AYURVEDIC THERAPEUTIC APPROACHES FOR AUTISM SPECTRUM DISORDER: A COMPREHENSIVE REVIEW

Ajay Pareek [*] and Harish Kumar Singhal

PG Department of Kaumarbhritya, Post Graduate Institute of *Ayurveda*, Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University Jodhpur - 342037, Rajasthan, India.

Correspondence to Author:
Dr. Ajay Pareek

PG Scholar,
PG Department of Kaumarbhritya,
Post Graduate Institute of *Ayurveda*,
Dr. Sarvepalli Radhakrishnan
Rajasthan Ayurved University
Jodhpur - 342037, Rajasthan, India.

E-mail: Ajaypareek286@gmail.com

ABSTRACT: Abstract: Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by impairments in social interaction, communication, and behavior, often accompanied by delays in motor and verbal development. Its prevalence has significantly increased over recent decades. In *Ayurvedic* literature, the term *Unmada* encompasses a spectrum of psychiatric disorders and can be correlated with conditions like autism, which present with altered mental, behavioral, and social functioning. **Aim and Objectives:** This review aims to critically analyze the efficacy of *Ayurvedic* treatment modalities in managing children diagnosed with autism. **Materials and Methods:** Classical *Ayurvedic* texts, peer-reviewed journal articles, and data from digital databases such as PubMed and Medline were reviewed. The focus was on studies evaluating *Ayurvedic* formulations, procedures, and supportive therapies used in managing ASD in children. **Results:** A holistic *Ayurvedic* approach to autism includes the use of herbal and herbo-mineral formulations, therapeutic procedures such as *Abhyanga* (massage), *Shiropichu, Shirolepa*, and dietary regulation. *Sattvavajaya Chikitsa* (*Ayurvedic* psychotherapy) and lifestyle modifications are also emphasized. These therapies collectively target the psychosomatic aspects of *Unmada*, aiming to restore mental balance and improve functionality. **Discussion:** *Ayurvedic* interventions appear to support neurobehavioral improvements in autistic children through integrated pharmacological, psychological, and sensory mechanisms. This holistic approach enhances quality of life and functional independence. **Conclusion:** With appropriate *Ayurvedic* treatment and supportive care, children with autism may show improved social, cognitive, and behavioral functions. This integrative strategy holds promise in helping them become more active and contributing members of their families and communities.

INTRODUCTION: Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by an early onset, typically lifelong condition marked by ongoing deficits in social communication abilities (such as social-emotional reciprocity, nonverbal communication, and forming/maintaining relationships) and restricted, repetitive behaviors (which include stereotypies, insistence on sameness, highly focused and fixated interests, and sensory sensitivities) [1]. Although its exact etiology remains uncertain, the condition is typically recognized during early childhood when delays in achieving social, motor, and verbal developmental milestones become evident.

Children with ASD may exhibit a range of cognitive impairments, difficulties in social interaction, distinctive behavioral patterns, and deficits in speech and language skills. ASD typically manifests in the first few years of life and persists into adolescence and adulthood. It is considered a multifactorial disorder resulting from

the interplay between genetic predispositions and environmental influences. Studies indicate a sibling recurrence risk of approximately 2–19%, with significantly higher concordance rates (37–90%) observed in monozygotic twins. Additional risk factors associated with ASD include closely spaced pregnancies, increased parental age, extreme prematurity (gestational age <26 weeks), and a family history of neurodevelopmental or psychiatric disorders [2]. The reported prevalence of ASD has risen markedly from 4–6 per 10,000 children in the 1960s to 40–60 per 10,000 in more recent decades [3]. Recent epidemiological studies in the United States indicate that ASD occurs in 1 in 36 children by age 8, being approximately four times more common in males than females [4].

This notable increase is attributed not only to improved diagnostic criteria and heightened public awareness but also to environmental exposures, delayed maternal age at childbirth, and advances in genomic research. Certainly, early exposure, especially during pregnancy and the first year of life outside the womb, to air pollutants (notably particulate matter with a diameter of ≤2.5 μm) [5] or to agricultural pesticides [6] is linked to an increased risk for ASD.

Certain genetic syndromes, such as Rett syndrome, Down syndrome, fragile X syndrome, and tuberous sclerosis, show a higher comorbidity with ASD than the general population [7-9].

However, these account for only a small proportion of overall cases. Studies focusing on sex chromosome aneuploidy suggest altered male social functioning, reinforcing the idea of heightened autism susceptibility in such populations. Chromosomal abnormalities involving loci on chromosomes X, 2, 3, 7, 15, 16, 17, and 22 have been implicated in ASD pathogenesis, particularly with the widespread adoption of chromosomal microarray technologies.

Furthermore, advanced parental age contributes to genetic mutations in gametes and is associated with increased risk of neurodevelopmental complications in offspring [8]. Several pathogenetic mechanisms have been proposed and backed by compelling data. Among these mechanisms, we highlight oxidative stress, mitochondrial dysfunction, changes in the gut microbiota (consider the diverse range of microorganisms inhabiting the human gastrointestinal system), immune dysregulation, and neuroinflammation. Be aware that these mechanisms are not independent but may work together in synergy, contributing to the onset of ASD [10-13].

The clinical features of autism are predominantly behavioral, with varying levels of cognitive function. Key manifestations include impaired social reciprocity and communication, restricted interests, stereotyped behaviors, and repetitive activities. Many children with ASD also exhibit sensory processing issues, self-injurious behavior, aggression, and difficulties in adaptive functioning. Diagnosis is primarily clinical and is based on the criteria established in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Timely diagnosis is critical, as early interventions significantly improve functional outcomes and quality of life.

Aims and Objectives Aim: To critically evaluate and compile evidence on the efficacy and scope of *Ayurvedic* therapeutic modalities in the management of Autism Spectrum Disorder (ASD), correlating classical *Ayurvedic* concepts with modern clinical understanding.

Objectives:

1. To explore the *Ayurvedic* perspective on autism in relation to *Unmada* and other relevant conditions described in classical texts.

2. To review and analyze clinical studies, case reports, and literature on *Ayurvedic* formulations and therapies used in the management of ASD.

3. To identify and evaluate the role of *Panchakarma* procedures (e.g., *Abhyanga, Shirodhara, Shiropichu*) and *Sattvavajaya Chikitsa (Ayurvedic* psychotherapy) in improving behavioral, cognitive, and social outcomes in children with autism.

4. To assess the integrative approach of *Ayurveda* in managing ASD through diet, lifestyle modifications, and herbal interventions.

5. To highlight the strengths, limitations, and future scope of *Ayurvedic* interventions in the multidisciplinary management of ASD.

MATERIALS AND METHODS: This review was conducted using a systematic and integrative approach to explore and analyze *Ayurvedic* therapeutic interventions in the management of Autism Spectrum Disorder (ASD).

Data Sources: A comprehensive literature search was performed using classical *Ayurvedic* texts including *Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya,* and *Kashyapa Samhita*, with a focus on references related to *Unmada, Manovikara*, and related neurodevelopmental conditions. In parallel, modern scientific databases such as PubMed, Medline, Scopus, and Google Scholar were searched to retrieve peer-reviewed clinical trials, observational studies, case reports, and review articles on *Ayurvedic* treatments for ASD.

Search Strategy: The following keywords and their combinations were used for database searches: Autism Spectrum Disorder, ASD, *Ayurveda, Unmada, Panchakarma, Sattvavajaya Chikitsa, Abhyanga, Shirodhara, Shiropichu, Ayurvedic Psychiatry,* and Herbal Interventions in Autism. Boolean operators (AND/OR) were applied to refine the search.

Inclusion Criteria:

❖ Studies and articles published in English.

❖ Literature focusing on *Ayurvedic* management of ASD or similar neurodevelopmental/ psychiatric disorders.

❖ Human studies, including clinical trials, observational studies, and well-documented case reports.

❖ Articles published between the years 2000 and 2025.

Exclusion Criteria:

❖ Animal studies or *in-vitro* experiments.

❖ Non-English literature without accessible translations.

❖ Articles lacking relevance to autism or *Ayurvedic* treatment principles.

❖ Studies with insufficient methodology or unclear diagnostic criteria.

Data Extraction and Analysis: Selected articles were reviewed for details on *Ayurvedic* formulations, *Panchakarma* procedures, supportive therapies (e.g., diet, yoga, meditation), therapeutic outcomes, and correlation with classical *Ayurvedic* concepts. Emphasis was placed on the mode of action, safety, and clinical efficacy of each intervention. Descriptive synthesis was used to collate findings due to the heterogeneity of study designs.

***Ayurvedic* Perspective of ASD:** In *Ayurvedic* medicine, the concept of *Unmada* encompasses a wide range of psychiatric disorders, including those that affect cognition, perception, and social behavior. Classical texts describe *Unmada* as a condition marked by disturbances in *Manas* (mental faculties), *Buddhi* (intellect), *Samjna* (consciousness), *Jnana* (knowledge), *Smriti* (memory), *Bhakti* (emotional engagement), *Sheela* (habitual behavior), *Cheshta* (volitional activity), and *Aachara* (Social conduct 14). The symptomatology of *Unmada* shares striking parallels with the clinical presentation of ASD, suggesting a possible correlation between the two from an *Ayurvedic* perspective.

Causes of ASD (*Unmada*): In *Ayurveda*, the condition known as *Unmada* a disorder of the mind has multiple causative factors that can be correlated with modern understandings of neurodevelopmental disorders like Autism Spectrum Disorder (ASD). One primary cause is *Beejadosha*, referring to genetic defects or hereditary abnormalities passed from parents to offspring [15]. Additionally, improper dietary habits immediately after conception, known as *Aharadosha,* are considered significant contributors. This includes the intake of incompatible food combinations (*Viruddhahara*) that may disturb *doshic* balance and fetal development. Lifestyle-related causes, referred to as *Viharadosha,* such as irregular sleep patterns, excessive screen time, or poor hygiene, also play a key role in disrupting mental health and

development. Moreover, birth trauma (*Manaabhighata*) can result in neurological complications such as cerebral palsy, which may overlap with or mimic autistic features. Emotional disturbances (*Vaikarikabhava*) experienced by the mother during pregnancy such as excessive fear (*Bhaya*), anger (*Kopa*), grief (*Shoka*), or excitement (*Harsha*) are believed to influence fetal neuropsychological development. Unfulfilled maternal cravings or desires (*Dauhrida*) are also emphasized in *Ayurvedic* obstetrics, as their neglect may adversely impact the fetal mind [16].

Pathophysiology (*Samprapti*): According to *Ayurvedic* principles, the development of any disease is initiated by the *Sammurchhana* the pathological interaction between vitiated *Doshas* (biological energies) and *Dushyas* (body tissues). When this interaction occurs in areas of *Khavaigunya* a preexisting weakness or vulnerability in the bodily channels or tissues it leads to the manifestation of disease [17]. In the case of *Unmada*, aggravated *Doshas* become *Unmargami* (deviating from their physiological pathways), particularly targeting the *Urdhva Jatrugata Pradesha* (regions above the clavicle), including the brain. This disturbance affects the *Manovaha Srotas* (channels of the mind) and impairs mental faculties. The simultaneous vitiation of *Rajas* and *Tamas* the two mental qualities responsible for dynamic and inert states further disrupts normal mental function, resulting in *Unmada* [18, 19].

When *Kapha Dosha* is predominantly vitiated, the condition is identified as *Kaphaja Unmada*, which bears close resemblance to the symptomatology of autism. The clinical features of *Kaphaja Unmada*, which closely resemble symptoms of autism, include remaining in a fixed posture for prolonged periods, minimal speech or complete mutism, and a marked reduction in appetite. Affected individuals often display a tendency to isolate themselves from others and show an aversion to cleanliness or personal hygiene. Other common signs include excessive sleep and the presence of sticky or white discoloration in the eyes. These manifestations reflect both behavioral and sensory disturbances characteristic of neurodevelopmental disorders like Autism Spectrum Disorder. These manifestations indicate both sensory and behavioral disturbances

similar to those observed in individuals with ASD [18].

Diagnosis: Autism Spectrum Disorder (ASD) can often be reliably diagnosed in children as young as two years of age, and early diagnosis is crucial for initiating timely interventions that significantly improve developmental outcomes. However, in practice, the average age of diagnosis still ranges between three to six years. One of the major reasons for this delay is the challenge of identifying ASD in its early stages. Language delays, social deficits that only become apparent during interactions with peers, and the variable onset and presentation of symptoms contribute to this difficulty. According to the American Academy of Neurology (AAN), a structured, two tiered approach is recommended for ASD diagnosis [20]. The first stage involves ongoing surveillance of neurodevelopmental milestones from birth, enabling the early detection of atypical development. The second stage focuses on comprehensive clinical evaluation and formal diagnosis, divided into three sequential phases:

First Phase - Case Identification: This stage emphasizes eliciting parental observations and identifying signs of impaired social interaction, delayed communication, and repetitive or restricted behaviors in the child.

Second Phase – Global Evaluation: This phase is designed to assess the intensity and consistency of behavioral and neurological symptoms. It validates earlier observations either by referring physicians or concerned parents and ensures that the symptoms are not transient or situational.

Third Phase – Specific Diagnosis: A conclusive diagnosis of ASD is established in this stage, including determining its subtype. It involves the integration of clinical expertise with detailed parental reports and confirmatory diagnostic tests. The diagnostic process is aligned with standardized criteria such as those outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) [20].

Several tools and assessment instruments are used across these stages:

Interview Tools: Autism Diagnostic Interview-Revised (ADI-R), Parent Interview for Autism (PIA), and Gilliam Autism Rating Scale (GARS).

Diagnostic Criteria: DSM-5 criteria, INCLEN Diagnostic Criteria for Autism Spectrum Disorders.

Assessment Tools: Indian Scale for Assessment of Autism (ISAA).

Neurological and Medical Evaluations: Comprehensive neurological assessments and extended medical examinations to rule out or identify comorbid conditions. In addition to diagnostic tools, a developmental profile of the child is established through multi dimensional evaluations, including:

❖ Behavioral and neuropsychological assessments

❖ Academic performance analysis

❖ Evaluation of family resources and support systems

❖ Occupational therapy assessments

❖ Cognitive and adaptive behavior analysis

❖ Speech, language, and communication evaluations

This multidimensional approach helps in understanding the child's strengths, challenges, and specific needs, thereby guiding individualized intervention strategies.

Management of ASD: The management of Autism Spectrum Disorder (ASD) through *Ayurveda* adopts a multimodal approach, integrating drug therapy (*Shamana* and *Shodhana*), *Sattvavajaya Chikitsa* (psychotherapy), and supportive care. These *Ayurvedic* interventions are employed in alignment with the concept of *Unmada*, a psychosomatic disorder described in classical texts, which shares several clinical similarities with autism. *Shamana* therapy (palliative treatment) aims to balance the aggravated *Doshas* using herbal and herbo-mineral formulations, while *Shodhana* therapy (purificatory procedures) such as *Nasya*, *Vasti*, *Abhyanga*, and *Shirodhara* are used to eliminate toxins and restore physiological harmony. *Sattvavajaya Chikitsa*, the *Ayurvedic* form of

psychotherapy, focuses on improving emotional resilience, cognition, behavior, and sensory integration through mental discipline, mantra chanting, meditation, and structured counseling. In addition to *Ayurvedic* therapies, age-specific supportive interventions are essential. In younger children, especially those under the age of three, emphasis should be placed on early and intensive behavioral and educational rehabilitation, language and speech therapy, special education, and parental training and support. These foundational therapies promote developmental milestones and reduce long-term disability. In older children or adolescents with relatively preserved cognitive ability but poor social skills, the focus shifts to psychotherapy, social skills training, and behavioral therapy. Working with families remains a vital component across all age groups, ensuring continuity of care, emotional support, and reinforcement of learned behaviors at home. Comprehensive services for children with autism may include:

1. Early intensive behavioral and educational programs (initiated before the age of three).

2. Use of structured visual aids to support optimal learning.

3. Utilization of tools like the Childhood Autism Rating Scale (CARS) for progress monitoring.

4. Multidisciplinary team training to ensure coordinated, consistent interventions.

5. Language development strategies aimed at spontaneous speech.

6. Encouraging verbal expression to enhance communication and reduce autistic tendencies.

7. Psychotherapy tailored to the child's cognitive and emotional level.

8. Social interaction and peer-based engagement training.

9. Selective use of aversion therapy (with ethical and clinical safeguards).

10. Emerging methods such as auditory integration training, which show promising outcomes in improving sensory processing.

Pathya **and** ***Apathya*** **(Wholesome and Unwholesome Diet and Lifestyle):** Diet and lifestyle, integral to *Ayurvedic* management, significantly influence neurological health. Wholesome (*Pathya*) foods beneficial for autistic children include cow's milk, ghee (*Goghrita*), aged rice (*Puran Shali*), *Shashtik* rice, grapes (*Draksha*), barley (*Yava*), and roasted paddy powder (*Lajasaktu)*. Alongside a nutritious diet, ensuring adequate sleep and maintaining a calm, supportive environment is emphasized for mental well-being. Conversely, unwholesome (*Apathya*) factors to be strictly avoided include alcohol, spicy or pungent foods, incompatible food combinations (*Viruddhahara*), polluted or stale food, and stressful experiences. Additionally, suppression of natural urges, irregular routines, and sleep deprivation are seen as aggravating factors that can worsen the condition. This integrated approach combining *Ayurvedic* therapies with behavioral, educational, and lifestyle interventions offers a comprehensive pathway for improving quality of life and functional outcomes in children with autism.

DISCUSSION: *Shamana* therapy is a key *Ayurvedic* approach for managing autism, focusing on balancing the aggravated *Doshas*. It includes *Deepana* and *Pachana* therapies, which enhance digestion and metabolism, as well as *Snehapana*, an internal oleation treatment that involves the use of medicated ghee. *Various Ghrita* preparations, such as *Kallyanaka Ghrita, Mahakallyanaka Ghrita, Jivanthyadi Ghrita, Siddharthak Ghrita, Mahapaishachika Ghrita,* and *Lashunadda Ghrita*, are commonly recommended for autism management. Essential fatty acids (EFAs) play a significant role in improving neurological function and regeneration in children with autism. Research suggests that EFAs benefit nearly 30% of autistic children, contributing to measurable progress in their language and learning skills. The consumption of EFAs highlights the crucial link between dietary nutrients and brain function, emphasizing the need for a well-balanced nutritional approach in autism care. Several *Ayurvedic* herbs are beneficial in supporting digestion and overall health in autistic children. Herbs such as *Guduchi* (*Tinospora cordifolia*), *Aamalaki* (*Emblica officinalis*), *Pippali* (*Piper longum*), and *Trikatu* (a combination of Pippali, Ginger, and Black Pepper) are known to enhance digestive function. *Ayurveda* recognizes the strong connection between the gut, immune system, and brain, where psychological stress can impact gut microbes, and in turn, gut bacteria can influence the central nervous system through the vagus nerve and immune pathways.

TABLE 1: PHARMACOLOGICAL PROPERTIES OF SINGLE HERBAL DRUGS USED IN AUTISM (ACCORDING TO *AYURVEDA*)

Sr. no.	Drug Name	Karma	Therapeutic use	Pharmacological action
1.	*Mandukaparni 21 (Centella asiatica)*	*Kaphapittahara, Balya, Deepana, Hridya, Medhya, Varnya, Visaghna, Svarya, Rasayana, Ayushya, Smritiprada*	*Shotha, Aruchi, Jwara, Kasa, Kandu, Kushtha, Prameha, Ra ktapitta, Shwasa, Pandu, Rakta Dosha*	Cognitive and antioxidant properties [22], Antidepressant [23-24], Antinociceptive and anti-inflammatory [25], Memory Enhancing [26], Immunomodulating
2.	*Yastimadhu (Glycirrhiza glabra)*	*Vatapittajit, Balya, Chakshushya, Vrishya, Varnya, Raktaprasadana*	*Kasa, Kshaya, Svarabheda, Vatarakta, Vrana*	Gastrointestinal motility [27], Antiinflammatory, Immuno-stimulating [28], learning and memory [29-31], Antidepressant [32-33], Antistress, Hepatoprotective and Antihepatocarcinogenic [34]
3.	*Guduchi (Tinospora cordifolia)*	*Tridoshashamaka, Balya, Deepana, Rasayana, Sanghr ahi, Raktashodhaka,*	*Jvara, Kushtha, Pandu, Prameha, Vatarakta, Kamala*	Effect on Stress, Learning and Memory [35-36] Antioxidant [37-38], AntiInflammatory
4.	*Shankhapushp I (Convolvulus pleuricaulis)*	*Kapha-pittahara, Balya, Ayushya, Medhya, Rasayan a, Mohanashaka*	*Manasaroga, Apasmara*	Effect on learning, memory and behavior [39] Anxiolytic [40-41], Antidepressant, Antistress, Brain nourishment
5.	*Brahmi (Bacopamonni era)*	*Kaphahara, Medhya, Rasayana, Svarya,*	*Kushtha, Jvara, Shopha, Pandu, Prameha,*	Cognitive properties [42], Antidepressant [43] Anxiolytic effect [44],

Sr. no.	Drug			
		Vatahara, Visahara, Ayusya, Matiprada, Mohah ara	*Manasavikara*	Memory enhancer [45]
6.	*Vacha (Acoruscalam us)*	*Deepana, Krimiha ra, Kanthya, Kaph ahara, Medhya, Vatahara, Mala Mutravishodhana*	*Shoola, Apasmara, Svasa, Kasa, Vibandha, Unmada, Adhmana, KarnaSrav a, Smriti Daurbalya.*	Anticonvulsant Effect 46 Antidepressant Effect [47], Neuroprotective Effect [48], Antioxidant Effect
7.	*Jatamansi (Nardosta chysjatamansi)*	*Medhya, Tridoshanut, Varnya, Nidrajanana*	*Daha, Kushtha, Visarpa, Manasaroga, Anidra*	Improve learning and memory [49], Anti-depressantactivityz [50], stress modulating Antioxidant effect, Cognitive impairment [51]
8.	*Kushmanda (Benincasa hispida),*	*Balya, Deepana, Hridya, Vrisya, Bastishodhaka, Mehana, Tridosha hara, Jirnanga, Pust Prada, Bastishodhaka, Arochakahara, Vatapittajit*	*Mutraghata, Mutrakricchra, Prameha, Trishna, Ashmari, Manasa Vikara, Malabandha*	Anti-depressant activity [52], anti-oxidant activity [53]
9.	*Jyothishmati (Celastrus panniculatus)*	*(Prabhava: Medhya), Sirovirecanopaga, Deepana,Kaphah ara,Vamaka,Virec haka, Medhya*	*Vatavyadhi, Smritidaurbalya, Svitra*	Effect on the learning and memory [54], Anti-depressant effect [55], Cognitive properties and Antioxidant effect [56], Neuroprotective effect, Anti- anxiety activity [57], Anxiolytic potential effect
10	*Ashwagandha (Withania somnifera)*	*Rasayana, Vatakaphapaha, Balya, Vajikarana*	*Shotha, Ksaya, Daurbalya, Vataroga, Klaibya*	Improving memory and Cognitive Functions [58], Treating Neurodegenerative disorders [59]

TABLE 2: STUDIES ON PHARMACOLOGICAL PROPERTIES OF *AYURVEDIC* COMPOUND FORMULATIONS USED IN AUTISM

Sr. no.	Drugs	Description
1.	*Saraswat Churna*	A total of 50 Geriatric Depression patients were randomly selected for the clinical investigation, based on the DSM-IV-TR diagnostic criteria for depression and their level of depression as measured by the Geriatric Depression Scale (GDS-30). Thirty patients were given *Saraswata Churna* (Group-A), while the other twenty were given Citalopram as a control (Group-B). The treatment trial lasted three months. The Hamilton Depression Ratingscale (HDRS) was employed to assess medication response [60]
2.	*Saraswatarista*	Animals were protected from Diazepam-induced learning and memory impairment by *Saraswatarishta* pre-treatment for two weeks. It can be employed as a preventative measure to overcome dementia in Alzheimer's disease, according to this observation. *Saraswatarishta* was not found to improve learning or memory in either a single dosage or a two-week continuous treatment. More research is planned to determine how *Saraswatarishta* affects Alzheimer's disease patients in order to confirm is favourable effect on demensia[61]
3	*Panchagavya Ghrita*	The study's goal was to evaluate *Panchagavya Ghrita's* efficacy in treating OCD to supportive psychotherapy. The study used a randomised controlled experiment with a sample size of 20 people, and the assessment was done using the Yale Brown Obsessive Compulsive Scale. There were substantial differences between the trial and control groups. However, there was no statistical significance when comparing the two groups [62]
4	*Kalyanaka Ghrita*	It is said to help with personality disorders, insanity, cough, epilepsy, diseases caused by sinful deeds, anaemia, itching, poison, consumption, delusion, Diabetes mellitus, artificial poison, fever, scanty semen volume, infertility, in those whose minds have been influenced by gods, those with poor intelligence, stammering speech, who desire good memory, and those with poor digestive power. Strength, auspiciousness, long life, complexion, fortune, and sustenance are among the bene fits it bestows. It is also ideal for *Pumsavana* (maleprogeny treatment) [63]

Shodhana Therapy for Autism (*Unmada*): *Shodhana* therapy is highly effective in autistic children and, when combined with *Shamana* therapy, produces significant results. This therapy includes *Abhyangam* (oil massage), *Mridushodhana* (gentle body purification through emesis or purgation), *Siropichu* (application of special oil on the head), *Shirodhara* (continuous pouring of oil over the forehead), and *Shirolepam* (application of medicinal paste to the head region). *Mridushodhana*, or mild purification through purgation, helps in eliminating toxins from the body, improving the function of all organ systems. It also has a curative effect on the vitiated *Doshas* of *Pitta* and *Kapha*, which subsequently impacts the *Rajo* and *Tamo Mano Doshas*. This leads to improved mental and emotional stability, allowing a person to better cope with stressful situations. *Shodhana* therapy, including *Basti* (medicated enema), followed by *Snehana* (oleation) and *Swedana* (sudation), is effective in managing *Rasadusti* (toxins within the body), aiding in the detoxification process and restoring balance throughout the system.

Abhyanga involves manual pressure applied to the body's surface, promoting relaxation and aiding in disease pacification. The skin's lymphatic system is stimulated during this process, enhancing lymph flow. This leads to an increase in tryptophan in the blood, which boosts serotonin levels, helping alleviate anxiety, depression, and schizophrenia. Tryptophan also accumulates in the pineal gland, supporting melatonin and serotonin production, which regulate hormonal balance and promote emotional stability. By supporting these processes, *Abhyanga* helps improve mood, reduce irritability, and combat conditions related to serotonin and melatonin deficiencies.

Shiro Pichu is a specialized *Ayurvedic* therapy where a cloth or cotton soaked in medicated oil is placed on the crown of the head for about 60 minutes. This treatment is beneficial for conditions like psychosis, facial palsy, headaches, insomnia, memory loss, scalp dermatitis, and neurological disorders. It relaxes the brain, enhances concentration, and is particularly effective for autism spectrum disorders, especially in *Vata*-dominant cases. The medicated oils applied at the anterior fontanel are believed to diffuse into the brain, promoting therapeutic effects. Oils like *Vatasani tailam, Tunga drumadi tailam, Chandanadi tailam,* and *Himasagra tailam*, along with specific ghee preparations, are commonly used in managing autism.

Shirodhara is an *Ayurvedic* therapy where liquid medication is gently poured over the forehead. Depending on the condition, the liquid can be oil, milk, buttermilk, coconut water, or plain water. It is used to treat various ailments like eye diseases, sinusitis, neurological disorders, insomnia, and skin conditions. In Autism Spectrum Disorders, *Shirodhara* is more suitable for older children, as younger ones may not cooperate. *Shiropichu* is recommended first for younger children, with *Shirodhara* introduced later when they can tolerate it. For *Pitta* dominant autism cases, buttermilk is preferred for *Shirodhara*.

Basti (Enema) is a key *Panchakarma* therapy for managing *Vata*-dominant disorders, including autism spectrum disorders. It helps eliminate vitiated *Vata dosha* through the rectum using medicated oil or herbal decoctions. There are two main types:

Nirooha Basti (decoction enema) and *Anuvasan Basti* (oil enema). *Basti* therapy aids in detoxification, improves metabolic balance, and helps alleviate communication and sensory integration issues in autistic children.

Nasya (Nasal Therapy) is a *Panchakarma* treatment where medicated oils, liquids, or powders are administered through the nose to cleanse toxins from the head. It helps maintain the health of the eyes, nose, and ears. In Autism Spectrum Disorders, *Nasya* is highly beneficial as it directly targets the brain, aiding in the removal of accumulated biological waste and improving neurological function.

Sattvavajaya Chikitsa (Psychotherapy): *Sattvavajaya Chikitsa* (Psychotherapy) focuses on enhancing cognitive abilities and stabilizing emotional imbalances in autistic children. Techniques include *Bandhana and TamogrihaRodhana* (confinement for aggressive behavior), *Tarjanam* (admonishment), *Trasanam* (frightening), *Danam* (reward system), *Harshanam* (delighting), *Santwanam* (pacification), and

Vismayam (mystic experiences). These methods aim to restore mental faculties like *Gyana* (self-awareness), *Vigyana* (specific knowledge), [11] *Dhairya* (patience), *Smriti* (memory), and *Samadhi* (mental balance). Additionally, *Dhee, Dhriti*, and *Smriti* play a crucial role in making sound decisions and maintaining overall well being [64]. Diet and lifestyle play a crucial role in managing autism. Certain foods like dairy products, nightshade vegetables (tomatoes, eggplant, potatoes, and peppers), citrus fruits, peanuts, preservatives, artificial colors, food additives, insecticides, pesticides, and heavy metals may aggravate autism symptoms. Autistic children often have weakened digestive and immune systems, leading to improper food digestion. This can cause incompletely digested food to enter the bloodstream, triggering an autoimmune response similar to an allergic reaction. Naturally occurring probiotics support healthy digestion and immune function, making them beneficial in autism management.

CONCLUSION: This review highlights the potential of *Ayurvedic* management, integrated with supportive therapies, to improve outcomes in children with Autism Spectrum Disorder (ASD). Autism is a complex neurodevelopmental disorder affecting social interaction, communication, and behavior, with no definitive cure currently available. While modern medicine focuses on symptomatic relief, *Ayurveda* offers a holistic, individualized approach that addresses both physiological and psychological dimensions. *Ayurvedic* interventions such as herbal and polyherbal formulations, *Abhyanga*, *Shiropichu*, and *Shirolepa* along with a wholesome, regulated diet, support neurodevelopment, enhance adaptive behavior, and promote emotional balance. Classical therapies like *Shamana* (palliative), *Shodhana* (purificatory), and *Sattvavajaya Chikitsa* (psychotherapy) form the foundation of this approach. When combined with modern interventions like behavioral therapy, speech therapy, special education, and parental counseling, *Ayurvedic* treatments contribute meaningfully to improved functionality and quality of life. In summary, an integrative model that combines *Ayurvedic* and contemporary practices offers a promising, multi-dimensional strategy for the long-term management of ASD, helping children become more communicative, functional, and socially engaged members of their families and communities.

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