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SYSTEMIC REVIEW OF MEDICINAL PLANTS USED FOR THE TREATMENT OF ANXIETY

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ABSTRACT

Introduction: Anxiety is a medical state related to our psychological as well as physiological behaviour having numerous characteristics like cognitive, emotional, behavioural and somatic. Many allopathic drugs are available to treat anxiety disorders, among which benzodiazepines are most commonly used which possess various systemic side effects, which is why many patients prefer to use herbal products to treat anxiety. Here, we reviewed plants and products derived from them that are commonly used for the treatment of Anxiety. The purpose of this systematic review is to study anxiety and to summarise the available treatments for this disease, focusing especially on herbal medicine. **Methods:** An extensive literature search has been conducted regarding Anxiety and medicinal plants used in treating anxiety; using multiple databases (Google Scholar, Science Direct, Scopus, Springer Link, and PubMed) covering all published journals from 2010 to the most current. Key search items used in this study included, "medicinal plants", "medicinal herb", "Anxiety", "symptom", "herbal", and "treatment". Out of the 150 collected articles (published between 2010 and 2023), 69 were excluded due to non-relevance or lack of access to the original article. **Results:** Anxiety is generally associated with an imbalance in neurotransmitters, especially those like serotonin, gamma-aminobutyric acid (GABA), norepinephrine, and dopamine. These neurotransmitters play a crucial role in regulating mood, emotions, and stress responses, Various plants contain bioactive compounds such as tannins, terpenoids, saponins, steroids, glycosides, flavonoids, and alkaloids which have been associated with potential anxiety-reducing effects. **Conclusion:** According to the published results, it can be said that medical plants are more affordable have fewer side effects compared to synthetic drugs, and are more effective in the treatment of anxiety.

KEYWORDS: medicinal plants, anxiety, symptom, herbal, treatment.

1. INTRODUCTION

Anxiety

Anxiety is an emotional state commonly caused by the perception of real or perceived danger that threatens the security of an individual. It allows a person to prepare for or react to environmental changes. Everyone experiences a certain amount of nervousness and apprehension when faced with a stressful situation. This is an adaptive response and is transient in nature.

Anxiety can produce uncomfortable and potentially debilitating psychological (e.g., worry or feeling of threat) and physiological arousal (e.g., tachycardia or shortness of breath) if it becomes excessive. Some individuals experience persistent, severe anxiety symptoms and possess irrational fears that significantly impair normal daily functioning. These persons often suffer from an anxiety disorder.[1] An estimated 4.05% of the global population has an anxiety disorder, translating to 301 million people. The number of persons affected has increased by more than 55% from 1990 to 2019. Anxiety disorder metrics show a continuous increase in prevalence, incidence, and DALY rates.[2] The significant mediators of anxiety in the central nervous system are thought to be norepinephrine, serotonin, dopamine, and gamma-aminobutyric acid (GABA). The autonomic nervous system, especially the sympathetic nervous system, mediates most of the symptoms. The amygdala plays an important role in tempering fear and anxiety. Patients with anxiety disorders have been found to show heightened amygdala response to anxiety cues. The amygdala and limbic system structures are

connected to prefrontal cortex regions, and prefrontal-limbic activation abnormalities may be reversed with psychological or pharmacologic interventions.[3] In recent years, conventional drugs with both anxiolytic and antidepressant effects have been used to treat anxiety via various modes of action on neurotransmitter receptors. Benzodiazepines (BZs), selective serotonin reuptake inhibitors (SSRIs), and selective norepinephrine reuptake inhibitors (SNRIs) are major drug classes treating anxiety. Apart from these, there are other optional drugs, such as buspirone and pregabalin, and antidepressants, such as moclobemide, available on the market. Although those anxiolytic drugs are therapeutically effective, several adverse effects have been reported, such as amnesia or memory loss, sleep disturbance, pharmacological dependence, abuse liability, and sexual dysfunction. Consequently, numerous patients experience undesirable side effects, particularly from benzodiazepines, such as drowsiness, fatigue, dizziness, and impairment of motor coordination. In the absence of treatment, however, it can be developed into depression and even suicide.

In contrast, recent research observes not only the effectiveness of herbal remedies for anxiety but their widespread adoption by patients. Many studies suggested that specific plant-based foods/herbs could modulate anxiety due to their pharmacological properties. Fajemiroye et al. (2016) and Ernst (2006) found that around 43% of people suffering from anxiety look for complementary and alternative therapies, where herbal medicines are the most preferable treatment as they were claimed to provide more desired results with less toxicity.[4]

Medicinal plants, with their rich phytochemical profiles and historical use in traditional medicine, offer a promising avenue for the development of novel treatments for anxiety. Medicinal plants harbour an unparalleled diversity of bioactive compounds, including alkaloids, flavonoids, terpenes, and polyphenols. Many of these compounds have demonstrated neuropharmacological effects, suggesting their potential to modulate neurotransmitter systems implicated in anxiety disorders. A growing number of individuals express a preference for natural and holistic approaches to treating anxiety.[4] Exploring the properties of medicinal plants aligns with this trend and caters to those seeking treatments grounded in traditional wisdom and cultural practices.

The main purpose of this article is to introduce several effective medicinal plants used for treating anxiety.

2. MATERIALS AND METHODS

2.1. Literature Research

An extensive literature search has been conducted regarding Anxiety and medicinal plants used in treating anxiety; through multiple databases (Google Scholar, Science Direct, Springer Link, and PubMed) covering all published journals from 2010 to the most current. Key search items used in this study included, "medicinal plants", "medicinal herb", "Anti-Anxiety", "symptom", "herbal", and "treatment".

We have limited our search to focus on medicinal plants used in the treatment of anxiety whereby only original research papers with completed assessments are considered. Mendeley 1.19.4 was used as a database manager.

2.2. Inclusion and exclusion criteria

The search was restricted to English-language articles. All studies found during the search were independently evaluated for competence and inclusion by two different authors. After compliance with inclusion criteria, experimental research that evaluates the effect of medicinal herbs or plant components in Anxiety animals was included in the current research. Irrelevant studies or original articles that evaluated mixed plant extract, algae, or mushroom extracts were also excluded. Out of the 150 collected articles (published between 2010 and 2023), 69 were excluded due to non-relevance or lack of access to the original articles.

2.3. Data Extraction

Data extracted from each study include title, author(s), journal, year of publication, plant part and extractions, intervention (type of treatment) and standard used, methods, secondary metabolite responsible for the activity, and study results.

3. RESULTS AND DISCUSSION

3.1. Literature Review

The literature survey was done on the anti-anxiety activity of different parts of plants like flowers, leaves, barks, whole plant, fruits and shells etc. These articles range, from the year 2010-2023.

Table 3.1: Completed summary of all data extractions of selected published literature articles on medicinal plants used in the treatment of anxiety.

S. No	Name Of the Plant and Family	Part Of the Plant	Extract	Model	Secondary Metabolite Responsible for Activity	Outcome	Name of Author (Year)
1.	*Medjool Dates of Phoenix Dactylifera* F: Aceraceae	Fruit	Ethanolic extract	Elevated zero maze (EZM), marbles burying	Flavonoids and Steroids	In EZM, the results showed that chronic intake of extract at low concentrations produced considerable anxiolytic effects, determined by a significant increase in the latency to the closed area, and decrease in time spent in the closed area and an increase in the total number of entries to the open areas. On the other hand, chronic intake of high concentration did not reduce anxiety-like behaviour. In marble burning, the results showed that mice subjected to chronic intake of low concentration of the extract showed a significant decrease in marble-burying behaviour, in high concentration of the extract did not show any significant decrease in the marble-burying behaviour	Qais Jarrar *et al,* (2023)[5]
2.	*Cyanthillium cinereum.* F-Asteraceae	Leaves	Methanolic extract	Elevated plus maze (EPM), light dark box (LDB)	Alkaloid, saponin, flavonoid, terpenoids and phenol	Results showed that in EPM, and LDB, the time spent in the open arm and light area were much higher with a high dose of C. cinerea (400mg/kg) whereas it was less with a low dose (100, 200 mg/kg) and also with diazepam	Priya Patel *et al,* (2023)[6]
3.	*Ziziphus mauritiana lam.* F- Rhamnaceae	Leaves	Chloroform extract	EPM, Mirrored chamber, light dark box LDB	Pepentacyclic triterpenoid	The effect of Chloroform extract on the (EPM) was significantly increased ($p < 0.05$), as compared to control but less effective than the standard drug diazepam. In (LDB) chloroform extract increased the time spent in the light area as compared to control, which suggests that the extract possesses anxiolytic properties. Similar results were observed in the mirrored chamber model where there was a significant increase in number of entries and time spent in the mirror chamber by the chloroform extract.	Rakesh Kumar *et al,* (2023)[7]
4.	*Avocado (Persea americana) fruit* F- Lauraceae	Fruit pulp	-	EPM light–dark transition box test head dips and cage crossing	Polyphenolic compounds and flavonoids	It showed that the intake of dose AP2 and AJ2 has significantly decreased the number of head dips and cage crossing and increased the time spent in the light side in light–dark transition box test and increased time spent in the open arm in elevated plus maze test.	Farouk *et al,* (2023)[8]
5.	*Moringa oleifera* Lam F- Moringaceae	Seeds	Water-soluble lectin	EPM Open field test (OFT)	Lectins	WSMoL exerts an anxiolytic-like effect via the serotoninergic, noradrenergic, and dopaminergic pathways. WSMoL at all doses significantly reduced (22%–48%) the number of rearing responses in the OFT. In the EPM test, the WSMoL significantly reduced (30%–40%) the time spent in closed arms (1, 2, and 4 mg/kg), and increased the time spent in open arms	Patriota *et al,* (2023)[9]

						(4 mg/kg) by 35%.	
6.	*Helianthus annus L.* F- Asteraceae	Seeds	Ethanol, aqueous extracts	LDB	Phenolic and flavonoid	In LDB, animals treated with doses of EEHA, AEHA (200 and 400mg/kg) & diazepam showed reduced time spent but increase in number of entries in dark chamber and with a concomitant increase in time and number of entries in light chamber when compared with controls. Animals treated with moderate and high doses (200 and 400mg/kg) show more significant results.	Dr. G. Kiran *et al*, (2023)[10]
7.	*Neurada procumbens Linn* F- Neuradaceae	Whole plants	Methanolic extract	Light/dark exploration, EPM, hole board	Flavonoids, phenols, saponins, coumarin, tannins.	It showed a dose-dependent increase in time spent in light compartment (LDB) and in open arms (EPM)as well as increased number of head poking (HB). Hence anxiolytic activity is observed.	Ahmed Awais Khalid *et al*, (2023)[11]
8.	*Chewing Stick, Salvadora persica.* F- Salvadoraceae	Stem bark	Aqueous and ethyl acetate Sp extracts	EPM, LDB	Flavonoids, alkaloids, tannin	In EPM, both extracts significantly increased the number of entries and the time spent in the open arms. In LDT, showed an increase in the amount of time spent in the brightly illuminated compartment and increased the number of crossings between the light and dark compartments.	Rajalakshmi Vasudevan *et al*, (2023)[12]
9.	*Cinnamomum cassia* F- Lauraceae	Bark	Ethanolic & aqueous extract	EPM	Flavonoids, sesquiterpens, coumarin, terpenoids	In EPM-it showed significant increase in the time spent in the open arms and in number of entries in open arm. Hence anxiolytic activity is observed.	Arya Lakshmi *et al*, (2023)[13]
10.	*Albizia procera* F- Mimosaceae	Leaves	Methanolic extract	EPM, LDB	Tannins, saponins, glycosides, steroids, flavonoids	The results showed that Open arm entries were increased and closed arm entries were decreased in EPM. Lightbox entries were increased, and dark box entries were decreased in LDB. Hence anxiolytic activity is observed.	Faizan Noor *et al*, (2023)[14]
11.	*Duchesnea Indica* F-Rosaceae	Whole plant	Methanolic, n-hexane extract	EPM, LDB	Polyphenols, sterol, trephines, Flavonoids	The methanolic extract at 100 mg and 200 mg significantly increased the time spend in light region of light and dark model and in the open arm of EPM model. *n*-hexane extract at dose of 5 mg and 10 mg/kg significantly increases the time spend in light region of the Light and dark model and in open arm of EPM as compared to the Control group.	Mohibullah *et al*, (2022)[15]
12.	*Galinsoga parviflora* F-Asteraceae	Leaves	Ethanolic extract	Hole board, LDB, rotarod test	Alkaloids, flavonoids, sterols, terpenoids	In LDB, the extract showed an increase in the amount of time spent in the brightly illuminated compartment and increased the number of crossings between the light and dark compartments, Performance on the rotarod was unaffected. In the hole board test, the extract significantly increased both head-dip counts and head-dip duration.	Rajesh Yadav *et al*, (2022)[16]
13.	*Azadirachta indica A.* F- Meliaceae	Flower	A. indica flower extract	EPM, OFT	Flavonoid-quercetin	The stressed rats treated with A. indica flower extract at 500 mg/kg BW significantly increased the percentage of open arm entries and the duration spent in the open arms in EPM, compared to the stressed rats treated with vehicle. However, the stressed rats treated with the extract at 250 and 1000 mg/kg	Hawiset *et al*, (2022)[17]

						BW were not statistically different. In the open field test, *A. indica* flower extract at doses of 250, 500, and 1000 mg/kg BW exhibited no significant difference in the number of rearing crossings as compared to the control.	
14.	*Canarium resiniferum* F- Burseraceae	Leaves	Methanol extract	EPM Hole-board test (HBT), LDB	Alkaloids, tannins, phenols, and flavonoids	The time spent and the number of entries in the open arms were significantly increased in groups treated with MECR at 200 and 400 mg/kg. The extract at a dose of 400 mg/kg showed a head-dip count and % head-dips increase superior to that of the positive control diazepam. Animals treated with 100 mg/kg did not manifest a significant increase/decrease in the time spent in the light/dark box.	Shah *et al*, (2022)[18]
15.	*Korean Red Ginseng* F-Araliaceae	Roots	KRG extract	Marble burying test (MBT) EPM	Ginseng saponins	Increased open arm entries and time spent in it indicates anxiolytic activities in the test. The bicuculline-treated group showed a remarkable increase in the number of buried marbles, suggesting that GABA transmission was also involved. Although the number of buried marbles was also increased by flumazenil, this effect was not statistically significant.	Jungsook *et al*, (2022)[19]
16.	*Hydrocotyle umbellata L.* F-Araliaceae	Subterraneous parts	Ethanolic extract	EPM	Lignan	Treatment with HB and positive controls increased the percentage of entries and the time spent in open arms without changing the total number of entries, demonstrating that these treatments promote a preference for open arms of EPM with no alteration in the exploration of the apparatus. Furthermore, the percentage of time spent in the central platform was decreased.	Matheus *et al*, (2022)[20]
17.	*Schinus lentiscifolius* F- Anacardiaceae	Leaves	S. lentiscifolius tincture (SchT) infusion of S. lentiscifolius (SchW) essential oil of leaves of S. lentiscifolius (SchO)	OFT	Isoquercetin and rutin	Three different extracts of S. lentiscifolius (SchT, SchW and SchO) were tested in the OFT to evaluate their effects. Neither SchT nor SchW markedly affected the spontaneous locomotion of mice measured as the number of crossed lines in 5 min compared to their respective vehicles. In contrast, both doses of SchO (10 and 30 mg/kg) strongly decreased LC with respect to the vehicle and in a similar way to diazepam.	Vanegas Andrade *et al*, (2022)[21]
18.	*Lactuca Serriola* F- Asteraceae	Seeds	n-hexane chloroform, methanol, aqueous extracts	HBT, EPM, LDB	Flavonoids, phenol and terpenoids	All extracts significantly reduced the number of head dips where n-hexane extract (400 mg/kg) showed 96. 34% reduction in the tendency of head dipping when compared with the control. In elevated plus maze, were shown to lack open arms evasion, especially n-hexane extract (400 mg/kg)—which showed 456. 14%—increased the duration of open arm stay with the respective control group. The most significant effects were observed for n-hexane, chloroform at 300 mg/kg dose, methanol, aqueous extracts at 500 mg/kg dose showing 268. 13%, 210. 19%, 87. 2%, and 288. 22% increase in remaining in	Muhammad Ihsan Ullah *et al*, (2022)[22]

						the light compartment respectively in comparison to the control group.	
19.	*Psidium guajava* F- Myrtaceae	Leaves	Ethanolic extract	EPM light/dark transition (LDT) test	Alkaloids, tannins, flavonoids, saponins, anthraquinone glycosides	PLE treatment significantly enhanced exploratory activity of mice in EPM and LDT models with significant effects on monoamines, GABA and glutamate levels in the brain. The in-silico studies suggested the interaction(s) of PLE component(s) with GABAA/5-HT1A receptors as a potential mechanism of its anxiolytic activity.	Brijesh *et al*, (2021)[23]
20.	*Phyllanthus amarus & P. fraternus* F-Euphorbiaceae	Whole plant	Niranthin	EPM, Light & Dark Exploration test (L&D), LM activity	Niranthin is a lignan	In this study, Niranthin (5 and 10 mg/kg), produced significant effect in a dose dependent manner compared to Diazepam group. Also, results of 5 mg/kg groups showed that the anxiolytic activity was without any impairment in motor activity.	Atul *et al*, (2021)[24]
21.	*Tragia involucrata* L. F- Euphorbiaceae	Leaves	Methanol, ethyl acetate and n-hexane extracts	EPM	Flavonoids	Administration of these extracts resulted in higher number of open arm entry, lower number of close arm entry and higher time spent in open arm compared to control treatment ($p < 0.05$) in EPM.	Sana *et al*, (2021)[25]
22.	*Piper nigrum Linn*. F- Piperaceae	Fruits	P. nigrum essential oil	OFT, EPM	Monoterpene hydrocarbons	The number of rearing behaviours significantly reduced in OFT. The number of open arm entries and the period of permanence in the open arm increased significantly after acute administration of PNEO.	Sourav *et al*, (2021)[26]
23.	*Bombax costatum Pellegr. et Vuillet. F-Bombacaceae*	Roots	Aqueous extract	EPM, hole board test OFT	Alkaloids, glycosides, tannins, flavonoids, triterpenoids, anthraquinones, saponins phenols	Bombax costatum treated mice manifested significant and dose-dependent increases in the number of head-dipping [$p<0.001$], and dose-dependent reduction in the latency to the first head-dips [$p<0.001$] in the hole-board paradigm at the doses of 25, 50 and 100 mg/kg. Also, it decreased the mass of faecal [$P<0.01$]. At a dose of 100 mg/kg, diazepam 3 mg/kg, or buspirone10 mg/kg significantly increased this number of open arm entries to ($p<0.001$) respectively.	Ngassia Wanbara *et al*, (2021)[27]
24.	*Tinospora crispa* F- Menispermaceae	Whole plant	Methanol extract & hexane (HF) and chloroform (CF) fractions	OFT, HBT, EPM	Flavonoids, sterols, terpenoids, alkaloids, and lignans	It showed a dose-dependent significant increase of the time spent in the opened arm of the EPM, and significant decrease in locomotion in open field**,** a significantly increase in the number of head-dipping in hole board; indicating reduced anxiety	Mir Muhammad Nasir *et al*, (2020)[28]
25.	*Coriandrum sativum* F- Apiaceae	Seeds	Aqueous extract	EPM, Light-dark transition test (LDT)	Flavonoids, phenolics, alkaloids, terpenes, and steroids	The animals treated with CSE spent significantly longer time period in the open arms at all doses in EPM. and CSE at 200 and 400 mg/kg significantly improved the percentage time spent in the light area with a maximum increased observed at 400 mg/kg in LDT.	Sahoo *et al*, (2020)[29]
26.	*Opuntia ficus indica*	Fruit	Crude methanolic	HBT, EPM, OFT	Flavonoids	Ethyl acetate sub extract showed significant anxiolytic effects.	Esra Küpeli Akko

	(L.) Mill F- Cactaceae		extract + fraction like n-hexane, dichloromethane, ethyl acetate, n-butanol, and water			The other extracts and fractions did not cause a significant change in the number of head insertion into the hole. It was found to increase the duration of stay in open arms. The ethyl acetate sub extract exerted an anxiolytic effect by affecting locomotor activity 30 min after the start of the experiment.	*et al*, (2020)[30]
27.	*Dissotis thollonii Cogn.* F-Melastomataceae	Leaves	Aqueous and ethanol extracts	Elevated labyrinth, LDB, social interaction	Tannins, sterols, flavonoids, phenols, anthraquinones, and polyphenols	In elevated labyrinth, significantly increasing the time spent in the open and reducing the time spent in the closed arms. In LDB, it showed that time spent in the illuminated zone was significantly ($p < 0.001$; $p < 0.05$) increased. This increase was gradual until the end of treatment. In SI, the duration of the social interaction increased significantly ($P< 0.001$) in the animals which received the two extracts at the two doses.	Stephanie Flore Djuichou Nguemnang *et al*, (2020)[31]
28.	*Mucuna pruriens* F- Fabaceae	Seed	Mucuna pruriens extract	EPM	Gallic acid, Histidine, Alkaloids, Glutathione, Flavones	Mucuna pruriens at the doses of 200 mg/kg and 400 mg/kg significantly reduced the time spent and number of entries in closed arm, increased the time spent and entries into open arm in EPM. Hence anxiolytic activity is observed	Shobhit Singh *et al*, (2019)[32]
29.	*Mimosa pudica* F- Fabaceae	Leaves	Methanol Extract	EPM, LDB, HBT	Reducing sugar, tannins, glycoside, alkaloids and flavonoids	It indicates that treated mice at the doses of 200 and 400 mg/kg body weight increased the percentage of time spent in open arm and light area compared with the control group, and significantly decreased the number of head dipping.	Sultana *et al*, (2019)[33]
30.	*Achillea Biebersteinii* F- Asteraceae	Flowers	Methanolic extract	EPM, OFT	Thymol, p-cymene, linalool, transsabinene, terpinene-4-ol, ascaridole, iso-ascaridole, alpha-terpenine, lavndulyl-2- trans-sesquisabinene hydrate	In the present study, A. biebersteinii flower extract (400 mg/kg) increased the time spent in open arm indicating that this plant has anxiolytic effect. In open field test, the extract decreased rearing behaviour and number of lines crossed.	Abbas *et al*, (2019)[34]
31.	*Citrus Reticulata Fruit* F-Rutaceae	Fruit	Methanolic and Aqueous Extracts	EPM	Flavonoid	It showed that naringin flavones (which is the main component of Citrus reticulata) at the level of dose 3 to 10 mg/kg to have excellent anxiolytic potential with no myorelaxation, sedation, or significant reduction in locomotor activity. It is reported that at high doses of narigine shows increase open arm exploration and decrease locomotor activity as shown from reduction in close arm entries.	Abdul M *et al*, (2019)[35]
32.	*Euphorbia hirta* F- Euphorbiaceae	Leaves	Methanolic Extract	HBT EPM	Flavonoids, terpenoids, phenols, essential oil, ellagic, gallic, tannic, maleic	It significantly decreased the head dips ($p < 0.05$) and ($p < 0.05$) increase the frequency of the open arms entries and time spent in open arms when compared to the control.	S. M. Mushiur Rahman *et al*, (2019)[36]

					and tartaric acid		
33.	*Enhydra Flactuans* F- Asteraceae	Leaves	Ethanolic extract	EPM, Social Interaction test and Rota Rod test.	β-carotene, saponins, Enhydra fluctuans kaurol, sesquiterpene, germacranolide, enhydrin, fluctuanin and fluctuandi. n, myricyl alcohol, cholesterol, sitosterol, stigmasterol, glucoside, other steroids.	It showed an increase in time spent on the open arms of the EPM and the decrease in the closed arms. It showed an increase in the total time spent by the rat pairs in active social interaction. It showed the decrease in the muscle coordination while compared to the control group.	Kousik *et al*, (2019)[37]
34.	*Cocculus laurifolius* F- Menispermaceae	Leaves	Ethanolic extract	EPM, LDB, OFT, HBT	Flavonoids, alkaloids, apoporphines and quaternary bases	The extract at doses (200 and 400 mg) had the tendency to significantly increase the number of entries in open arm, and the total number of rearing as compared to the control. The percentage number of entries and time spent in the light area along with the total number of rearing were significantly greater as compared to the control. The number of centre squares crossed had been significantly increased with diazepam.	Maqbool *et al*, (2019)[38]
35.	*Thymus Kotschyans* *F- Lamiaceae*	Aerial parts	Methanolic extract	EPM, OFT	phenolic monoterpenes	*The* extract and midazolam apparently reduced total distance movement after 30 mins, but they had no significant effect on the locomotor activity of mice after 24 hrs. In the EPM test, the extract at doses more than 50 mg/kg and midazolam at the dose of 2 mg/kg significantly increased the percentage of open arms spent time comparing to the vehicle group. In the OFT, the extract at doses of 200, 400 and 600 mg/kg significantly increased the percentage of central to peripheral zone spent time in the open field area and showed anxiolytic activity comparing to the vehicle group.	Reza Jahani *et al*, (2019)[39]
36.	*Tropaeolum majus* F-Tropaeolaceae	Leaves	Hydroethanolic extract	EPM, HBT	Flavonoids (Isoquercetin, quercetin)	All HETM doses increased the percentage of entries in the open arms of the apparatus. In the HB test, in opposite to diazepam, treatment with hydroethanolic extract of *T. majus* did not interfere in the exploratory activity of rats. All HETM doses tested did not alter the locomotion of rats.	Ailton C. Melo *et al, (2018)*[40]
37.	*Datura seeds* F- Solanaceae	Seeds	Ethanolic extract	EPM	Alkaloids	The result showed that the ethanolic extract of leaves of Datura stramonium and diazepam; significantly increase in the occupancy in the open arm and showed a decrease preference for the closed arm entries. Hence anxiolytic activity is observed	Alka Tiwari *et al*, (2018)[41]

38.	*Nerium oleander* F- Apocynaceae	Flowers	Ethyl alcohol extract.	EPM, digital actophotometer models	Alkaloids, saponins, flavones, triterpenoids, steroids, tannins amino acids	The reduction in locomotor activity with 200mg/kg and 400mg/kg is significant when compared to standard group. The number of closed arm entries and time spent in the closed arms were decreased significantly. Hence anxiolytic activity is observed.	Shashikala *et al*, (2018)[42]
39.	*W. chinensis Merrill* F- Asteraceae	Leaves	Ethyl acetate fraction & hydro-alcoholic extract	EPM, LDB	Flavonoid phenols	The results of present investigation provide evidence that ethyl acetate fraction of hydro-alcoholic extract of W. chinensis has potent anxiolytic activity supporting the traditional claim of W. chinensis in the treatment of anxiety.	Kundan Singh *et al*, (2018)[43]
40.	*Cashew (Anacardium occidentale) Nut* F- Anacardiaceae	Nut shells	Ethyl acetate extract with mixture of amino acids	OFT, EPM, LDB, rota-rod test	Phenolic acid-gallic acid	The study revealed that AA exerts an anxiolytic activity without myorelaxant and genotoxic action. The results of rota-rod test showed that AA did not produce ataxia in mice at the doses of 10, 25, and 50 mg/kg. In the OF test, AA did not cause change in motor activity for all of the three dose levels tested, at the doses of 25 and 50 mg/kg, AA treated mice showed significant increase in the four parameters used to evaluate anxiety levels of the test animal, namely time spent on the open arms versus total time, distance travelled on the open arms versus total distance, number of entries in the open arms and anxiety index ($P < 0.05$) compared to the VEH group, thus demonstrating anxiolytic effect.	Gomes Júnior *et al*, (2018)[44]
41.	*Brassica oleracea L.* F- Brassicaceae	Plant	Hydroethanolic extract	EPM, HBT, Mirror Chamber.	Alkaloids, phenols, flavonoids, tannins	Hydroalcoholic extract shows dose dependent increase in the average time spent and frequency of entries in the open arms of the EPM; decreased latency, increased time spent and frequency of entries in the mirror chamber; & increased number of head dips in hole board test.	Diveent kaur *et al*, (2017)[45]
42.	*Persicaria hydropiper* F-Polygonaceae	Leaves	Methanol extract	EPM, LDB, HBT marble-burying test	Flavonoids	EPM-increase the time spent and the number of entries in open arms & in LD test it increases the time spent in the light compartment, hole-board tests -decrease the number of head dips, as well as the number of marbles burying, was significant decrease in the marble-burying test showing anxiolytic activity.	Shahed-Al-mahmud *et al*, (2017)[46]
43.	*Piper longum Fruits* F- Piperaceae	Fruit	Methanol extract	EPM, light dark exploration test OFT	Alkaloids, carbohydrates, flavonoids and tannins	The significant increase in time spent and number of entries into open arm in EPM test and reduction in time spent and number crossing into the dark compartment observed in animals pretreated with test extract in LDE & significant increase in ambulation, rearing and self-grooming and significant decrease in faecal dropping in case of open field test.	Patil VP *et al*, (2017)[47]
44.	*Capsicum annuum*	Fruit	Crude methanolic	EPM, LDB	Flavonoids such as	The crude extract (50, 100, 200 mg/ kg) produced a significant	Jawad *et al*,

	F-Solanaceae		extract and the n-hexane fraction		quercetin, myricetin, luteolin, and capsaicin	reduction in the time spent in the closed arm, the n-hexane fraction of C. annuum (5 mg/kg) showed a significant increase in the time spent on illuminated side as well as it also produced a significant increase in the transitions of mice to the light side.	(2017)[48]
45.	*Punica granatum fruit juice* F-Punicaceae	Fruit	Punica granatum fruit juice extract	EPM, HBT	Flavonoids, saponins, tannins	In EPM, all doses of PGFJ significantly increased the number of entries, time spent in open arms and decreased the number of entries and time spent in closed arms. In Hole- board model, medium and high doses (200 and 400mg/kg) showed significantly increased in the number of head dips.	Shivaraj kulkarni *et al*, (2016)[49]
46.	*Camellia sinensis*, F- Theaceae	Leaves	Aqueous extract	EPM, LDB, OFT	Polyphenols catechin, flavonoids proanthocyanidins, alkaloids amino acid polysaccharides, volatile oils, small amounts of tannin, diphenylamine, oxalic acid, trace elements, and Vitamin C.	In EPM and LDB, CS at 3. 3, 16. 5, and 33 mg/kg significantly increased the number of entries and time spent and rearing in the open arms and bright arena, respectively, compared to control. In the OFT, CS at 16. 5 and 33 mg/kg significantly increased the number of squares crossed, time spent, and the number of rears in the central squares compared to control. Anxiolytic effect was dose dependent in EPM and LDB and CS at 33 mg/kg showed better anxiolytic activity compared to diazepam (1 mg/kg) in all models.	Rajeshwari Shastry *et al*, (2016)[50]
47.	*Melanthera scandens* F-Asteraceae	Leaves	Ethanol & aqueous extract	EPM	Flavonoids, saponins, glycosides, tannins, terpenoids, phenols and phytosterols	MSAE and MSEE at the lowest dose of 250 mg/kg significantly increased the time spent in the open arm and increased entries into the open arm respectively compared to distilled water. At higher doses (500 and 1000 mg/kg), both extracts did not significantly increase the number of entries or time spent in the open arms. Animals treated with MSEE spent more time in the open arms compared to those treated with MSAE at 250 mg/kg, indicating that the MSEE had better anxiolytic activity than MSAE.	Silvano *et al*, (2016)[51]
48.	*Sida acuta*, F-Malvaceae	Leaves and stems	Ethanolic extract	EPM, OFT	Alkaloids, saponosides, coumarins, steroids tannins, phenolic compounds, polyphenol, sesquiterpene and flavonoids	Administration of SA (at dose of 500 mg/kg) significantly increased the amount of time spent and the percentage of entries in the open arms of the EPM, In the OFT, SA at doses of 50, 100, 300 and 500 mg/kg decreased rearing's.	Vasquez *et al*, (2016)[52]
49.	*Piper amalago* F- Piperaceae	Leaves	Ethanolic extract	EPM, social interaction (SI), and conditioned emotional response (CER) tests	Lignan	Extracts had significant anxiolytic activity in all behavioural tests, with the strongest activity in the SI and the CER paradigms. It suggests that the ethnobotanical use of this plant may have a pharmacological basis in its anxiolytic activity, as demonstrated in animal behaviour tests.	Mullally *et al*, (2016)[53]

50.	*Verbena officinalis*, F-Verbenaceae	Whole plant	70% aqueous-methanol extract	EPM, LDB	Flavonoids and tannins	It increased time spent by animals in open arms, while decreased time spent in closed arms. It also increased time spent by animals in light compartment, while decreased time spent in dark compartment. Hence anxiolytic activity is observed.	Touqeer *et al*, (2016)[54]
51.	*Polyherbal extract* leptadenia recticulata (rhizomes), evolvulus alsinoides (roots)	Rhizomes and roots	Ethanolic extract, acetone extract	EPM, staircase, mirror chamber	Alkaloids, flavonoids, phytosterols, gums, and resins.	The result revealed that ethanolic and acetone extract at the dose of 200mg/kg significantly produced anxiolytic action. Polyherbal extract showed significantly (P<0. 001) decrease in serotonin and norepinephrine in the whole brain of rat. the dopamine level was significantly (P<0. 001) increased by extract. The extract might potentially act by increased GABAergic activation and by modulating the serotoninergic in the CNS	A Selvan *et al*, (2015)[55]
52.	*Coriandrm sativum Linn* F-Apiaceae	Leaves	Aqueous extract	EPM	Sterols, tannins, and flavonoids	In EPM, it implied that all CS doses significantly increases the number of entries and the time spent in open arms also increased.	K Latha *et al*, (2015)[56]
53.	Urtica *urens* F-Urticaceae	Aerial part of the plant	Methanolic extract	HBT, LDB motor coordination with the rota rod test	Flavonoids, caffeoyl-esters, caffeic acid, scopoletin (cumarin), sitosterol fatty acids	The extract increased the time spent in the brightly lit chamber of the LD box, as well as increased in the number of times the animal crossed from one compartment to the other. Performance on the rota rod was unaffected. In the hole board test, the extract significantly increased both head-dip counts and head-dip duration. Urtica urens, in contrast to diazepam, had no effect on locomotion.	Zouhra Doukkali *et al*, (2015)[57]
54.	*Allium cepa linn* F- Liliaceae	Onion bulb	Methanolic extract	EPM, OFT, light & dark transition	Flavonoids	It Significantly increased in the number of entries as well as time spent in the open arm in Elevated plus maze & also increase in the number of crossings as well as time spent in light zone in LD transition. In OFT, significant reduction in latency time and increase in number of squares crossed, number of rearing as well as time spent in Central Square.	Gummalla pitchaiah *et al*, (2015)[58]
55.	*Nelumbo Nucifera* F-Nelumbonaceae	Leaves	Methanol and hydroalcoholic extracts	EPM, LDB	Alkaloids and flavonoids	It significantly increased the time spent and number of entries in open arm in EPM apparatus, and also increased the time spent in the light area and decreased the time spent in the dark area with respect to control.	Prasad *et al*, (2015)[59]
56.	*Boswellia serrata* F-Burseraceae	Gum resin	Resinous gum	Light and dark arena, EPM	Lignans, flavonoids, hydrolysable tannins, polyphenols, triterpenes, sterols and alkaloids	Mice treated with BS in a dose of 50 mg/kg have shown significant increase in the time spent in light box and decrease in time spent in dark box, in LDA model. At 200 mg/kg of BS have shown significant increase in time spent in open arm and decrease in time spent in closed arm in EPM model.	Adake *et al*, (2015)[60]
57.	*Rosmarinus officinalis* F-Lamiaceae	Whole plant	Ethyl acetate extract	EPM, LDB	Flavonoids salvigenin, rosmanol, cirsimaritin	The anxiolytic effects of Salvigenin, rosmanol and cirsimaritin significantly reduced the anxiety in mice. All the three compounds at the doses of 10, 30 and 100mg/kg significantly	Chebib *et al*, (2015)[61]

						increased the % open arm entries and time spent in open arms of the EPM and significantly increased the time spent in the light compartment and the number of transitions between LD compartments.	
58.	*Foeniculum vulgare miller* F-Umbelliferae Apiaceae	Leaves	Essential oil of the aerial part of Foeniculum vulgare miller	EPM, OFT, staircase	Anethole, limonene, linalool, pinene and eugenol	In EPM test 100 and 200 mg/kg dose of the essential oil significantly increased number of entries and time spent in open arms compared to control. In SCT these doses also reduced rearing significantly compared to controls, while only the 200 mg/kg dose significantly increased number of squares crossed at the centre in the OFT test.	Miraf Mesfin *et al*, (2014)[62]
59.	Madhuca Longifolia F- Sapotaceae	Leaves	Hydroalcoholic extract	Closed field, EPM	Flavonoids, triterpenoids, steroids, sapogenins, saponins	In closed field, there was significant decrease in the number of rearing, assisted rearing and number of squares travelled compared to the control group. In (EPM), showed significant increase in the time spent in the open arm. Hence anxiolytic activity is observed.	Harpreet Singh *et al*, (2014)[63]
60.	*Propolis* F-Rhytismataceae	-	Aqueous methanolic extract	OFT, EPM	Flavonoids, phenolic acids ester derivatives, terpenes	The locomotor activity of each group in the open field arena 50 mg/kg increased the distance travelled on the apparatus, which was similar to that of the positive control. The open arm entries increased for all propolis extract doses tested. The time spent in the open arms only increased at OEP doses higher than 10 mg/kg.	Monteiro *et al*, (2014).[64]
61.	*Ocimum gratissimum* F- Lamiaceae	Leaf	70% ethanolic extract	OFT, EPM	Polyphenols and flavonoids	We observed a decrease in defecation which is an indicator of emotionality and its reduction can be associated with anxiolytic effects of O. gratissimum administration. Mice fed with *O. gratissimum* at both doses showed a significant increase in the number of lines crossed. In elevated plus maze test the observation is based on the aversion of test animals to open spaces. The increase in time spent in open arms is considered as an anxiolytic effect.	Venuprasad *et al*, (2014)[65]
62.	*Amorphophallus paeonifoliu tuber* F- Araceae	Tuber	Petroleum ether extract	EPM, OFT, LDB	Steroids & fixed oils	The petroleum ether extract showed potent anxiolytic activity at a dose dependent manner for elevated plus maze and open field test. The extract however failed to show any significant anxiolytic activity in light and dark test.	Anindita Saha *et al*, (2013)[66]
63.	*Lantana camara L.* F- Verbenaceae	Leaves	Methanolic extract	EPM, OFT, LDB	Ursolic acida stearoyl glucoside (UASG), pentacyclic triterpenoid	It induces significant increases, both in the number of entries and time spent in the open arms, whereas decreases in the number of entries and time spent in the closed arm, proving its anxiolytic nature. The increase in the number of self-rearing, number of assisted rearing and number of squares crossed, proving its anxiolytic effect by reducing such fearful behaviour of animals in open field.	Kazmi. *et al*, (2013)[67]

						UASG may reduce the fear of animal which allows the animal to increase more the time in bright and open space.	
64.	*Bowdichia virgilioides* F- Fabaceae	Stem barks	Aqueous extract	EPM, OFT, rota rod	Alkaloids, lupeol, sitosterol, stigmasterol	In EPM, it showed that the time the animals remained in the open arms (p<0. 05) and the number of entrances into the open arms (p<0. 001) were significantly increased than compared with the controls. In the open-field test, treatments with AEBV 20, 200, and 400mg/kg was not able to alter the number of crossings and rearing's, as compared to control group. In rota rod, no gross behaviour changes or mortality was observed at the tested doses and, therefore, the extract is considered to be safe up to the dose of 1000 mg/kg.	Larissa Fernanda de A. *et al*, (2013)[68]
65.	*Couroupita Guianensisaubl* F-Lecythidaceae	Flower	Aqueous and methanolic extracts	EPM, LDB, OFT	Triterpene	In the EPM model, both the CGA and CGM extracts at 500mg/kg showed a significantly increase in the time spent on the open arms, there was a significant increase in the time spent on the illuminated side of LD apparatus, at same dose it produced a significant increase in the number of squares crossed.	Vinod H *et al*, (2013)[69]
66.	*Achyranthes aspera linn* F-Amaranthaceae	Leaves	Methanolic extract	HBT, OFT, EPM, light/dark exploration test	Alkaloids, steroids and triterpenes	The extract significantly increases the number and duration of head poking in HB test. The extract also significantly increases the time spent and the number of entries in open arm in EPM. In LDE test, the extract produced significant increase in the time spent and number of crossings and decreased the duration of immobility in light box. In OFT test, the extract shows significant increase in number of assisted rearing and the squares crossed.	Chandana C Barua. *et al*, (2012)[70]
67.	*Erythrina mysorensis Gamb.* F- Leguminosae	Stem bark	Ethanolic and chloroform extract	EPM, OFT, motor coordination by rotarod test (RRT)	Alkaloids, glycosides, steroids, saponins tannins, and flavonoids	Both extract of *E. mysorensis* exhibited significant (P < 0. 05) increase in the number of open arm entries and time spent with significant (P < 0. 05) reduction in number of entries and time spent in the closed arm in EPM. In OFT also produced significant increase in the number of rearing (P < 0. 05), assisted rearing and number of squares crossed (P < 0. 01). Rotarod test showed significant (P < 0. 01) reduction in motor activity at 45 min with diazepam and *E. mysorensis* extracts (400mg/kg)	Thandaga S Nagaraja *et al*, (2012)[71]
68.	*Allium ascalonicum Linn.* F- Liliaceae	Aerial part of the plant	Hydroethanolic extract	HBT, EPM, light/dark exploration, OFT, social interaction tests	Flavonoids, alkaloids, and terpenoids	In HBT, the extract significantly (p<0. 05, 0. 01) increased the number/duration of head dips and number of sectional crossings. In EPM, the extract significantly (p<0. 05) increased the number of entries into the open arm with corresponding reduction in number of entries into the closed arm. In the light/dark exploration test, A. the extract significantly (p<0. 05, 0. 01) increased the latency of entry into the dark box, time	Abidemi J *et al*, (2012)[72]

						spent in the light box, and number of rearing and assisted rearing. In OFT, the extract significantly (p<0. 05, 0. 01) increased the number of sectionals crossings and rearing. In the social interaction test, the extract significantly (p<0. 05) increased the number of interactions. Peak anti-anxiety effects were mostly observed at the dose of 100 mg/kg.	
69.	*Kyllinga brevifolia* F-Cyperaceae	Rhizomes	Hydro-ethanolic extract	EPM	Flavonoid glycosides kaempferol 3-O-βapiosyl-(1-2)-β-glucoside, isorhamnetin 3-O-β-apiosyl- (1-2)-β-glucoside and quercetintriglycoside (quercetin 3-O-β-apiofuranosyl-(1-2)-β-glucopyranoside 7-O-αrhamnopyranoside)	Oral treatment with 1, 10 and 100 mg/kg, significantly increased the percentage of entries (p<0. 05) and the percentage of time spent (p<0. 01). A concomitant decrease in the percentage of time spent in the enclosed arms was also observed (p<0. 01) in EPM.	Hellion Ibarrola MD *et al*, (2012)[73]
70.	*Medicago sativa* F- Fabaceae	Aerial parts leaves and stems	Petroleum ether, chloroform, methanol and aqueous extract	EPM	Saponins, sterols, coumarins, flavonoids, phenolics, vitamins, proteins, minerals, and other nutrients	Among all extracts, only the methanol extract exhibited significant ($p < 0.05$) anti-anxiety activity by increasing the average time spent, and number of entries in open arms in EPM at a dose of 100 mg/kg in mice.	Kundan Singh *et al*, (2012)[74]
71.	*Stellaria media Linn*. F-Caryophyllaceae	Aerial parts	Petroleum ether, chloroform, methanol and water	Actophotometer EPM	Flavonoids, triterpenoids, proteins, tannins, carbohydrates, fixed oils and fats	A significant increase in the locomotory behaviour of mice by the methanol extract, further confirmed its anxiolytic activity. The methanol extract at a dose of 100 mg/kg, exhibited significant anxiolytic activity as evidenced by an increase in both the time spent and the number of open arm entries in EPM.	Disha Arora *et al*, (2012)[75]
72.	*Nymphaea alba Linn*. F-Nymphaeaceae	Entire plant material.	Ethanolic extract	EPM, LDB, OFT, foot shock induced aggression test (FSIAT) and rota rod test (RRT)	Tannic acid, gallic acid alkaloids, sterols, flavonoids and glycosides	The ethanolic extract of N. alba significantly increased the time spent and number of entries in the open arm in EPMT. In LDT extract produced significantly increased in the time, number of crossing and decrease in the duration of immobility in the light box. In OFT test extract showed significantly increase in the number of rearing. In FSIAT extract attenuated aggressive behaviour related to anxiolytic activity, such as no. of vocalization leaps, rearing attack and facing each other in paired mice. The extract produced skeletal muscle relaxant assessed by RRT.	B. S Thippeswamy *et al*, (2011)[76]
73.	*Actaea spicata linn*, F-Ranunculaceae	Dried root	Petroleum Ether, Chloroform,	EPM	Alkaloids and Polyphenols	Among the extracts tested, maximum anxiolytic activity was observed in the methanol at the dose of 100mg/kg.	Reecha Madaan *et al*,

			Methanol, Water extract				(2011)[77]
74.	*Equisetum arvense Linn*. F-Equisetaceae	Stems	Petroleum ether, chloroform, ethanolic, water extract	EPM	Flavonoid content of the ethanolic extract	The ethanolic extract of E. arvense (50 and 100 mg/kg) significantly increased the time-spent and the percentage of the open arm entries in the elevated plus-maze model which was comparable to diazepam.	Singh N. *et al,* (2011)[78]
75.	*canscora decussata* F-Gentianaceae	Aerial part of the plant	Ethanolic extract	EPM, open field exploratory	Triterpenes, alkaloids, xanthones	In EPM- all the 3 doses showed an anxiolytic effect as evidenced by increase in the time spent and the number of the open arms entries, compare to a control group. The OFT was also increased on administration of the extract. The ethanolic extract of CD in a dose of 400 mg/kg shown sufficient anxiolytic activity.	Neeraj K *et al,* (2010)[79]
76.	*Passiflora edulis* f. *flavicarpa*, F-Passifloraceae	Aerial part	Ethanolic extract (EE) petrol ether extract (PEE), ethyl acetate extract (EAE), *n*-BuOH extract (BE) and aqueous extract (AE),	EPM	Flavonoids	It induced a selective anxiolytic-like effect in mice characterized by a significant increase in the number of open arm entries.	Deng *et al,* (2010)[80]
77.	*Valeriana officinalis*. F-Caprifoliaceae	Roots	Valerian extract	EPM	Valerenic acid	Results showed that there was a significant reduction in anxious behaviour when valerian extract or valerenic acid exposed subjects were compared to the control group. The evidence supports *Valeriana officinalis* as a potential alternative to the traditional anxiolytics as measured by the EPM.	Kubin *et al,* (2010)[81]
78.	*Cymbopogon citratus*. F- Poaceae	Leaves	Methanolic extract	EPM	Flavonoids	It increased the percentage of time-spent and the percentage of arm entries in the open arms and decreased the percentage of time-spent in the closed arms of EPM. Also, the locomotor activity was affected but not to the same extent as observed for diazepam.	Shah *et al,* (2010)[82]
79.	*Ocimum sanctum* F-Lamiaceae	Leaves	Ethanolic extract	EPM LDA	Flavonoids, saponins and tannins	A significant increase in the time spent and the rears in open arms and the percentage ratio of open/ total arm entries. They showed a decrease in time spent in closed arms of EPM. They also showed an increase in the time spent and the rears in bright arena and a decrease in the duration of immobility in the bright and dark arena.	Sudhakar Pemminati *et al,* (2010)[83]
80.	*Cedrus deodara roxb* F- Pinaceae	Heart wood	Alcoholic extract	EPM, LDB and actophotometer	Alkaloids, tannins, phenolic	In (EPM), the ALCD at a dose of 100 and 200 mg/kg significantly increased the number of entries and time spent into the open arms. The magnitude of the anxiolytic effects	D. Dhayabaran *et al,* (2010)[84]

						was comparable to that of diazepam 3 mg/kg. In LDT, 100 and 200 mg/kg dose of ALCD has significantly increased the time spent in light box and decreased total locomotion confirming anxiolytic activity of ALCD. The average Actophotometer reading after 60 min significantly reduced the locomotors activity.	
81.	*Gelsemium sempervirens* F-Gelsemiaceae	Dried roots and rhizomes	Petroleum ether, chloroform, methanol, and water extracts	EPM	Alkaloids, steroids, and glycosides	The methanolic extract increased the number of entries and time spent in open arms. Since the other plant extracts, i. e., petroleum ether, chloroform, and water extracts, did not produce meaningful effects in the EPM test, therefore only the methanolic extract of *G. sempervirens* was processed further for pharmacological investigation. Maximum anxiolytic activity of the methanol extract was confirmed at the dose level of 150 mg/kg.	Vandana Dutt *et al*, (2010)[85]

CONCLUSION

According to published results, the present study validated the use of plants in the management of anxiety, it can be said that medicinal plants are more affordable, and have fewer side effects compared to synthetic drugs and are more effective in the treatment of Anxiety.

The rich reservoir of bioactive compounds found in medicinal plants holds promise for addressing the multifaceted nature of anxiety disorders, presenting an avenue for innovative and holistic approaches to mental health.

While further investigation is warranted to solidify the understanding of specific plant-based treatments, the findings highlight the relevance of exploring natural remedies in addressing the complex challenges of anxiety disorders.

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