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Research Article

Effect of a selected protocol in mild to moderate Alcohol Use Disorder – A Single Group Pretest- Posttest Trial

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Abstract

Introduction: Alcohol Use Disorder (AUD) is a major global health challenge, with an estimated 3 million deaths annually attributed to harmful alcohol use. In India, approximately 17.4% of alcohol users suffer from AUD. Despite pharmacological options such as naltrexone and acamprosate, adverse effects and relapse remain concerns. Ayurveda identifies alcohol-related disorders as *Madaātyaya*, with management approaches based on *tridosa* theory including *śodhana*, *śamana*, and supportive therapies. Objective: To assess the effectiveness of a selected Ayurvedic protocol in managing mild to moderate AUD and improving the quality of life. Methods: A single-group clinical trial was conducted with 14 participants (aged 18–50) diagnosed with mild to moderate AUD at VPSV Ayurveda College and Government Ayurveda Research Institute for Mental Health and Hygiene, Kottakkal. The intervention included *Ajamodarka*, *Ksirabala nasya*, *snehapana*, *vamana*, followed by *Draksadi Phanta* and *Asvagandha–Aparajita–Vaca curna* for 45 days. Assessments were made using the CIWA-Ar, Alcohol Dependence Scale (ADS), and QLES-Q-SF for quality of life. Data were analyzed using the Wilcoxon Signed Ranks Test. Results:The protocol was statistically significant in the three key areas: managing alcohol withdrawal symptoms at $P < 0.001$ with 83.28% of relief, reducing alcohol dependence at $P < 0.001$ with 92.14% of relief, and improving the quality of life at $P < 0.001$ with 39.54% of improvement in scores. The selected protocol was having statistically significant effect in AUD. Conclusion: The selected Ayurvedic protocol appears effective in the integrative management of mild to moderate AUD. Further studies with larger samples and control groups are recommended for validation.

Keywords: Alcohol Use Disorder, Ayurveda treatment protocol, *Madatyaya, Nasya, Satwavajaya, Shodhana, Shamana, Vamana*, Quality of Life.

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Introduction

Alcohol Use Disorder (AUD) is a chronic condition marked by an impaired ability to control alcohol consumption despite the negative consequences it brings to one's health, social life, and occupational functioning. Individuals with AUD experience a range of behavioural and physical symptoms, including cravings, tolerance, and withdrawal [1]. These factors make it difficult for them to reduce or cease alcohol use, even when they recognise the harm it causes. Globally, approximately 3 million deaths annually are attributed to harmful alcohol use, with 1.4% of the population diagnosed with AUD [2]. In India, the numbers are striking: an estimated 62.5 million individuals consume alcohol, and among them, 17.4% meet the criteria for AUD [3]. Alarmingly, the World Health Organization (WHO) has identified AUD as one of the three deadliest diseases of the 20th century [4].

Diagnostic criteria for AUD are detailed in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). A diagnosis is made when an individual meets at least two of the 11 criteria over a 12-month period. The severity of AUD—categorised as mild, moderate, or severe—depends on the number of criteria fulfilled [5].

Current treatments for AUD often include medical interventions alongside counselling and rehabilitation programs. Medications such as acamprosate and naltrexone are commonly prescribed as first-line treatments to reduce the risk of relapse. However, these pharmacological agents are associated with various side effects, including nausea, decreased appetite, fatigue, somnolence, and daytime drowsiness [6]. This underscores the need for alternative, holistic approaches to managing AUD.

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In Ayurveda, the Indian system of medicine, conditions related to excessive alcohol consumption are referred to as "Madaātyaya." Ayurvedic treatments aim to address the root causes of such disorders, with protocols designed around balancing the *tridoshas* - *Vata, Pitta, and Kapha*. Treatments such as *Shodhana* (detoxification) followed by *Samana* (pacification) have shown promise in managing the symptoms of alcohol withdrawal and dependence [7]. Previous research has highlighted the potential of therapies like *Vamana* (therapeutic emesis), *Ksheerabala Nasya* (nasal administration of medicated oils), *Ajamodarka* (herbal formulations), and *yoga* for their effectiveness in addressing both alcohol dependence and withdrawal symptoms [8,9,10,11].

Despite the theoretical framework and clinical observations supporting the use of Ayurvedic treatments in AUD, there remains a need for rigorous clinical validation of these protocols. The present study seeks to bridge this gap by investigating the effectiveness of a selected Ayurvedic treatment protocol, combining Shodhana, Samana, yoga and family counselling, in the management of mild to moderate AUD.

Need and Significance of the Study

The increasing prevalence of AUD in India and globally highlights the critical need for effective and sustainable treatment options. While conventional pharmacological treatments have shown efficacy, their associated side effects and the high rates of relapse demand the exploration of alternative approaches. Ayurveda, with its holistic focus on balancing the body's *doshas* and promoting overall well-being, offers a promising complementary treatment strategy for AUD.

The significance of this study lies in its attempt to bridge the gap between Ayurvedic principles and clinical practice in the management of AUD. By investigating the efficacy of an Ayurvedic treatment protocol that includes Shodhana (detoxification), Samana (pacification), herbal formulations, yoga, and family counselling, this study aims to provide evidence-based support for the integration of Ayurvedic therapies in AUD management. Additionally, assessing the protocol's impact on the quality of life of patients with mild to moderate AUD addresses a critical aspect of treatment, as quality of life is often impaired in individuals suffering from alcohol dependence.

The study is particularly relevant in the current healthcare scenario, where there is a growing demand for integrative approaches that combine the strengths of modern medicine and traditional practices. Ayurveda's personalised approach to health management, which emphasises both mental and physical well-being, can complement the biomedical model by addressing the root causes of addiction and its associated complications.

Methodology

Aims and objectives:

To study the role of Integrative management strategy for Alcohol use disorder.

To assess the effect of the integrative protocol in mild to moderate Alcohol use disorder and also in the Quality of life

Methods

Study design: This study uses a single group pre-test post-test design to measure the effect of the intervention

Study setting: Ayurveda college and GARIM

Study population: Subjects with mild to moderate AUD fulfilling the inclusion criteria

Period of study: 18 months

Sampling: This study uses purposive sampling to select participants suitable for the research based on the fixed criteria.

Sample size:14 (No dropouts)

Inclusion criteria

Those fulfilling the DSM 5 diagnostic criteria of mild to moderate AUD
>15 Score on AUDIT questionnaire
Age group18-50years, irrespective of gender
Those fit for the protocol
Those provided informed consent.

Exclusion criteria

Known case of hypertension, cardio-vascular diseases, chronic hepatic diseases, renal dysfunction, thyroid dysfunction, Peptic ulcer
History of suicidal attempts
Major depressive disorder, other substance use disorders, psychotic disorders.
Pregnant women and lactating mother

Ethical clearance

The ethical clearance was obtained from the institutional ethical committee of VPSV Ayurveda College, Kottakkal (IRB/CL/16/22 Dated 20108/2022) and CTRI (CTRI 2023/06/054506) registration was done.

Intervention

Table 1: Interventions

Procedure	Number of days	Medicines
Withdrawl management	7DAYS	*Ajamodarka*[6]- 20ml with 10ml water twice daily after food
		NASYA- Ksheerabala taila[7] –*7 avarthi*- 1ml–3 ml dose
Rookshana	1 day	*Takrapana* with *vaiswanara curna* [13]
Snehapana	1-7 Days	*Dhatryadi ghrita* [14]
Abhyanga followed by *ushmasweda*	1 day	*Dhanwantaram taila* [15]
Vamana	1 day	*Madanapippali curna*(3gm) ,*vacha curna* (2gm), *yashti curna*(6gm) ,*saindava* (15gm), *madhu* (Q.S), *ksheera*(3L)
Diet regulation	1 day	
Samana	1 month	*Drakshadi phanta*- 50ml BD Before Food 4gm *curna* (*Aswaganda*1.5gm + *Aparajitha*1.5gm + *Yashti* 1gm) with milk twice daily after food
Yoga	1 month	7days training, then self-practicing
Family counseling	4 sessions	1 hr. , weekly once

Family counselling: Weekly one session, upto1 hr.

Nature of AUD and treatment
Motivational enhancement

Relapse prevention technique
Make goal in life and create a positive attitude

Yoga protocol

Trained for 7days after *shodhana.*
Self-practice–along with *samana*, video shared
Follow-up– weekly once, communication in groups– to ensure compliance

Table 2: Yoga protocol [16]

Yoga protocol	Total 45 Mins
Loosening exercise (Neck rotations, Shoulder rolls, Arm swings, Wrist rotations, Waist twists (trunk rotations), Hip rotations, Knee bends (half squats), Ankle rotations, Toe touching (forward bend)	5mts
Sooryanamaskara	6mts
Tadasana Kateechkrasana Vrikshasana Simhasana Ardhamatsyendrasana Bhujangasana Salabhasana Dhanurasana Pavanamuktasana Vipareetakarani with Uddiyanabandha and moolabandha Savasana	20 mts
Kapalabhadi Pranayama- breathing technique Meditation - practice of focused awareness or mindfulness	14 mts

Outcome Measurements

AUDIT Questionnaire	For Inclusion
CIWA-AR Scale	0th Day, 7th Day
SADQ-C Questionnaire	0th Day
Alcohol Dependence Scale	0th Day, 45thDay
Q-LES-Q-SF Questionnaire	0th Day and 45th Day

Statistical Analysis

A clinical study was conducted on 14 registered participants diagnosed with mild to moderate Alcohol Use Disorder using a single-group pretest-posttest design with a selected integrated protocol. Demographic and screening data were collected and analysed. The tests used for statistical analysis included Wilcoxon's Signed-Rank Test, a non-parametric test designed for pairwise comparisons of discrete data using SPSS 27 software.

The screening data revealed that, according to the AUDIT screening, all 14 participants had a total score of 15 or more, indicating alcohol dependence. As per the SADQ-C questionnaire, 7.1% of participants had mild dependency (score <16), while 92.9% had moderate dependency (score 16-30).

Table 3: Effect of the intervention on alcohol withdrawal - CIWA-Ar

CIWA –Ar Questionnaire BT-AT (0 - 8th day)	BT	AT	MEAN	Z-value	P value	% of relief
Nausea / vomiting	22	1	55.35	-2.549	<0.05	55.35
Tremor	34	6	47.55	-2.555	< 0.05	47.55
Anxiety	54	10	82.26	-3.345	< 0.001	82.26
Agitation	52	11	73.69	-3.210	< 0.001	73.69
Paroxysmal Sweat	43	7	79.33	-3.195	< 0.001	79.33
Orientation	0	0	-	0.00	-	-
Tactile Disturbance	0	0	-	0.00	-	-
Auditory Disturbance	28	2	46.78	-2.401	<0.05	46.78
Visual Disturbance	0	0	-	0.00	-	-
Headache	50	10	78.92	-3.352	< 0.001	78.92

While assessing the intervention on alcohol withdrawal, the intervention significantly reduces the symptoms of alcohol withdrawal, including nausea/vomiting, tremor, anxiety, agitation, paroxysmal sweat, auditory disturbances, and headaches. All symptoms showed significant improvement based on their respective p-values. None of the participants reported symptoms such as orientation, tactile and visual disturbances.

Effect of intervention as per Total CIWA-AR Score: The overall CIWA-AR total score significantly improved, with a z value of -3.298 and a P value of less than 0.001, with percentage of relief of 83.28%.

Table 4: Effect of intervention on Alcohol Dependence – as per ADS

ADS (0-60th day)	Total BT	Total AT	Mean BT	Mean AT	Z-value	P-value
Quantity of the last drink	18	1	1.29	0.07	-3.314	< 0.001
Hangovers on next morning	12	0	0.86	0.00	-3.317	< 0.001
Hands tremble/ shake	12	2	0.86	0.14	-2.640	<0.01
Physically sick due to drinking	14	1	1.00	0.07	-2.972	< 0.01
Delirium tremens	13	2	0.93	0.14	-	-
Stagger, and weave after drinking	15	1	1.07	0.07	-2.0	< 0.05
Feels overly hot and sweaty (feverish)	7	1	0.50	0.07	-3.391	< 0.001
After drinking, seeing things not really there	7	0	0.50	0.00	-	-
Fear that not have a drink when needed	13	0	0.93	0.00	-2.234	< 0.05
Blackouts as a result of drinking	22	0	1.57	0.00	-3.017	< 0.01
Carry a bottle or keep close at hand	15	0	1.07	0.00	-3.357	< 0.001

After abstinence, end up drinking heavily	17	0	1.21	0.00	-3.035	< 0.01
In past 12 months, passed out as a result of drinking	7	0	0.50	0.00	-3.357	< 0.001
Convulsion following a period of drinking	2	0	0.16	0.00	-	-
Drink throughout the day	10	0	0.71	0.00	-3.162	< 0.01
After drinking heavily, fuzzy or unclear	17	0	1.21	0.00	-3.317	< 0.001
As a result of drinking, Palpitation	13	1	0.99	0.07	-3.286	**< 0.001**
Constantly think about drinking and alcohol	10	0	0.71	0.00	-3.162	< 0.01
After drinking, hearing "things" not really there	3	0	0.21	0.00	-2.646	< 0.01
Weird and frightening sensations after drinking	2	0	0.14	0.00	-	-
After drinking felt things crawling , not really there	1	0	0.07	0.00	-	-
Blackouts- loss of memory	22	0	1.57	0.00	-3.313	-3.313
Tried to cut down drinking and failed	23	0	1.64	0.00	-3.017	< 0.01
Drinks quickly	15	0	1.07	0.00	-3.317	**< 0.001**
Usually stop after taking one or two drinks	14	0	1.00	0.00	-3.742	**< 0.001**

While assessing the intervention on alcohol dependence using the ADS, the intervention had a statistically significant effect on reducing alcohol dependence, hangover symptoms, and shakes when sobering up. Additionally, there was significant improvement in symptoms such as feeling physically sick, stagger and weave, and feeling overly hot or sweaty, with all results showing p-values indicating strong significance. Notably, none of the participants reported experiencing delirium tremens. The intervention significantly reduced panic/fear, blackouts, carrying bottles, heavy drinking after abstinence, passing out, drinking throughout the day, and fuzzy thinking, with all outcomes showing strong statistical significance. None of the participants exhibited symptoms of visual hallucinations or convulsions. The intervention significantly reduced rapid heartbeats, constant thoughts about drinking, auditory hallucinations, blackouts- loss of memory, and the behaviour of gulping drinks. It also significantly improved participants' ability to cut down drinking and stop after one or two drinks. None of the participants experienced symptoms such as weird and frightening sensations or tactile hallucinations.

Effect of intervention as per Total Score as per ADS: The overall total score showed a significant improvement, with a Z value of -3.301 and a P value of 0.001, with percentage of relief of 92.14%

Table 5: Effect on QOL as per QLES – Q – SF

QLES – Q-SF (0 - 60th day)		Total AT	Mean BT	Mean AT	Z value	P- value
Physical health	40	51	2.86	3.64	-3.207	< 0.001
Mood	25	45	1.79	3.21	-3.286	< 0.001
Work	30	47	2.14	3.36	-3.127	< 0.01
Household activities	30	45	2.14	3.21	-2.972	< 0.01
Social relationship	36	52	2.57	3.71	-2.970	< 0.01
Family relationship	35	50	2.50	3.57	-2.919	< 0.01
Leisure time activities	34	50	2.43	3.57	-2.913	< 0.01
Ability to function daily life	35	50	2.50	3.57	-3.071	< 0.01
Sexual performance	37	51	2.64	3.64	-2.271	< 0.05
Economic status	33	47	2.29	3.36	-2.236	< 0.05
Living situation	34	48	2.43	3.43	-2.271	< 0.05
Steady movement	32	47	2.29	3.36	-3.207	< 0.001
Ability to work	35	50	2.50	3.57	-2.887	< 0.01
Overall sense of wellbeing	36	50	2.57	3.57	-2.919	< 0.01
Medication	0	0	0	0	-	-
Life satisfaction	35	51	2.50	3.64	-2.810	< 0.01

The intervention significantly improved various aspects of Quality of Life. Participants experienced notable improvements in physical health. Their mood also showed a significant boost and was also significant. The ability to work improved considerably, along with household activities and family relationships. Leisure activities, daily functioning, sexual performance and economic status had significant enhancements. Participants reported better living conditions, and a greater sense of well-being, and significant improvements in overall life satisfaction. None of the participants used any other medications for their present condition.

Effect of intervention as per Total score - QLES - Q -SF : Overall life satisfaction improved significantly, with a Z value of -3.301, and a P value of 0.001, with percentage of relief 39.54%

Response of the intervention - Mean Scores

The mean score decreased from 20.14 to 3.2 in CIWA-Ar scale, 20.85 to 1.7 in alcohol dependance and the total quality of life improved from 35.35 to 48.21, suggesting the effect of the intervention.

Discussion

In the study, 93% expressed a persistent desire to reduce alcohol consumption, 79% experienced cravings, highlighting the challenge of controlling alcohol use. Most participants spent considerable time obtaining or recovering from alcohol and many struggled to meet their responsibilities. Withdrawal symptoms were present in all individuals, and 29% consumed alcohol to alleviate these symptoms. These findings underline the chronic and complex nature of AUD. None of the participants engaged in hazardous drinking.

Considering the symptoms from Ayurvedic side, Vata symptoms were prominent in 71% of participants, with insomnia (*prajagara*) and 43% experiencing chest pain (*parswasoola*), along with other Vata-related symptoms. Pitta symptoms such as thirst (trishna), burning sensation (daha), and sweating (*sweda*) were commonly reported. *Kapha* symptoms, including vomiting (*chardi*) and loss of appetite (aruchi), were observed in several participants. The combination of these symptoms, indicative of *Sannipataja Madatyaya*, illustrates the severity and complexity of AUD[17].

Alcohol withdrawal symptoms were marked by a predominance of Vata and Pitta disturbances, including tremors, agitation, headache, and paroxysmal sweating. Alcohol dependence manifested as physical pain (*Sareera Dukha*), blackouts (*Sammoha*), cravings (*Pratata Trushna*), and delirium (*Brantha Cheta*), all indicative of an imbalance of all *doshas*.

From the Ayurvedic perspective, AUD requires a comprehensive and individualised approach due to its *Tridoshaja* nature. Shodhana, or detoxification, can be achieved through Vamana (emesis), *Virechana* (purgation), and *Vasthi* (enema) to balance the doshas. *Samana* therapies, including medicines such as *Drakshadi kwatha* and *Ajamodarka*, ghee preparations such as *Dhatryadi grita*, help pacify the aggravated *doshas*. *Rasayanas* including *Ashwagandha, Yashti and Aparajitha*, aim to restore vitality and balance. In addition, *Satvavajaya* through the practices such as yoga, meditation, and counselling, addresses the psychological aspects. This individualised approach is essential for effectively managing the physical and psychological symptoms of AUD.

Effect of the Intervention

The intervention significantly reduced alcohol withdrawal symptoms, as assessed by the CIWA-Ar scale. Improvements observed in symptoms related to Vata and Pitta imbalances, such as nausea, tremors, anxiety, agitation, sweating and headaches. Notably, severe withdrawal symptoms such as orientation or visual disturbances were absent, suggesting the intervention effectively prevented escalation to more severe withdrawal stages.

There was 82.6 % relief in tremor, 79.33 % in headache, agitation decreased by 79%,. There was a 73.69% relief in paroxysmal sweating, nausea and vomiting symptoms saw a 55.35% reduction, Anxiety levels reduced by 47.55%. Additionally, there was a 46.78% reduction in auditory disturbances. The intervention also significantly reduced alcohol consumption and associated symptoms as assessed with ADS. A marked decrease in the urge to drink supported both psychological and physical recovery. Hangover symptoms significantly reduced, aiding detoxification and reducing relapse risk.

Key improvements included

- Improved Coordination: Enhanced motor function, indicating restored nervous system health.
- Reduction in Panic and Fear: Calming effects, stabilising mental health.

The intervention significantly improved various QOL domains, including physical health, mood, work performance, relationships, and overall life satisfaction. The overall improvement in QOL was 39.54%, demonstrating substantial progress in both physical and psychological well-being and was statistically significant, ensuring reliability of the results.

Mode of action of the intervention

Ajamodarka has carminative, anti-inflammatory and digestive properties which help alleviate nausea, vomiting and loss of appetite, stabilising the digestive fire (Agni) and reducing toxins (Ama). It also helps reduce anxiety, tremors, agitation and possess anti-inflammatory and antioxidant effects[6].

Nasya or nasal therapy, modulates the central nervous system (CNS) reducing anxiety, tremors, and insomnia. It aids in detoxification, relieving mental fog and headaches. Using nootropic herbs like Brahmi in Nasya improves mental clarity and cognitive function, while alleviating psychological distress such as depression and anxiety, providing a calming effect[7].

Ksheerabala taila, a combination of *Bala* (*Sida cordifolia*), milk and sesame oil, nourishes the nervous system and mitigates symptoms like anxiety and tremors during alcohol withdrawal and improves mental clarity. Its *Rasayana* (rejuvenating) properties enhance recovery from the damage caused by chronic alcohol use and also improves sleep quality[7].

Ruksana prepares the body for the administration of *Snehapana* (medicated ghee) by stimulating digestion and clearing toxins (Ama). This process helps the body absorb the medicinal properties of ghee more effectively and supports detoxification[18].

Snehapana, or internal oleation with medicated ghee, mobilizes *doshas*, particularly Vata and Pitta, towards the digestive tract for elimination. It strengthens the digestive fire (Agni), aids in detoxification, and nourishes the tissues depleted by chronic alcohol consumption. *Dhathryadi Ghrita* has neuroprotective, rejuvenating, and Pitta-pacifying properties, supporting both physical and mental recovery during withdrawal[14].

Abhyanga (oil massage) with *Ushmasveda* (heat application) pacifies Vata, improves blood circulation, and relieves stress and also facilitates the elimination of doshas. *Abhyanga* helps reduce subjective stress and is beneficial for managing psychological withdrawal symptoms[15].

Vamana, therapeutic emesis, is effective in managing the accumulation of toxins (Ama) in the gastrointestinal tract, common in AUD. It eliminates excess *Kapha dosha*, which contributes to withdrawal symptoms such as fatigue and sluggishness. Vamana stimulates Agni, promoting the restoration of digestive health and preventing the further accumulation of waste. It pacifies *Vata and Pitta doshas*, improving mental clarity and emotional stability.Vamana alleviates symptoms of stress and anxiety associated with alcohol dependence[8].

Internal Medications

Drakshadi Phanta helps balance *Vata and Pitta Doshas*, reducing anxiety, irritability, and digestive issues common in alcohol dependence. It supports mental clarity, offers antioxidant and hepatoprotective effects, and protects against alcohol-induced liver and cognitive damage. Additionally, it provides

neuroprotective, anxiolytic, and antidepressant benefits, aiding recovery from alcohol withdrawal symptoms[19].

Ashwagandha (*Withania somnifera*) is an adaptogenic herb that offers significant benefits for managing AUD. It helps restore balance in *Vata and Kapha doshas*, aiding in detoxification and recovery. With its adaptogenic and *rasayana* properties, *Ashwagandha* enhances resilience to stress and promotes overall well-being. It alleviates anxiety symptoms commonly associated with alcohol withdrawal and modulates neurotransmitters such as GABA and serotonin, which help reduce anxiety and improve mood. By addressing underlying stress and anxiety, it supports the reduction of alcohol dependence and withdrawal symptoms, while its anti-addictive potential aids in managing addictive behaviors and supporting overall recovery[20].

Aparajitha (*Clitoria ternatea*) provides neuroprotective, antioxidant, anxiolytic, and antidepressant benefits in the management of AUD. It helps balance *Kapha and Pitta doshas*, promoting improved digestive health and reducing inflammation. Aparajitha's neuroprotective effects safeguard the brain from alcohol-induced damage while supporting cognitive function. Its antioxidant properties reduce oxidative stress, benefiting liver health and aiding in overall recovery. Additionally, it helps alleviate anxiety and depressive symptoms often associated with alcohol withdrawal, supporting emotional well-being[21].

Yashti (*Glycyrrhiza glabra*) offers multiple benefits in the management of AUD. It helps balance *Vata and Pitta doshas*, thereby supporting cognitive health and enhancing mental functions. With hepatoprotective properties, *Yashti* protects the liver from alcohol-induced damage and promotes its regeneration. Its anxiolytic and antidepressant effects assist in managing anxiety and depression during recovery. Additionally, *Yashti's* antioxidant properties neutralise oxidative stress, promoting overall health and aiding recovery. Collectively, these benefits support detoxification, reduce withdrawal symptoms, and enhance recovery for individuals with AUD[22].

Mode of action of Yoga in AUD

Yoga has been recognised in managing AUD, with effects on both physiological and psychological aspects of recovery. Yoga helps modulate neurotransmitter levels, including serotonin and dopamine, which are often dysregulated in addiction. It also improves stress management and inhibitory control, reducing cravings. It reduces cortisol levels, which lowers stress and aids in managing alcohol cravings and relapse prevention. Yoga also enhances emotional regulation, helping individuals better manage emotions and cope with the stress of recovery[23].

Yoga improves flexibility and strength, aiding detoxification and physical recovery from alcohol abuse. It enhances sleep quality, essential for recovery and reducing relapse risk. Yoga regulates neurotransmitters such as serotonin and GABA, critical for mood stabilisation. It also reduces inflammation and oxidative stress and also has anxiolytic and antidepressant effects that help alleviate symptoms common in alcohol withdrawal and recovery. Group yoga classes offer social support, enhancing motivation and adherence to recovery [24].

Family Counselling in AUD

Family counselling plays a vital role in reducing cravings and relapse, with multiple benefits that enhance recovery:

1. Effective Communication Skills: Counselling teaches family members effective communication, reducing conflicts that could worsen stress and substance use..
2. Reducing Enabling Behaviours: It helps identify enabling behaviours that support addiction and promotes recovery by fostering accountability.
3. Supportive Environment: It creates a supportive family environment, crucial for emotional stability during recovery.
4. Collaborative Problem-Solving: It teaches problem-solving and stress management, improving resilience and helping prevent relapse.
5. Managing Relapse Triggers: Family members learn to identify relapse triggers, helping prevent setbacks.
6. Emotional Expression: Family counselling provides a safe space for emotional expression, fostering understanding and empathy, reducing isolation. [25].

Limitations

As there was no evidence of similar protocols in the management of AUD, the study was planned as a single arm clinical trial without a control group. Even though the design stands in the lower part of the research pyramid, such studies are quite essential so as to generate a preliminary study. Based on the findings, there is scope for planning controlled trials in future and also individualised protocols in AUD for creating a better level of evidence.

Conclusion

The integrative protocol including *snehapana, vamana, nasya, samana* drugs, *yoga* as well as family counselling for 45 days was effective in the management of mild to moderate Alcohol Use Disorder and also Improvement in the QOL. Definitely the results are promising and expected to contribute to the recovery as well as rehabilitation of the affected mankind. There is need of more controlled studies especially against the contemporary management and also studies are to be planned with more follow-ups for the generalisation of the results.

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