

## Ashwagandha (*Withaniasomnifera*) as an Adjunctive Therapy for Alleviating Anxiety and Depression in Cancer Patients: A Comprehensive Review

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### ABSTRACT

Cancer patients frequently have psychological difficulties including anxiety and depression, which have an impact on their quality of life and general wellbeing. Because traditional therapy methods frequently have drawbacks, alternative therapeutic techniques are investigated. The ancient herb Ashwagandha, which has a long history in Ayurvedic medicine, has drawn interest because of its ability to treat anxiety and depression. The effectiveness of *Withaniasomnifera* in reducing anxiety and depression in cancer patients is examined in this review. After conducting a thorough literature search, pertinent studies were chosen based on inclusion criteria. The study shows encouraging findings, with multiple trials indicating reductions in anxiety and depressive symptoms in cancer patients after taking *W.somnifera* supplements. The discussion includes the possible neurotransmitter system regulation and stress response as mechanisms of action for Ashwagandha. Potential side effects and safety concerns are also covered. According to the research, *W.somnifera* may be an effective complementary treatment for anxiety and depression in cancer patients. It is necessary to conduct more study, especially randomised controlled trials, to determine the ideal dosage, long-term effects, and potential combinations with other cancer therapies. Overall, ashwagandha shows potential as a non-drug treatment to enhance psychological health in cancer patients who are depressed and anxious.

**Keywords:** ashwagandha, cancer, stress, alternatetreatment.relief, anxiety, depression,

### INTRODUCTION

Cancer patients often suffer from anxiety and depression, which badly affects their quality of life and general well-being. Cancer diagnosis and treatment can cause many emotional reactions, such as fear, sorrow, and uncertainty, which can help to either cause or exacerbate anxiety and depressive symptoms (Mitchell et al., 2018). Depression is characterised by enduring emotions of sorrow, despair, and a loss of interest in activities, whereas anxiety is characterised by enduring sensations of concern, restlessness, and uneasiness (Walker et al., 2014). People frequently experience both states at the same time when anxiety and depression co-occur (Hinz et al., 2016). According to Pinguart and Duberstein (2010), these psychological symptoms can have a significant impact on a cancer patient's physical well-being, response to therapy, and prognosis as a whole.

There has been an increase in interest in recent years in investigating complementary and alternative methods for treating anxiety and depression in cancer patients. *Withaniasomnifera*, an ancient plant used in Ayurvedic medicine, has attracted interest for its possible therapeutic benefits on mental health. According to studies, ashwagandha may have adaptogenic characteristics that might ease stress and make people feel peaceful and relaxed (Chandrsekhar et al., 2012). The neurotransmitter systems of

serotonin and gamma-aminobutyric acid (GABA), which are linked to anxiety and depression, have also been reported to be modulated by it (Singh et al., 2011). As a result, investigating its potential as a supplemental therapy strategy for easing anxiety and sadness in cancer patients bears promise. This review's objective is to conduct a comprehensive analysis of the research on Ashwagandha's effectiveness in treating various cancer-related symptoms.

### 1. PSYCHOLOGICAL DISTRESS IN CANCER PATIENTS

Anxiety and despair have a variety of effects on cancer patients. In addition to negatively affecting one's general wellbeing and quality of life, psychological discomfort can also have a negative impact on one's physical health and the effectiveness of therapy. According to research, cancer patients who also suffer from anxiety and depression have longer hospital stays, more discomfort, follow their treatments less closely, and have lower overall survival chances. (Hinz et al., 2016; Pinquart & Duberstein, 2010). Additionally, these ailments can harm relationships, impair social functioning, and make it harder to deal with the difficulties brought on by cancer (Walker et al., 2014). For the well-being, adherence, and general prognosis of cancer patients, comprehensive care of anxiety and depression is essential. Effective treatments can enhance the prognosis and results of the treatment. To understand the causes of psychological discomfort in cancer patients is crucial for providing them with complete treatment and support. The following are important elements that this population's psychological anguish is influenced by:

- a. **Disease-related factors:** The psychological distress can be exacerbated by the physical and emotional effects of a cancer diagnosis and the therapies that go along with it. The elevated distress levels can be caused by a variety of elements, including physical discomfort, therapeutic adverse effects, disease progression and recurrence (Kangas et al., 2007).
- b. **Treatment-related factors:** Significant psychological disorders can result from the process of cancer treatments including chemotherapy, radiation therapy, and operations. The emotional health of the patient may be significantly affected by side symptoms as hair loss, restlessness, nausea, and changes in body structure (Arving et al., 2007).
- c. **Psychosocial factors:** The mental health issues are already present, handling mechanisms and social and moral support are all significant contributors to psychological discomfort in cancer patients. Distress can be made more likely by a lack of suitable support networks, a lack of effective coping mechanisms, and a history of anxiety or depression (Carver et al., 2003).
- d. **Personal factors:** Individual characteristics, such as personality traits, resilience, and past life experiences, can influence psychological distress. Patients with a predisposition to anxiety or depression may be more susceptible to experiencing distress during their cancer journey (Lebel et al., 2013).
- e. **Existential and spiritual concerns:** The existential challenges associated with a cancer diagnosis, including questions about life purpose, mortality, and meaning, can contribute to psychological distress. Addressing spiritual and existential concerns is vital in providing holistic support to cancer patients (Kruizinga et al., 2016)
- f. **Communication and information needs:** Anxiety and depression may be exacerbated by little or poor information regarding the illness, prognosis, and available treatments. Emotional discomfort may be made worse by uncertainty and a lack of clarity surrounding the cancer journey (Butow et al., 2013).

Healthcare professionals must understand contributing factors for targeted interventions and support strategies to effectively address psychological distress in cancer patients.

## 2. CHALLENGES FOR HEALING THE ANXIETY AND DEPRESSION IN CANCER PATIENTS

Challenges associated with conventional treatment approaches for anxiety and depression in cancer patients, along with references to support the information:

- a. **Limited effectiveness:** Conventional treatment approaches for anxiety and depression in cancer patients, such as pharmacotherapy and psychotherapy, may have limited effectiveness in addressing these symptoms. The complex interplay between cancer-related factors, treatment-related side effects, and psychological distress can make symptom management challenging (Mitchell et al., 2018).
- b. **Treatment-related side effects:** Some pharmacological interventions commonly used to manage anxiety and depression may have unwanted side effects that can further impact the well-being of cancer patients. For example, certain antidepressant medications may cause fatigue, nausea, or cognitive impairments, which can exacerbate existing physical symptoms or interfere with treatment adherence (Jacobsen et al., 2016).
- c. **Interactions with cancer treatments:** There can be potential drug interactions between conventional anxiety and depression treatments and cancer therapies, such as chemotherapy or targeted therapies. This necessitates close monitoring and coordination between oncologists and mental health professionals to ensure the safety and efficacy of treatment regimens (Ashrafioun et al., 2019).
- d. **Access and availability:** Access to specialized mental health services, including psychotherapy or counseling, can be limited for cancer patients, especially in certain geographic regions or healthcare settings. Limited availability of mental health professionals trained in oncology can pose challenges in providing comprehensive psychological support (Singer et al., 2019).
- e. **Stigma and reluctance to seek help:** The stigma associated with mental health concerns may contribute to reluctance among cancer patients to seek help for anxiety and depression. Fear of judgment, concerns about being perceived as weak, or the prioritization of physical symptoms over psychological well-being can hinder access to appropriate support (Sharpe et al., 2019).

Addressing these challenges requires a comprehensive and multidisciplinary approach that integrates psychological support into the overall cancer care framework.

## 3. PHARMACOLOGICAL ROLE OF ASHWAGANDHA IN ANXIETY AND DEPRESSION

*W.somnifera* extract has been shown to enhance the cell mediated immunity by increasing levels of interferon- $\gamma$ , interleukin-2 and GM-CSF which indicates the myelosuppressive activity in cancerous conditions. It increases the lysosomal activation in macrophages thereby activating these cells and by increasing activity of nitric oxide synthase (NOS) which has anti-stress action. (Illeyperuma *et al.*, 2002). Ashwagandha plays an anti-stress role by activation of plasma cortisol levels, phagocyte index, increase in levels of Th-1 cytokines and increasing T lymphocytic proliferation. (Khan *et al.*, 2006; Searfiott *et al.*, 1997; Tiwari *et al.*, 2014). Supportive findings in favor of anti-stress functions of this drug has been published by Loprest *et al.*, (2019) in their randomized placebo controlled double blinded trial reported anti-stress effects of this medicinal herb through its effects on hypothalamic-pituitary-adrenal axis. (Loprest *et al.*, 2019). Biswal (2012) reported significant improvement in fatigue associated with cancers in patients following administration of Ashwagandha. (Biswal *et al.*, 2012) Hence, there is very limited scientific evidence available that associates use of this herb as an anxiolytic and anti-

depressant drug in patients diagnosed with cancers. More studies are required to research into this area in an elaborate manner.

#### 4. CONCLUSION

*W.somnifera* (also known with the name of 'Ashwagandha') is extremely coveted herbaceous plant used in Ayurvedic medications. This plant may prove itself answer to various health related issues ranging from mental or physical fatigue, disorders of sleep, depression along with state of anxiety. This plant has demonstrated neuro-protective, adaptogenic, anti-cancerous and anti-stress activities. Its benefits have been reported in many studies. Study will analyze clinical efficacy of Ashwagandha, An ayush drug on levels of anxiety and depression in cancer patients. Clinical outcome will be helpful in deciding if prescribing this particular drug can help cancer patients.

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