

REVIEW ARTICLE

Review on Clinical Perspective of Multiple Substance use Disorder and its Ayurvedic Management

K. Dhanya¹, M. Jithesh^{2*}

¹MD Scholar, Department of Manasroga, VPSV Ayurveda College, Kottakkal, Kerala, India.

²Professor and Head, Department of Kayachikitsa and PG Studies in Manasroga, VPSV Ayurveda College, Kottakkal, Kerala, India.

ARTICLE INFO

Article history:

Received on: 03-01-2024

Accepted on: 11-02-2024

Available on: 29-02-2024

Key words:

CBT,
Family therapy,
Madatyaya,
Multiple substance use,
Rasayana,
Satvavajaya,
Withdrawal

ABSTRACT

Background: Substance use disorder (SUD) is a condition in which there is uncontrolled use of a substance despite harmful consequences. Multiple Substance Use Disorders (MSU) include two or more substances taken together or within a short time period, either intentionally or unintentionally. This may lead to problems such as health issues, disability, failure to meet work responsibilities, and difficulties at school and home. Studies have concluded that opiates, cannabis, amphetamines, hallucinogens, inhalants, and benzodiazepines are often used in combination as well. This leads to social, academic, and occupational impairment, along with possible negative health effects. Individuals who abuse one substance are more likely to use other substances as well. Among those aged 12 or older, 61.2 million people (i.e., 21.9% of the population) used illicit drugs in the past year.

Objective: To highlight the Ayurvedic clinical perspective in the management of multiple SUDs.

Method: In Ayurveda, SUD may be approached by adapting the management principles of madatyaya after assessing the dosha combination as per the clinical presentation. Several combinations useful for the management of the condition, including addiction and withdrawal management, are explained. Ashtanga Lavana, Ajmodarka, Sreekandasava, and Drakshadi Kwatha are some of the medicines used internally to reduce withdrawal symptoms. Panchakarma therapies, along with yoga and Satvavajaya Chikitsa, including family therapy, have a very good outcome in managing substance withdrawal, dependence, and even preventing relapse.

Results: By adopting the Ayurvedic principles, the outcome of MSU management may be enhanced, and the relapse may also be possible to reduced with the biopsychosocial approach.

Conclusion: Evidence-based clinical studies are the need of the hour so as to prove the authenticity of such a clinical perspective explained in Ayurvedic parlance.

1. INTRODUCTION

Multiple Substance Use Disorders (MSU) result from long-term exposure to more than one substance and the resulting physical, mental, and social consequences. An individual uses two or more drugs simultaneously or within a short period of time. Combined drug intoxication can occur with alcohol, drugs, and even prescription medications. This leads to social, academic, and occupational impairment, along with negative health effects. Alcohol and tobacco are the most common substances in abuse, followed by sedatives, tranquilizers, cannabis, amphetamine,

opiates, and cocaine. Drug abuse is a serious public health problem that affects almost every community and family in one way or another. It plays a contributing role in several major social problems, such as drugged driving, violence, stress, and even child abuse. It can lead to homelessness, crime, missed work, or problems with keeping a job. It harms unborn babies and even destroys families. In many cases, criminal or anti-social behavior occurs when the person is under the influence of a drug and may result in long-term personality changes.^[1]

Easy availability of certain drugs, self-medication, curiosity, and peer pressure are the common motives for drug abuse. The Adverse Childhood Experience Study demonstrated that exposure to a range of traumatic events during childhood is associated with an increased risk of SUD in

Corresponding Author:

M. Jithesh, MD, Scholar, Department of Manasroga, VPSV Ayurveda College, Kottakkal, Kerala, India.

Email: drjitheshm@gmail.com

later life. Studies also show that individuals who abuse one substance are more likely to abuse other substances as well. In the last year, among those aged 12 or older, 61.2 million (21.9 percent of the population) used illicit drugs.^[2] The most commonly used drugs was marijuana, used by 52.5 million people. Nearly 2 in 5 young adults between 18 and 25 used illicit drugs, and 1 in 3 young adults used marijuana in the past year.^[3]

SUD is a treatable mental disorder that affects a person's thinking and behavior, leading to their inability to control their use of substances, including legal or illegal drugs, alcohol, or medications, even when they are aware of the consequences.^[4] MSU involves the purposeful or unintentional mixing of drugs, alcohol, or prescription medications. Despite serious consequences, a person may continue to use and combine the drugs. MSU can be especially harmful and increase the risk of mental and physical health issues, overdose, or even death.

The most common illicit substances include cannabis, sedatives, hypnotics, anxiolytics, inhalants, opioids, hallucinogens, and stimulants. The specific factors of SUD consist of abuse, intoxication, and physical or psychological dependence. Various substances can be classified based on their effects on the central nervous system, and the symptoms manifest accordingly. To manage these disorders, a combination of pharmacological and non-pharmacological therapies is helpful on an individualized basis.

In Ayurveda, substance abuse is to be identified as per the clinical presentation. The detailed history is to be taken from the accompanying person as well. A thorough mental status examination is done, and based on the severity, a protocol is formulated on an individual basis as per the Ayurvedic examination. As per the dosha, a sodhana-based protocol is framed, followed by samana, rasayana, yoga, satvavajaya, and even family counseling and support. The medicines are also decided based on the dominance of the doshas resulting from MSU. There is scope for complementary practices to enhance the reported outcome of contemporary management.

2. CLINICAL PRESENTATION

Signs of MSU include, but are not limited to:^[5]

- Mood swings
- Changes in behavior
- Intoxication
- Overdose
- Falling behind or neglecting personal and professional responsibilities
- Difficulty maintaining relationships
- Legal and financial trouble
- Health problems
- Engaging in drug-seeking behavior

A person dealing with MSU may notice the following symptoms:

- Cravings and urges to use substances
- Thinking about and planning to use substances
- Difficulty controlling substance use
- Tolerance or needing to mix or use greater amounts of substances to achieve desired effects
- Symptoms of withdrawal after stopping use
- Anxiety, depression, and isolation
- Personal and relational consequences (trouble at home, work, school, or in relationships)

3. MULTIPLE SUBSTANCE USE DISORDER (SUD)-STAGES

There are four stages in almost all types of MSU: acute intoxication, drug dependence, withdrawal state, and harmful use.^[6]

3.1. Acute Intoxication

Acute intoxication is a transient condition resulting in disturbance of the level of consciousness, cognition, perception, behavior, or other psycho-physiological functions and responses. It is usually associated with a high level of substance in the blood.

3.2. Drug Dependence

Substance dependence describes the use of drugs or alcohol that continues even when significant problems related to their use have developed. Signs include:

- Tolerance to or need for increased amounts of the drug to get an effect
- Withdrawal symptoms that happen if one decreases or stops using the drug that they find difficult to cut down on or quit
- Spending a lot of time to get, use, and recover from the effects of using drugs
- Withdrawal from social and recreational activities
- Continued use of the drug even though aware of the physical, psychological, familial, or social problems caused by drug use.

3.3. Withdrawal State

This state is the combination of physical and mental effects a person experiences after they stop using or reduce their intake of the substance. Changes in appetite, changes in mood, chills or shivering, congestion, depression, fatigue, irritability, muscle pain, nausea, restlessness, shakiness, sleeping difficulties, sweating, tremors, and vomiting are some of the withdrawal symptoms. In some instances, more severe symptoms, such as hallucinations, seizures, and delirium, may also occur. The type of drug, the amount or time of intake, and the dosage can all affect the type and severity of the symptoms experienced by a person.

3.4. Harmful Use

It is characterized by continued drug use despite awareness of the harmful medical and/or social effects of the drug being used and/or a pattern of physically hazardous use of the drug (e.g., driving during intoxication). The presentation of the stage varies as per the substance in use.

4. MANAGEMENT

The management has to be planned in a systematic manner. The initial approach is observing all the types of substance use, initial screening, ongoing monitoring, educating subjects on the risks of polysubstance use, and continuing treatment of their identified substance use problem. Managing polysubstance dependence has many critical aspects, such as assessing for suicidal ideations at the beginning of engagement and throughout the treatment. Following the same, offering concurrent substance use treatment, screening, and treating co-occurring mental health problems are to be done.

Treatment must be individualized and extend up to a sufficient amount of duration to ensure the patient has gotten rid of the addictions and to ensure the prevention of relapse. Addiction experts may suggest detoxification, inpatient, intensive outpatient, and aftercare as options based on the condition. Treatment involves medications, counseling, behavioral therapies, and/or mutual support groups, or a combination of these. Cognitive behavioral therapy (CBT) helps to manage depression and anxiety caused by MSU. Rehabilitation from MSU is a lengthy and difficult process. It is a good idea that recovering addicts

continue to attend social support groups or meet with counselors to ensure they do not move on to relapse.^[7]

During their stay for treatment, patients often learn to manage and identify their substance addictions and to find alternate ways to cope with whatever reason is the cause of their addiction. Outpatient treatments include similar activities offered in an inpatient treatment facility, but the patient is not protected by the secure and safe environment of an inpatient treatment center. For this reason, they are significantly less effective.

Both in-patient and out-patient treatments can offer introductions to group therapy programs such as Alcoholics Anonymous and Narcotics Anonymous. They offer regular meetings where members can discuss their experiences in a non-judgmental and supportive manner. Patients are also offered with one-on-one counseling sessions and also CBT. Medications can be very helpful in the long-term management of dependence and also in helping to prevent or reduce substance cravings. Another benefit of medications is that they help prevent relapse. People with MSU require medications as per the substance they use, as the current medications do not treat all SUDs simultaneously.^[8]

5. AYURVEDIC APPROACH

Madakari dravya is being explained in Ayurveda, which resembles substance and its use, and the resulting condition is termed mada. The drug that overshadows the intellect of a person by its properties, especially due to the predominance of tamo guna, is defined as madakari.^[9] Mada resembles the intoxication resulting from the substance. All the intoxicants have such a direct effect on the intellect that they overshadow it, and the person loses the analytical capacity or decisiveness, the main function of the intellect.

Madya was the most commonly available substance during that period, and the other narcotics fall under the category of madakari drugs. The detailed description of madya, with its properties, benefits, and harmful effects of consumption, mode of use, factors to be considered in stages of alcoholic intoxication, various resulting complications, and their stage-wise management, is being explained.^[10] Acharyas has also mentioned the logical usage of a few of the substances as medicine in a positive manner. Abuse of substances such as opium, cannabis, nicotine, etc. is not mentioned as such in Ayurvedic literature but can be categorized or better explained under the context of madatyaya.

6. STAGES OF INTOXICATION

Four stages are mentioned that are applicable to all the madakari drugs.^[11] These are mentioned in Table 1.

7. AYURVEDIC MANAGEMENT

The management includes an individualized approach based on the substance used, characteristic symptoms, and assessment of the status of the doshas as well as peculiarities as per Ayurvedic clinical examination. The protocol is to be framed based on the severity and chronicity of MSU. Panchakarma therapy, followed by internal medications along with yoga and Satvavajaya Chikitsa, is observed to have a better clinical outcome.

A person who is not in control of his own mind and starts drinking and stops at once has physical and mental problems, which are referred to as withdrawal symptoms. Withdrawal symptoms vary according to the drug of dependence and severity of dependence, but often include nausea, vomiting, diarrhea, anxiety, and insomnia.

Psychological withdrawal symptoms include depression, anxiety, reduced motivation, difficulties experiencing pleasure, apathy, and even more serious symptoms, such as the development of hallucinations and delusions.^[12] Withdrawal has to be addressed initially, followed by dependence management.

The general principles of management for MSU, including alcohol, are similar. Treatments for specific substances may differ as the problems associated with drug abuse are different. Ayurveda aims at improving an individual's self-healing abilities. Moreover, Ayurvedic treatments tend to be more personalized as it treats according to one's dosha, agni, bala, satva, etc., which differ from one patient to another.^[13] Ayurveda aims at providing a perfect solution for addiction issues. Pharmacological and non-pharmacological treatments are the main two steps following in clinical level, under which initially the treatment of withdrawal, dependence, and cravings is followed by measures of rehabilitation.

7.1. Pharmacological Approach

The goal of an ideal management program is to discover and heal the underlying causes of dependency on drugs. Pharmacotherapeutic intervention has an important role in the management of MSU. It is important not only in the withdrawal treatment but also in the long-term management, especially for the prevention of relapse. While stopping the abuse of drugs, the resulting manifestations have to be observed and managed. Combinations such as Sreekhandasava and Kharjooradi Mantha are useful here.^[14]

7.1.1. Withdrawal management

Symptomatic management of withdrawal and drug addiction can be done through the process of detoxification, which will minimize the withdrawal effect. Ashtanga lavana, Ajamodarka, and Drakshadi kwatha are used internally to minimize the possible withdrawal symptoms. Panchakarma procedures such as virechana, sirovirechana, and sirodhara with suitable medicines are observed to be effective in reducing withdrawal symptoms.

Nausea or vomiting is the most common withdrawal symptom seen in opium, cannabis, alcohol, and amphetamine. In this case, powdered Ela is used, which is indicated by vomiting.^[15] If there is a headache, Choorna of Pippali is the drug of choice, administered on an empty stomach with ghee, honey, or butter.^[16] Ache of bones or joints is commonly complained of in opium withdrawal, for which Ajamoda (*Apium leptophyllum*) powder is effective.^[17] The loss of appetite and indigestion during the withdrawal can be best managed with panchakola churna.^[18]

If a patient is having excessive hunger, then Apamarga kshira or even gritha is to be administered. Diarrhea is seen in many drugs in withdrawal, managed with Bilvadi lehya.^[19] If the patient is suffering from abdominal cramps, a mixture of mint and lime juice (1:1 teaspoon) with a few drops of ginger juice and a pinch of black salt is ideal.^[20]

Anxiety and agitation are the common psychological manifestations generally seen in all types of drug withdrawal, managed by the use of Sarasvata Choorna with honey and ghee.^[21] Mandookaparni Choorna is also very effective in similar situations.^[22] Many of the drug withdrawal symptoms manifest as insomnia or sleep disturbance, especially in cannabis, cocaine, and tobacco. Pippalimoola yoga with guda and Mahapaisachika gritha helps to relieve this problem.^[23] Many patients suffering from constipation in withdrawal can be best managed by Katuki (*Picrorhiza curroa*) ksheera, a good purgative.^[24]

7.1.2. Dependence management

For dependence and intoxication, shodhana therapy followed by shamana drugs provides better relief. Vamana, virechana, nasya, and vasthi are the main shodhana therapies useful in such conditions. Virechana is the most useful panchakarma therapy to treat addiction disorders. Virechana is known to cleanse the gastro-intestinal tract, purify the toxins from the blood, and also pacify all the doshas. It helps decontaminate the spleen, stomach, liver, kidneys, colon, intestines, and sweat glands through laxatives such as castor oil, Avipathi churna, etc.^[25] Vamana may be administered in cases of Kapha dominance with drugs such as madana, vacha, yashti, etc.^[26]

Rasayana therapy is another useful approach for managing drug abuse and addiction. It improves mental as well as physical characteristics, the body's natural metabolic processes enhancing the immune system, and brain function. Medhya rasayana, especially sankhapushpi, guluchi, and Brahmi, was observed to be effective in reducing cravings for dependence.^[27]

7.2. Non-pharmacological Approach

Ayurvedic psychotherapy, or Satvavajaya Chikitsa has a very important role in de-addiction and also in the prevention of relapse. It is mentioned in Ayurveda so as to provide the awareness of the ill effects of drug addiction and provide the willpower to come out of drug addiction. Pranayama and selected asanas, especially Anuloma viloma and Bhramari pranayama, help the patient calm down mental stress while increasing alertness.^[28] The AYUSH yoga module on mental health is being used in SUDs in the usual manner.^[29] The daily schedule has a very imperative role in the rehabilitation of the patient.

Recreational therapy helps improve physical, emotional, and cognitive quality, which is mentioned as harshana chikitsa in Ayurveda.^[30] As the psychological manifestation of SUD is similar to the psychological clinical manifestation of drug withdrawal, Shirodhara, meditation, yoga, and psychological counseling should be provided for the purpose of rehabilitation as well. Along with the same, family therapies and group therapies such as Alcoholic Anonymous are also provided to the patient. Social support is also crucial in rehabilitation, where the sadvritta principles have to be incorporated along with the social awareness of the situation.^[31] SUD manifestation varies from drug to drug of use; hence, it should be managed symptomatically and as per the disorder.

8. DISCUSSION

In Ayurvedic classics, improper or excessive use of any substance, including alcohol, is discussed under the context of madathyaya. There is disequilibrium of all three doshas in the pathogenesis, and the condition is diagnosed based on the predominant dosha as per the clinical presentation. The principles of management are to be based on those of Madathyaya. Initially, the withdrawal symptoms are to be addressed, followed by the dependence symptoms and measures to avoid relapse.

Panchakarma procedures such as nasya, virechana, abhyanga, and shirodhara with suitable medicines are observed to be effective in reducing withdrawal symptoms, along with internal medicines. For dependence and intoxication, shodhana therapy followed by shamana oushadha provides better relief. Vamana, virechana nasya, and vasthi are the main shodhana therapies useful in such conditions, as per the predominance of the dosha.^[32] Prevention of relapse should be done with rasayana, yoga, and satvavajaya measures. Familial support is to

be ensured with familial education as well as counseling during the therapy.^[31] A conditional multidisciplinary approach is quite useful in the management of multiple SUDs.

9. CONCLUSION

Combined drug intoxication can occur with alcohol, drugs, and prescription medication. Improper use of madakaridrug results in mainly 4 stages, such as stimulation, excitement, delirium, and finally coma. An integrated approach, which includes panchakarma therapy followed by internal medications along with yoga and satvavajayachikitsa, is having a promising effect on MSU. The management approach includes stagewise assessment as per substance, severity, and chronicity, as well as individual peculiarities. After the management of intoxication, rehabilitation of the affected is the responsibility of the managing physician. A biopsychosocial approach is to be adopted here for a better outcome. Further studies are the need of the hour so as to provide more evidence on the efficacy of such integrated approaches in SUD.

10. ACKNOWLEDGMENTS

None.

11. AUTHORS' CONTRIBUTIONS

All the authors contributed equally to the design and execution of the article.

12. FUNDING

Nil.

13. ETHICAL APPROVALS

This study does not require ethical clearance as it is a review study.

14. CONFLICTS OF INTEREST

Nil.

15. DATA AVAILABILITY

This is an original manuscript, and all data are available for only review purposes from the principal investigators.

16. PUBLISHERS NOTE

This journal remains neutral with regard to jurisdictional claims in published institutional affiliations.

REFERENCES

1. Graae C. A short note on substance abuse. *J Alcohol Drug Depend* 2022;10:362.
2. Perry CJ, Zbukvic I, Kim JH, Lawrence AJ. Role of cues and contexts on drug-seeking behaviour. *Br J Pharmacol* 2014;171:4636-72.
3. Sharma D. Understanding Drug Abuse and Addiction. United States: National Institute on Drug Abuse; 2012. Available from: <https://nida.nih.gov/publications/drugfacts/understanding-drug-use-addiction> [Last accessed on 2015 Feb 12].
4. International Classification of Diseases 11th Revision - ICD-11. Disorders Due to Substance use or Addictive Behaviours. Geneva: World Health Organization; 2023. Available from: <https://icd.who.int/en>. [Last accessed on 2023 Apr 10].

5. Cicero TJ, Ellis MS, Kasper ZA. Polysubstance use: A broader understanding of substance use during the opioid crisis. *Am J Public Health* 2020;110:244-50.
6. McLellan AT. Substance misuse and substance use disorders: Why do they matter in healthcare? *Trans Am Clin Climatol Assoc* 2017;128:112-30.
7. John WS, Zhu H, Mannelli P, Schwartz RP, Subramaniam GA, Wu LT. Prevalence, patterns, and correlates of multiple substance use disorders among adult primary care patients. *Drug Alcohol Depend* 2018;187:79-87.
8. McHugh RK, Hearon BA, Otto MW. Cognitive behavioral therapy for substance use disorders. *Psychiatr Clin North Am* 2010;33:511-25.
9. Murthy KR. Sarangdhar, Sarangadhar Samhita of Acharya Sarangdhar, Edited Purvakandha. Shloka No. 21-22. Reprint/edition. Ch. 4. Varanasi: Chaukhambha Orientalia; 2016.
10. Tripathi B. Agnivesh, Charaka Samhita of Acharya Charaka, Charaka and Dhridhavalva Krit, Chikitsa Sthana. Shloka No. 56-57. Reprint/edition. Ch. 24. Varanasi: Chaukhambha Sanskrit Sansthan; 2013.
11. Tripathi B. Agnivesh, Charaka Samhita of Acharya Charaka, Charaka and dhridhavalva krit, Chikitsa Sthana. Shloka No. 30 Reprint/edition. Ch. 24. Varanasi: Chaukhambha Sanskrit Sansthan; 2013.
12. Shastri AD. Sushruta, Sushruta Samhita of Acharya Sushruta, edited with Ayurveda Tayva Sandipika Sharir Sthana. Shloka no. 26. Reprint/edition. Ch. 6. Varanasi: Chaukhambha Sanskrit Sansthan; 2010.
13. Murthy KR. Vriddha Vagbhata, Astanga Samgraha of Acharya Vagbhata Nidan Sthana ver 9. Reprint/edition. Ch. 6. Varanasi: Chaukhambha Sanskrit Sansthan; 2005.
14. Tripathi B. Agnivesh, Charaka Samhita of Acharya Charaka, Charaka and Dhridhavalva krit, Chikitsa Sthana. Shloka No. 37 Reprint/edition. Ch. 24. Varanasi: Chaukhambha Sanskrit Sansthan; 2013.
15. Douaihy AB, Kelly TM, Sullivan C. Medications for substance use disorders. *Soc Work Public Health* 2013;28:264-78.
16. Shastri AD. Sushruta, Sushruta Samhita of Acharya Sushruta, edited with Ayurveda tayva Sandipika by Uttar Tantra. Shloka no. 19-20. Reprint/edition. Ch. 47. Varanasi: Chaukhambha Sanskrit Sansthan; 2010.
17. Behere RV, Muralidharan K, Benegal V. Complementary and alternative medicine in the treatment of substance use disorders-a review of the evidence. *Drug Alcohol Rev* 2009;28:292-300.
18. Tripathi B. Agnivesh, Charaka Samhita of Acharya Charaka, Charaka and Dhridhavalva Krit, Chikitsa Sthana. Shloka No. 101-102 Reprint/edition. Ch. 24. Varanasi: Chaukhambha Sanskrit Sansthan; 2013.
19. Benni JM, Jayanthi MK, Suresha RN. Evaluation of the anti-inflammatory activity of *Aegle marmelos* (Bilwa) root. *Indian J Pharmacol* 2011;43:393-7.
20. Sharma PC, Yelne MB, Dennis TJ, Joshi A. Database on Medicinal Plants Used in Ayurveda. Vol. 1. New Delhi: Central Council for Research in Ayurveda and Siddha, Dept of ISM and H, Min. of Health and Family Welfare, Government of India; 2001. p. 79.
21. Nand O. List of Psychotherapeutic Drugs/Medicines. New Delhi: Ministry of Health and Family Welfare (Govt of India); 2019.
22. Jagadish A, Ali F, Gowda MR. Mental healthcare act 2017 -the way ahead: Opportunities and challenges. *Indian J Psychol Med* 2019;41:113-8.
23. Thirthalli J, Zhou L, Kumar K, Gao J, Vaid H, Liu H, *et al.* Traditional, complementary, and alternative medicine approaches to mental health care and psychological wellbeing in India and China. *Lancet Psychiatry* 2016;3:660-72.
24. Shankar MP. Bhavaprakasha Nighantu of Bhavamishra. Haritakyadi Varga. 1st ed., Ch 77. Ver 221. Varanasi: Chaukhambha Bharati Academy; 2009. p. 267.
25. Srikantha Murthy KR, editor. Susrutasmhita of Susruta, Sutrasthana; Krithyakrithyavidhi. 1st ed., Ch. 23. Verse 6. Varanasi: Chaukhambha Orientalia; 2014. p. 171.
26. Sushruta S. In: Shastri KA, editor. Sushruta Samhita, Sutra Sthana, Vamana Dravya Vikalpa Vigyaneeya Adhayaya, 43/5. 11th ed., Vol. 1. Varanasi: Chaukhambha Sanskrit Sansthan; 1997. p. 160.
27. Veerendra K, Gupta YK. *Centella asiatica* (L.) Urban: From traditional medicine to modern medicine with neuroprotective potential. *Evid Based Complement Alternat Med* 2012;2012:946259.
28. Anand M, Alagesan J. Effect of yoga therapy in rehabilitation of drug addicts. *Glob Res Anal* 2013;2:154.
29. Bhargav H, Holla B, Ramakrishna KK, Shivakumar V, Gokulakrishnan K, Varambally S, *et al.* Yoga and integrative healthcare: Lessons from the national institute of mental health and neurosciences (NIMHANS) in India. *Int J Yoga* 2022;15:150-7.
30. Avasthi A, Anthony R. Psychotherapy in Indian context. *J Clin Psychiatry* 1998-99;3:26-8.
31. Murthy AR, Singh RH. The concept of psychotherapy in ayurveda with special reference to satvavajaya. *Anc Sci Life* 1987;6:255-61.
32. Murthy Jaikrishnadas AR. Rationale of Ayurvedic Psychiatry. Ayurveda Series, No.157. Varanasi: Chaukhambha Orientalia; 2009.

How to cite this article:

Dhanya K, Jithesh M. Review on Clinical Perspective of Multiple Substance use Disorder and its Ayurvedic Management. *IRJAY*. [online] 2024;7(2);45-50.

Available from: <https://irjay.com>

DOI link- <https://doi.org/10.48165/IRJAY.2024.70209>

Table 1: Stages of mada and resemblance with MSU

Stages of mada	Features resembles MSU
1 st stage	Stage 1-stage of stimulation
2 nd stage	Stage 2-stage of excitement
Madantara(between 2 nd and 3 rd)	Stage 3-stage of delirium
3 rd stage	Stage 4-stage of coma