

**MEDICINAL PLANTS USED IN ADDICTION AND THEIR ROLE IN
ADDICTION TREATMENT: A REVIEW**

**Varalakshmi Lattupally^{1*}, Polikala Pavithra², Attaluri Sree Hari Priya³, Rachabanti
Laxmi Kumari⁴ and Md Niyaz Ahmed⁵**

^{*1}Netaji Institute of Pharmaceutical Sciences. Approved By PCI, JNTUH, Toopranpet,
Choutuppal, Hyderabad, Telangana, India.

^{2,3,4,5}Avanthi Institute of Pharmaceutical Sciences, Approved by PCI, NAAC, JNTUH,
Gunthapally, Hayath Nagar, Hyderabad, Telangana, India.

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***Corresponding Author**

Varalakshmi Lattupally

Netaji Institute of
Pharmaceutical Sciences.
Approved By PCI, JNTUH,
Toopranpet, Choutuppal,
Hyderabad, Telangana,
India.

ABSTRACT

Medicinal plants are used to treat various diseases and these plants are increase in demand because of less cost, easy availability, and effective to treat diseases. Active constituents which are present in medicinal plants are responsible to treat various diseases. Some medicinal plants are used to treat diseases but these plants cause addiction such as morphine, heroin etc. some medicinal plants used in addiction treatment or Deaddiction such as Passiflora incarnata, Tabernanthe iboga etc. The aim of review is to provide medicinal plants shows addiction and their role in addiction treatment or deaddiction properties.

KEYWORDS: medicinal plants, Active constituents, Addiction, Deaddiction.

INTRODUCTION

The definition of addiction is "the condition of being addicted to a particular substance, thing, or activity." Medically, it may be defined as a chronic, relapsing condition, characterized by a compulsive drug-seeking behavior, continued use despite harmful consequence, and long-lasting changes in the brain.^[1]

Drug addiction is a major problem in the world. Three main types of addiction are Physical addiction, behavioral addiction, and impulse control disorders. Physical addiction refers to

disorders characterized by chronic or persistent use of tolerance-forming drugs and addictive substances. Several types of physical addiction are alcohol addiction, tobacco addiction, opioid addiction, marijuana addiction, prescription drug addiction, inhalant addiction, amphetamine addiction, cocaine addiction, and hallucinogen addiction. Behavioral addiction: Food addiction, Exercise addiction, Work addiction, gambling addiction etc. Impulse control disorders include intermittent explosive disorder, Kleptomania, Pyromania, Trichotillomania, Dermatillomania etc.^[2]

Drug addiction affects both brain and behavior. It has multifaceted impacts on patient's body, mind, and nervous system.^[3] World drug report 2023 concluded that 296 people abused drugs, 39.5 million became addiction. Addiction has become a growing problem that affects individuals, their families, societies, countries and even the world. However, treatment for addiction is only limited to some developed countries because of high cost, difficult implementation, and time consuming.^[4]

Medicinal plants are rich source of therapeutic compounds and can be choice for addiction treatment. Many studies showed that several plants are effective in the treatment or alleviation at different levels.^[5]

MATERIALS AND METHODS

Plants play an important role in human life as source of food and medicine. Different medical plants have been used for years to treat disease. Medicinal plants play essential role primary health care. Medicinal plants have different chemical constituents responsible to treat various diseases because of addiction properties of certain plants they are limited to use only in particular situations. Medicinal plant are used in addiction such as *Nicotiana tabacum*.^[6,7] *Salvia Divinorum*,^[8,9] *Papaver somniferum*^[10], *Cannabis sativa*,^[11] *Areca nut*,^[12,13] *Lophophora williamsii*,^[14,15] *Coca*,^[16,17] *Psychotria Viridis*,^[18] *Banisteriopsis caapi*,^[19] coffee plant.^[20]

Medicinal plants plays important role in addiction treatment or have potential deaddiction properties^[21] such as *pueroria lobate*.^[22,23] *Hypericum perforatum*.^[24] *Tabernanthe iboga*,^[25] *Panax ginseng*,^[26] *Salvia miltiorrhiza*,^[27,28] *Passiflora incarnata*^[29] *Silybum marianum*.^[30] *Andrographis paniculata*.^[31] *Sinomenium acutum*,^[32,33] *Corydalis yanhusuo*,^[33] *Hovenia dulcis*,^[34] *Oenothera bienni*.^[35]

Medicinal Plants with Addiction Property

S.no	Plant Name	Common Name	Family	Active Constituents	Effects
1	Nicotiana tabacum	Tobacco	Solanaceae	Nicotine	Nicotine caused tremors leading to convulsions at toxic doses, Increased risk of various cancers, Reproductive issues, Oral health problems
2	Salvia divinorum	A Sage plant	Lamiaceae	Salvinorin A	Anxiety, short but intense hallucinations loss of energy (higher doses can cause sedation), confusion, delusion feelings of impending doom, uncontrolled body movements, changes in visual perception
3	Papaver somniferum	Opium Pappy	Papaveraceae	Morphine, Codeine, Noscapine, Thebaine, Papaverine	Long-term opioid use can damage various organs, including the liver, kidneys, and Heart. Mental Health Issues: depression, anxiety, and psychosis. Social Problems
4	Cannabis Sativa	Cannabis	Cannabaceae	Tetrahydrocannabinol (THC) and cannabidiol (CBD)	several adverse psychosocial features, including lower Educational achievement, Permanent cognitive Impairment, physical health risks, particularly the possibility of damage to the airways in cannabis smokers
5	Areca nut (Fruit of the Areca catechu)	Betel nut	Arecaceae	Arecoline	Hyperlipidemia, vasospasm and cardiac arrhythmia, Chronic areca nut consumption causes Hypothyroidism, prostate Hyperplasia, infertility and Vitamin D deficiency, increased risk of oral cancer
6	Lophophora williamsii	Peyote	Cactaceae	Mescaline.	Reoccurrence of hallucinogenic effects, persistent psychosis, anxiety, and depression.
7	Coca plant (Erythroxylum coca)	Coca	Erythroxylaceae	Cocaine	Headaches, Belly pain, Damage to your lungs and other organs, Bowel decay if you swallow it, Loss of smell, nosebleeds, runny nose, and trouble swallowing if you snort it, Convulsions and seizure, heart attack, Parkinson's disease, Kidney issues
8	Psychotria Viridis	Chacrona	Rubiaceae	DMT (N,N-Dimethyl	Dizziness, confusion, tiredness, and increased sensitivity to visual

				tryptamine	and auditory stimuli
9	Banisteriopsis caapi	Caapi	Malpighiaceae	β-carbolines: Harmine, Harmaline and Tetra hydroharmine	Nausea, vomiting, moderate cardiovascular effects such as alteration in blood pressure and heart rate
10	coffee plant (Coffea Arabica)	Coffee	Rubiaceae	Caffeine	Dizziness, Feeling shaky, Headache Increased blood pressure, Nervousness Racing heart, or other heartbeat abnormalities Sleep issues

Medicinal Plants In Addiction Treatment or Deaddiction

S no	Plant Name	Common Name	Family	Active Constituents	Addiction Treatment/ Deaddiction
1	Pueraria lobata	Kudzu	Leguminosae	Isoflavones: daidzein and daidzin	Treat alcohol abuse. chronic alcoholism
2	Hypericum perforatum	St. John's wort	Hypericaceae	Phloroglucin derivative: hyperforin	Alleviating Alcoholism and effective in reducing the rewarding effects of cocaine
3	Tabernanthe iboga	Tabernanthe	Apocynaceae	Alkaloid: ibogaine	Reduces the frequency of alcohol use and the amounts consumed use in the treatment of opioid addiction
4	Panax ginseng	Ginseng	Araliaceae	Triterpenoid saponins Ginsenosides	Clinically useful for the prevention of opioid and psychostimulant abuse and dependence, decreases alcohol consumption.
5	Salvia miltiorrhiza	Danshen	Lamiaceae	Tanshinones: Tanshinone IIA, cryptotanshinone, miltiron	controlling excessive alcohol consumption
6	Passiflora incarnata	Purple passionflower	Passifloraceae	Benzoflavone moiety	Decrease the intensity of Nicotine or Alcohol withdrawal symptoms prevention of chronic alcohol and nicotine-induced azospermia
7	Silybum marianum	Milk thistle	Asteraceae	Flavonolignans complex: e.g. Silymarin	Treatment of alcohol, treatment of alcoholic liver disease
8	Andrographis paniculata	Kalmegh	Acanthaceae	Labdane Diterpenoid: Andrographolide	Protection of liver damaged by consumption of ethanol
9	Corydalis	Yanhusuo	Papaveraceae	Corydaline	Prevention and treatment of

	yanhusuo				opioid abuse and addiction
10	Sinomenium acutum	Menispermum acutum	Menispermaceae	Sinomenine	Treatment for morphine addiction
11	Hovenia dulcis	Japanese rasin tree	Rhamnaceae	Flavonoid: Hovenodulinol	Treatment of alcoholism and alcohol-related liver diseases.
12	Oenothera bienni, O. Paradoxa	Evening primrose	Onagraceae	GLA (an omega-6 fatty acid)	Alcohol dependence treatment PGE1 levels are reduced in alcohol addict

SUMMARY AND CONCLUSION

Medicinal plants such as *Nicotiana tabacum*, *Salvia Divinorum*, *Papaver somniferum*, *Cannabis sativa*, *Areca nut*, *Lophophora williamsii*, *Coca*, *Psychotria Viridis*, *Banisteriopsis caapi*, coffee plant. plants family, Effects, chemical constituents responsible for addiction and also reported medicinal plants used for addiction treatment or de-addiction include *pueroria lobate*, *Hypericum perforatum*, *Tabernanthe iboga*, *Panax ginseng*, *Salvia miltiorrhiza*, *Passiflora incarnate*, *Silybum marianum*, *Andrographis paniculata*, *Sinomenium acutum*, *Corydalis yanhusuo*, *Hovenia dulcis*, *Oenothera bienni*.

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