief health checks. In this trial neither the researchers nor the teenage participants were aware whether they had received the placebo treatment

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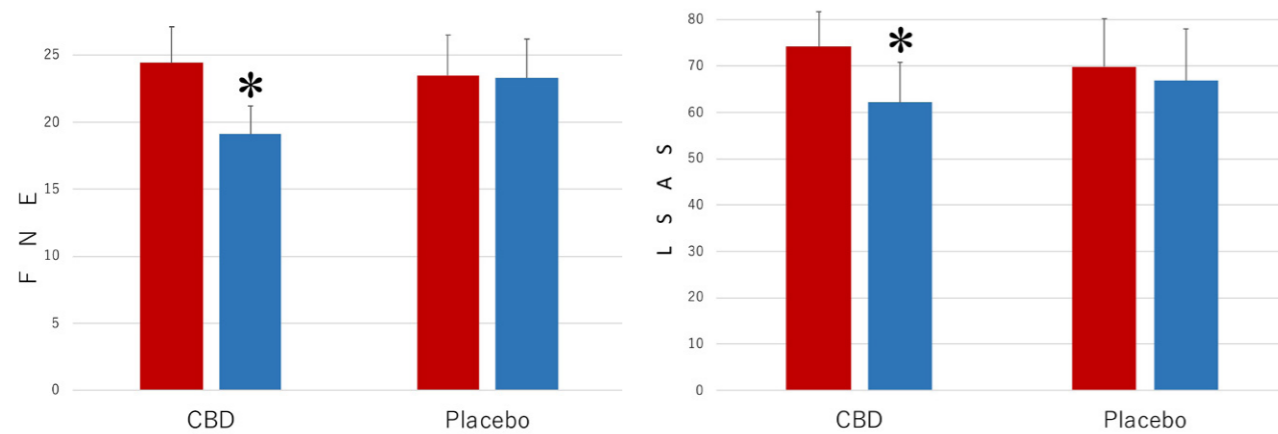


Fig 1. Scores of Fear of Negative Evaluation Questionnaire (FNE) in the participants who received CBD and in the participants who received placebo. The participants were evaluated before and after treatment. Error bars represent SDs. * indicates significant difference from pretreatment measurement.

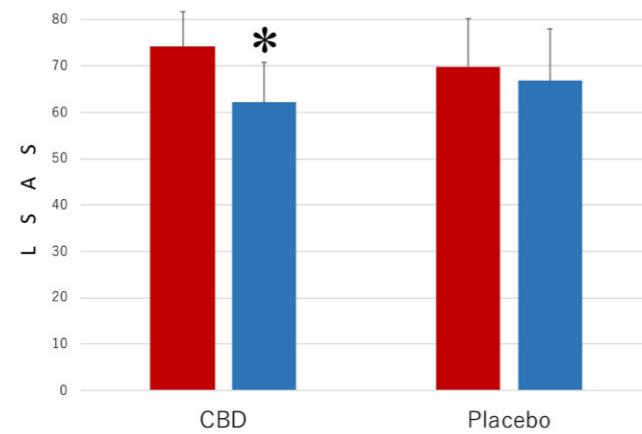


Fig 2. Scores of Liebowitz Social Anxiety Scale (LSAS) in the participants who received CBD and in the participants who received placebo. The participants were evaluated before and after treatment. Error bars represent SDs. * indicates significant difference from pretreatment measurement.

Masataka and colleagues' trial revealed exciting findings. The results present the first clinical evidence of the positive effects of CBD on teenagers suffering with SAD. The teenagers who received the treatment with CBD had reduced anxiety when compared with the teenagers who received the placebo treatment. Although this study did not plan to specifically record any side effects of treatment, none of the teenagers who participated had any significant health complaints following the trial. An additional finding of interest was that 53% of the teenagers who received treatment with CBD oil

went on to take the decision to receive treatment (medication and Cognitive Behavioural Therapy) from a hospital whilst none of the teenagers in the placebo group sought any additional treatment. This finding means that the patients who received CBD felt the capacity to overcome their anxieties concerning the stigma of their condition and engaging with therapists, to access existing treatments. The fact that teenagers suffering with SAD who were treated with CBD were making positive steps towards ongoing treatment is a very encouraging sign and is worthy of note.

GOING FORWARD

Masataka and colleagues note that in children and adults, SAD has been shown to be one of the most common psychiatric disorders. Symptoms may begin as early as five years old and peak at the age of twelve. Left untreated the disorder can continue into adolescence and then into adulthood. In Japan it has been reported that there are a million teenagers with SAD who may withdraw into their living spaces for up to six months at a time. Professor Masataka is highly encouraged by the results of his trial of CBD in teenagers with SAD. Indeed, he is hopeful that the results of his present study will contribute to the development of sound scientific evidence and the development of further human clinical trials to advance the scientifically proper use of CBD in patients who are experiencing SAD. Professor Masataka recommends a further clinical trial of robust design, which compares treatment of SAD with CBD and the most commonly used pharmacological treatment option. A well-designed trial of this nature could provide the sound scientific evidence base to further support the safe and effective use of CBD in the treatment of SAD. The potential benefits of treatment with CBD for SAD are evident. Robust clinical trials are clearly needed to identify a definitive scientific evidence base to support treatment of SAD with CBD. In addition, there is a need to identify the most appropriate dosages of CBD in the treatment of this most debilitating of conditions, affecting many people worldwide.

The results present the first clinical evidence of the positive effects of CBD on teenagers suffering with SAD.



Behind the Research

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Research Objectives

Nobuo Masataka's research interests include origins and evolution of languages as well as developmental disorders. He is also interested in exploring interventions for autism spectrum disorders and social anxiety disorder.

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Detail

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Bio

Nobuo Masataka obtained his PhD from Osaka University in the ethological study of vocal communication in New World primates. As Assistant Professor of Kyoto University and of the University of Tokyo, he has published numerous articles about language learning of preverbal infants as well as a book "The Onset of Language" from Cambridge University Press. Dr Masataka currently holds a Professorship at the Primate Research Institute, Kyoto University.

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Personal Response

Social anxiety disorder (SAD) is becoming increasingly common. How do you envisage the research into the use of cannabidiol developing and do you foresee that cannabidiol will become an acceptable treatment option for people who experience SAD?

What is needed as a next step to introduce CBD for SAD treatment should be to determine how much dose of CBD is appropriate daily, according to the severity of the disorder that each person experiences. Ideally, I hope CBD should not only used as a medicine, but as a supplement. My sense is that the number of people living with social phobia is likely much higher than what is assumed. A number of people (e.g. those who have just entered university or started a new job), may experience difficulty in communicating with others and somehow become phobic socially. Under such circumstances, the use of CBD would prevent them from growing worse and help restoring their mental health.