

## TO STUDY THE EFFICACY OF *JYOTISHMATI GHRITA* ON LEARNING DISABILITY OF CHILDREN

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### ABSTRACT

Ayurveda represents an ancient system of traditional medicine prevalent in India about 5000 years old. *Medhya* is an Ayurvedic concept that implies intellect. *Budhi* (intellectual power of brain) is a powerful entity which retains the specific knowledge or the essence of the texts gained by reading, listening or repeating it. Learning disability means the difference that is noticed between the kids learning capacity & their real learning ability. This neurological condition is due to the kids brain that finds it hard to understand specific signals & does not permit the kid from executing the information linked with those signals. Learning disability & Ayurveda focuses on drugs that motivate the nervous system & these stimulant

drugs in turn the release of norepinephrine & dopamine in the brain & thus the transmission power get activated. Unfortunately, modern medicine based psychoactive drugs have met with limited success in treatment of various neurological problems. Ayurvedic herbal medicines engender & summon intelligence, memory & mental perception. These drugs promote the Intellect (*Dhi*), Retention power (*Dhriti*), Memory (*Smriti*). Out of which *Jyotishmati* (*Celastrus panniculatus* Wild) plant is one of the cognition enhancer. This review discusses about the effect of *Jyotishmati Ghrita* on learning disability in children.

**KEYWORDS:** *Medhya*, Memory, Learning Disabilities, *Jyotishmati Ghrita*.

### INTRODUCTION

Kaumarbhritya is one of the eight branches of Ayurveda which specifically deals with the newborn and child care. Acharya Kashyapa, the father of Kaumarbhritya signifies the importance of this branch by underlining this fact that, an individual who has been well

nursed and cared in his /her childhood is then capable of attaining the healthy and sound adulthood.<sup>[1]</sup>

कौमारभृत्यमष्टानां तंत्राणांमाद्यं उच्यते॥

आयुर्वेदस्य महतो देवानामिव हव्यपः ।

अनेन हि संवर्धितम इतरे चिकित्स्यन्ति ॥

का.सं.वि. १/१०

This nursing and caring in childhood is at multiple levels as physical, dietary, environmental, psychological, etcetera. Psychological strata of child care, is one of the important domain to be considered. But unfortunately this domain of child psychology is the most neglected part in our society, especially in rural area. As the May is the month of Mental Health Awareness, an article recently published in Indian Express on 4th of May 2018, says that CEN (Childhood Emotional Neglect) is the direct cause of BPD (Bipolar Personality Disorder) in adulthood. Dr. N Sucharita, a counseling psychologist, says “We don’t discuss emotional vulnerability. It’s usually seen as a personality trait. Validation of emotions happens when we are children. As adults we wear masks and keep changing the same. You are not taught how to handle your emotions; instead the parents’ voice becomes a constant nagging siren. We are forced to learn certain things as rules which get masqueraded as family system and nobody feels that there’s a problem when emotions of a child are neglected so much so that they get rooted deep within him/her surfacing later in adulthood”.

Today’s era of parenting is very crucial. As compared to parents of couple of generations back today’s parents are more focused and anxious about their children. Pattern of teaching and competitive stress is a routine burden over school going kids. Also the social scenario has been changed from joint family to more and more nuclear families which limit the inter-personal human relation exposure. Thus scholastic pressure is going upward day by day. Thus every parent is always in search of intelligence and memory power enhancing techniques, tricks, life styles. Intelligence and memory both of them are part of mental health of a child. Intelligence and memory could be correlated to Buddhi and Smruti in Ayurveda.

Ayurveda has given some key inputs regarding the mental health of an individual. Acharya Vagbhata says that gaining knowledge about one’s own Dhi, Dhruiti and Atma is the best medicine as far as the mental health is concerned.<sup>[2]</sup> Dhi or Buddhi is the decisive power of an individual which is one of the main components of knowledge gaining process.

जायते विषये तत्र या बुद्धिर्निश्चयात्मिका ।

यवस्यति तथा वक्तुं कर्तुं वा बुद्धिपूर्वकम् ॥ -च.शा.१/२३

Acharya Charaka defines Buddhi as 'Nischayatmika,' (the decision making power of an individual).

वक्ष्यन्ते कारणान्यष्टौ स्मृतिर्यैरुपजायते ॥

निमित्तरूपग्रहणात् सादृशात् सविपर्ययात् ।

सत्वानुबन्ध्यादभ्यासात् ज्ञानयोगत पुनःस्मृतम्

दृष्टशृतानुभूतानां स्मरणात् स्मृतिरुच्यते -च.शा.१/१४८,१४९

Smruti or memory is defined as the power of recalling of perceived knowledge. This perception of knowledge could be by any form as nimitta, rupagrahana, sadrushya, saviparyaya, satvanubandha, abhyasa, gyanayoga, punah shravan, drushta and anubhuta.

Early childhood years carries great importance as the intelligence and memory development occurs in these years only. Rapid brain development and high grasping power are potentials of early childhood years. These formative years are also important as child will be growing with the morals, principles and beliefs formed during this period. These morals are going to be the foundation of adult psychology. Erik Erikson, a German-American developmental psychologist and psychoanalyst, says that it's during early childhood that human personality develops. Children are valuable part of any society in any country. They are foundations of tomorrow's nation. Their physical and mental health is of prime importance.

Their continuous process of growth and development certainly includes physical as well as mental development. Their growth and development pattern reflects their status of well-being. Physical, motor, social, emotional, moral, and cognitive developments are important domains of child development.

Intelligence and memory are included in the cognitive development domain. Cognitive functions are the basis of all mind and intellectual functions. This domain of development is multifactorial and multidimensional. Human beings rely on thinking through which they not

only adapt to their environment but transform themselves in better ones. Healthy cognitive development prepares children reach their fullest potential and satisfy basic needs.

Scientists and thinker Abraham Maslow stated the hierarchy of needs of children. It is in the form of pyramid beginning with physiological needs at the bottom and moving through cognitive and emotional, social needs; it ultimately reaches to the need of self-actualization and transcendence.

### **AIM AND OBJECTIVE**

**Aim-**To study the efficacy of Jyotishmati Ghrita on learning disability in children.

**Objective-** To study the concept of learning disabilities according to Ayurvedic point of view.

### **MATERIALS AND METHODS**

For this study, the conceptual and basic materials have been collected from Ayurvedic classics as Brihatrayi and Laghutrayi, mainly Kashyapa Samhita and other classics with available commentaries as well as various reference books were reviewed. Various publications, research papers, text books have been referred to collect literary material. All this collected materials have been critically analyzed and evaluated as per hypothesis and problem selected currently. Related portion from modern medical science has also been compiled. Discussions with respected Guide and Co-Guide have been included in the body of thesis to reach out for applied conclusions.

### **NEED OF THE STUDY**

As the importance of education is increasing day by day scholastic performance of a child and efforts towards its improvement is the greatest concern in the today's parents. Also the academic burden in schools is increasing. All this scenario demands sharp, high grasping minded children which can handle these tasks with ease.

Intelligence and memory are the basic components of process of learning. Under the domain of educational psychology intelligence and memory were reviewed from Ayurvedic perspective.

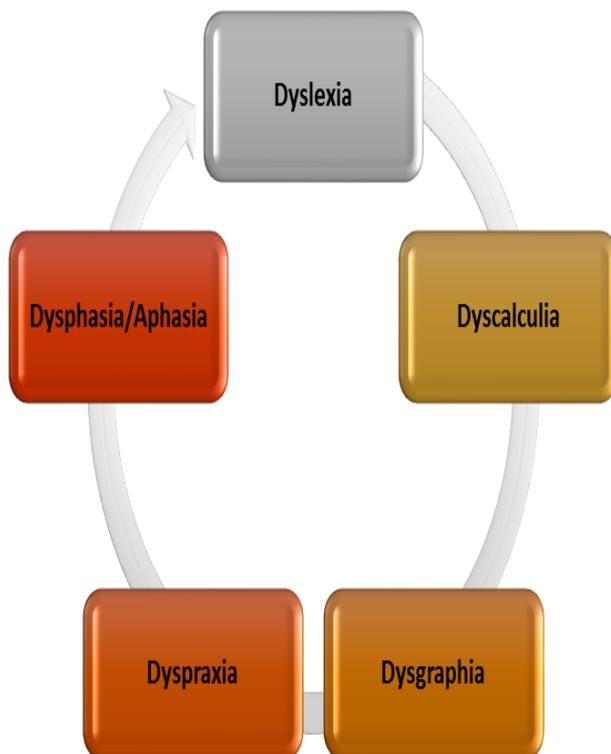
Also wide ranges of references are found regarding the Dhi, Dhriti, and Smriti in ancient compendia of Ayurveda. Dravyas and regimens (i.e., Achar Rasayanas) which act on faculties of Buddhi are also found. Out of which Jyotishmati (*Celastrus paniculatus* Wild)

plant is one of the cognition enhancer. Thus a study was undertaken to explore cognition enhancing properties of Jyotishmati ghrita (clarified butter) in school going age children.

The comparator drug was plain ghrita. Plain ghrita itself has been stated as cognition enhancer. Ghrita was prepared from standardized raw Jyotishmati seeds. Previous research work carried over the seed oil of Jyotishmati and intelligence and memory but for Jyotishmati ghrita hypothesized as better drug from children point of view. Therefore, attempt was made to explore the field of child psychology.

### LEARNING DISABILITIES

Learning disabilities arise from specific neurodevelopmental dysfunctions that prevent expected learning in one or more academic areas.<sup>[3]</sup> The important defining principle is that such disabilities are unexpected when considering the overall intellectual functioning of the child. A learning disability is not a problem with intelligence or motivation. Kids with learning disabilities aren't lazy or dumb. Their brains are simply wired differently. Simply put, children with learning disabilities see, hear, and understand things differently. This can lead to trouble with learning new information and skills, and putting them to use.



Common types of learning disabilities-Figure 1.

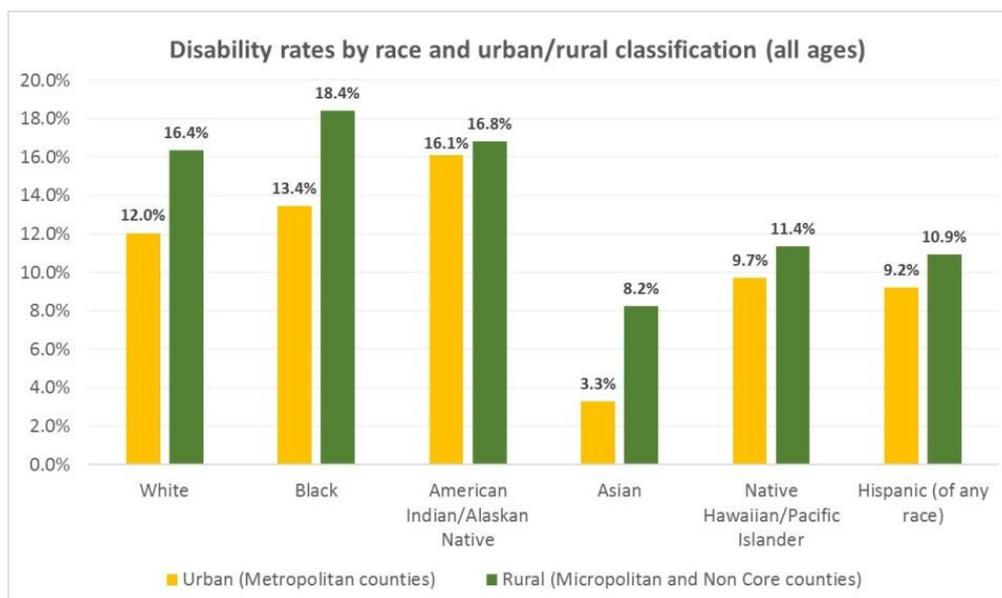


Figure 2.

## DRUG REVIEW

1. Jyotishmati (*Celastrus panniculatus* Wild) Jyotishmati seeds and Cow's plain ghee (clarified butter) were the raw drugs used for preparation of Jyotishmati ghrita. a. Historical review of Jyotishmati (*Celastrus panniculatus* Wild) plant Vaidik period- No description of this drug is found in Vedas, which are considered as the most ancient compendia. Samhita period- During the Samhita period, the drugs were classified into various groups according to their properties and actions'.

2. **Table Number 3** - Gana of Jyotishmati from Bhrihatrayi

Sr. No.	NAME OF SAMHITA	GANAs
१.	. Charaka Samhita	Shirovirechanopaga, moolini, shirsavirechana
२.	. Sushruta Samhita	Arkadi, Adhobhagahara, Shirovirechana
३.	Ashtanga Hridaya Samhita	Arkadi

- **Charaka Samhita**

In this compendium, Jyotishmati has been mentioned among the sixteen moolini drugs, out of which Jyotishmati is used as shirovirechana drug. This indicates that the useful part of Jyotishmati known in that era was root. As a shirovirechana drug it is indicated in many urdhwajatrugata diseases.<sup>[4]</sup> Jyotishmati is also useful as adjuvant to shirovirechana drugs and is used in murdhavirechana dhuma. Acharya Charaka has mentioned Jyotishmati as one of the ingredients of 'Chandanadi Taila and 'Aguruvadi Taila in the treatment of dahajanya jwara and sitajanya jwara respectively,<sup>[5]</sup> It is mentioned as one of the ingredients of Gandhahasti

agada which inactivates poison present in head as well it cures all types of fever, cholera, indigestion, insanity, epilepsy etc.<sup>[6]</sup>

- **Sushruta Samhita**

Acharya Sushruta has used it in nadvirana chikitsa in the form of varti. It has been used as a component of Syanadana taila and is prescribed in the treatment of bhagandara.<sup>[7]</sup> Sushruta has mentioned that oil of Jyotishmati causes shirovirechana.<sup>[8]</sup> The properties of Jyotishmati oil have been specifically mentioned as teekshna and laghu, katu rasayukta, katu vipaki, ushna in veerya and mrudu virechaka. It is useful in the treatment of kapha, krimi, kustha, prameha and diseases of the head.<sup>[9]</sup> It is used in the form of lepa in all type of kustha.<sup>[10]</sup> It is used in the treatment of unmada in the form of one of the ingredients of "Brahmyadi varti."<sup>[11]</sup>

- **Ashtanga Hridaya**

Jyotishmati has been used in the treatment of kapha, meda, krimi, kustha, visharoga and said good for vranashodhana.<sup>[12]</sup> Its oil is processed with the water of apamargakshara decanted seven times and massaged to destroy sidhma<sup>[13]</sup> It is used externally in the form of oil made with other drugs like yastimadhu, rodhra, shravani, sariva, utpala, patola, kakmachi in the management of khandostha (cleft lips).<sup>[14]</sup> Its seed has been used as one of the ingredient of Nilinyadi taila in the management of palitya.<sup>[15]</sup>

- **Table Number 4-Jyotismati Gana from Nighantu.**

No.	Nighantu	Gana/Varga
१.	Bhavaprakash Nighantu.	Haritakyadi
२.	Madanpala Nighantu	Abhayadi
३.	Dhanwantari Nighantu	Guduchyadi
४.	Sodhala Nighantu	Guduchyadi
५.	Rajavallabh Nighantu	Nana AushaDhi Varga
६.	. Shaligram Nighantu	Ashtavarga
७.	Kaiyyadeva Nighantu	AushaDhi Varga

### Role of Jyotishmati

#### The Indian Materia Medica

Jyotishmati oil extracted from is stimulant and nervine; oil stimulates intellect and sharpens the memory. The decoction of seeds is given in paralysis rheumatism, leprosy and gout. Oil is used as pomade for relieving rheumatic pains.<sup>[16]</sup>

**Indian Medicinal Plants Dictionary**

Jyotishmati seeds are diaphoretic nervine, febrifugal and emetic whereas seed oil is useful in treatment of depression, hysteria and enhancing memory; also used for scabies, eczema, wounds, rheumatic pains, paralysis. Leaves of *Celastrus* are antidysenteric and emmenagogue. A paste of its root-bark is applied to swollen veins and pneumonic infections.<sup>[17]</sup>

**2. Classification of *Celastrus panniculatus* Wild.**

Kingdom - Plantae

Division - Spermatophyta

Sub-Division -Angiosperms; Eudicots; Rosids

Order - Celastrales

Family- Celastraceae

Genus - *Celastrus*

Species - *C. panniculatus*



**Figure 3: Jyotishmati plant.**

**Common names:** Black Oil Plant, *celastrus*, oriental bittersweet, intellect tree, staff tree

**पर्याय-**

1. Jyotishmati /Jyotishka : bark has characteristic white spots
2. Kakandaki : fruits are similar to crow's egg
3. Peeta taila : extract of yellow oil
4. Vega : grows rapidly

5. Paravatpadi : bears white/grey spot which are similar to the foot of a pigeon
6. Kanguni : seeds are similar to kanguni dhanya
- 7. Dhanya : which improves agni and intellect**
8. Katvika : katu rasayukta
8. Deepta : Agni deepaka
- 9. Jyotishlatha : a climber which improves intellect**
10. Agnimasha : Agni deepaka
11. Swarnalata : flowers are like golden yellow in color
- 12. Saraswati : gives intellect**
13. Vrusha : vajikaran in nature
- 14. Matida : renders Mati**
- 15. Medhya : promotes intellect**
- 16. Kshipra : fast acting**
- 17. Tejasvini : helps an individual to glow by knowledge**
18. Lata : a climber
19. Sukshamaphala : bearing small fruits
20. Sputatwacha : causes blebs on the skin or broken skin
21. Durjara : prevents senility
- 22. Durmada : prevents oneself from getting stupefied**
23. Agnibha : flowers are yellow like flames of fire

**3. Habitat** -It grows almost all over India, up to an altitude of 1,800 meters and is also found in the Middle and South Andaman. It is a large, woody, climbing shrub. The leaves are ovate, oblong and elliptical. The flowers are unisexual, small, greenish white or yellowish green. The capsules are globular, yellow; 1-6 seeded and are transversely wrinkled. The seeds are ellipsoid or ovoid or reddish brown, yellowish brown in color.

#### **4. Chemical constituents<sup>[18]</sup>**

Alkaloids, carbohydrate, sterol and triterpenoid phenolic compound, flavonoid, tannins, saponins and fixed oil are present in the leaves of *C. paniculatus*. **Composition of *Celastrus paniculatus* seed oil:** Saturated fatty acids namely butyric acid, caprylic acid, lauric acid, myristic acid, palmitic acid, stearic acid, arachitic acid, mono saturated fatty acids

(palmitoleic acid, oleic acid) poly saturated fatty acids (linoleic acid, eicosadienoic acid, arachitonic acid).

**Alkaloids:** Celastrine, paniculatine, sesquiterpene alkaloids (celapanin, celanigin, celapagin).

**Terpenoids:** Sesquiterpenoids (dihydro garofuran, quinonemethide) and phenolic triterpenoids (Celatrol, spristimerin, zelasterone, zeylasteral).

**Ester compounds:** Sesquiterpene polyol ester viz. malkanguniol, malkangunin, celapanine.

**Steroids:** Beta-sitosterol, celastral, pritimerin, zeylesterone, zeylasterol, terpenes.

## 5. Rasapanchaka

ज्योतिष्मति कटुस्तिक्ता सारा कफसमीरिजत् । अत्युष्ण वामनी तीक्ष्णा वन्हिबुद्धिस्मृतिप्रदा ॥

... भा.प्र.

**Rasa-** Katu pradhan tikta

**Veerya-** Ushna

**Vipaka-** Katu

**Guna-** Teekshna, sara

**Karma-** medhya, vamak, vanhikar, vranahara, visarpahara, panduhara

**Prabhava** -Buddhiprada, smritiprada

**6. Action of Jyotishmati on Dosha** -The entire compendia (Brihatrayi & Laghutrayi) have clearly mentioned action of Jyotishmati on dosha as kapha & vataghna. Jyotishmati act as kapha shaman due to hot potency (ushna veerya) & katu tikta rasa, katu vipaka & teekshna guna. On the other hand it increases pitta dosha due same properties.

**7. Action of Jyotishmati on Dhatu-** Jyotishmati acts on rasa, rakta, majja and shukra dhatu.

**8. Action of Jyotishmati on Mala** -As mentioned above Jyotishmati possess ushna veerya, teekshna as well as sara guna which causes increased perspiration i.e. increase in sweda. Also Ingestion of Celastrus oil in greater quantities causes diarrhea and increases the urine output.

**9. Medhya, Smritivardhak & Buddhivardhak action of Jyotishmati** Figure Number 7 - Medhya, Smritivardhak & Buddhivardhak action of Jyotishmati.

### 10. Biological action of *Celastrus paniculatus* on various systems

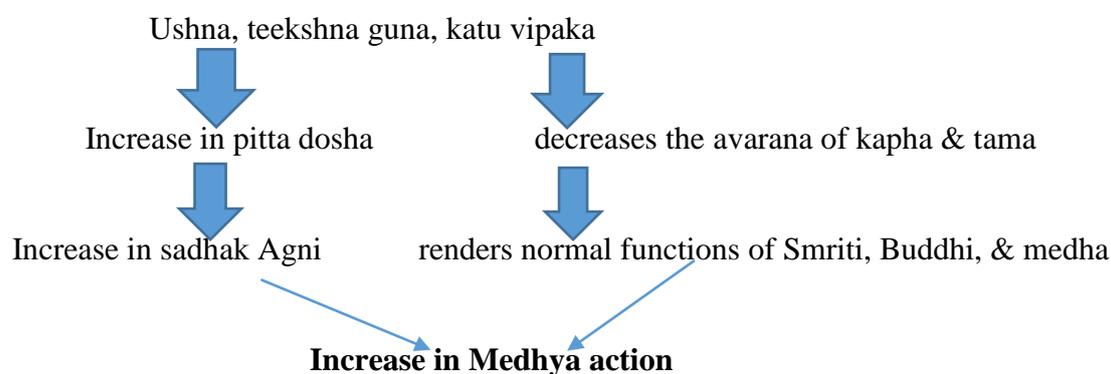
**Action on learning & memory**<sup>[19]</sup> 1 mL of 5% emulsion of seed oil administration orally for 3 days improved the learning process in albino rats.

**Cognitive enhancing properties:** The seed oil of *C. paniculatus*, when administered chronically (50, 200, or 400 mg/kg for 14 days) selectively reversed the impairment in spatial memory produced by acute central muscarinic receptor blockade, supporting the possibility that one or more constituents of the oil may offer cognitive enhancing properties.

#### **Action on CNS**<sup>[20]</sup> **Neuromodulating effect**

The alkali extract of *Celastrus* prevented aluminum induced neurotoxicity in the cerebral cortex, hippocampus and cerebellum of the rat brain.<sup>[21]</sup>

#### **Medhya, Smritivardhak & Buddhivardhak action of Jyotishmati**



**Nootropic activity-** *Celastrus paniculatus* whole plant methanolic extract was reported for its significant nootropic activity. It significantly improved the learning and memory of rats.

**Anti-convulsant activity-** Reduction in leptazole toxicity and increase in strychnine convulsions were observed when anti-convulsant activity of *Celastrus* seed oil was examined against leptazole, picrotoxin and strychnine induced convulsions in rats.

**Tranquilizing effect-** Seed oil produced a tranquillizing effect on rats, mice, monkeys and cats in a dose of 200 mg/kg. The fraction also decreased spontaneous motor activity, amphetamine induced hyperactivity, orientation hyperactivity and oxygen consumption in mice.

**On Cardio vascular system** - A gradual fall in cardiac output, bradycardia and marked increase in pulse pressure on isolated heart lung preparation in cat was observed with *Celastrus paniculatus* seed oil administered with emulsion (50-100 mg/kg).

**Anti-nociceptive & anti-inflammatory** activity of *Celastrus panniculatus* -Jyotishmati seed extract reported to possess significant activity in Swiss albino mice by tail immersion, hot plate and acetic acid induced writhing test models. The alkali and methanolic seed extract is reported for anti-inflammatory activity.

**Antioxidant activity of *Celastrus panniculatus*** -Free radical scavenging capacity and its effect on DNA cleavage induced by hydrogen peroxide UV-photolysis effects were investigated on the methanolic extract of *Celastrus* plant extract. It showed a dosedependent free radical scavenging capacity and also showed protective effect in human non-immortalized fibroblasts on DNA damage. The results indicate that the *Celastrus panniculatus* extract do exhibit antioxidant properties.

**Antibacterial action of *Celastrus panniculatus***-The CP seed oil showed antibacterial activity against *Micrococcus pyogenes* var. aureus, *Micrococcus pyogenes* var. albus, *Salmonella typhosa*, *Micrococcus pyogenes*, *Bacillus subtilis*, *Escherichia coli*, *Salmonella paratyphi* A and B, *Proteus vulgaris*, *Corynebacterium diphtheriae*, and *Pseudomonas pyocyana*.

**Antifungal activity of *Celastrus panniculatus*** - An inhibitory activity against following species of fungi (*Trichophyton mentagrophytes*, *Trichophyton rubrum*, *Trichophyton soudanense*, *Candida albicans*, *Torulopsis glabrata*, and *Candida krusei*) has been observed by *Celastrus panniculatus* seed oil.

**Antimalarial action of *Celastrus panniculatus*** - Crude solvent extracts from the root bark and stem of *Celastrus panniculatus* were screened for anti-malarial activity against *Plasmodium falciparum* using an in vitro culture system. A fraction of the chloroform extract of the root bark showed the highest anti-malarial activity.

## Questionnaire for Assessment of Dhi, Dhriti, Smruti, Medha

NO	Question	Mind function to be assessed	Response	Remarks
1.	If a Neem tree is planted in front of your house, what will you do? a) Pluck 2 leaves of the tree every day so that it will grow b) neglect the tree c) Observe the growth of roots by uprooting it d) take all the necessary care of the tree	चिन्त्य (thinking)	Hitakara/ Ahitakara	
2.	From the following letters of the alphabet which meaningful word is formed by taking three consecutive letters together? a c d e g c a t d o a) dog b) cat c) cot d) dot	विचार्य (analyzing)	Hitakara/ Ahitakara	
3.	Pick up the term which does not belong to the given group. a) gold b) charcoal c) silver d) iron	उद्दय (reasoning)	Hitakara/ Ahitakara	
4.	The first and the second term have a specific relationship. The same relationship is seen in the third term and the term which will replace the question mark. Which term will replace the question mark? 8 : 65 :: 9 : ? a) 82 b) 80 c) 81 d) 67	ध्येय (meditating)	Hitakara/ Ahitakara	
5.	The national song should be sung everyday because; a) The country progresses because of that b) it helps to improve the memory c) It increases the feeling of national pride d) In future we can get a job as singer	संकल्प (determination)	Hitakara/ Ahitakara	
6.	Which following alternatives match exactly with the question figure?	इंद्रिय अभिग्रह (control over senses) & स्वस्य निग्रह	Hitakara/ Ahitakara	

Thus this clearly defines that assessment of Buddhi (Dhi), Dhriti, and Smriti can be done from Ayurvedic point of view and literature available. But in today's era many psychological tests are available which can evaluate intelligence, memory and various aspects of cognition. An overview of such intelligence tests and modern aspect of IQ has been discussed in following section.

**Research design**

- A) Authentication & Standardization of raw drugs and prepared trial drug.
- B) Clinical study-open randomized controlled clinical trial with simple random sampling.
- C) Assessment-Pre administration of trial drug and Post-administration of trial drug.

Research design opted for present study was randomized controlled clinical trial. It was designed in the form of comparative study between the group of subjects exposed to trial drug and another one group with control drug. Raw drugs were Jyotismati seeds (*Celastrus panniculatus* Wild) and Cow's clarified butter (go-ghrita).

**Authentication & Standardization-** Jyotishmati seeds were procured from local market. They proved to be authentic and were certified by a renowned research institute.

Physico-chemical analysis, study of organoleptic characters and Heavy Metal assessment of Jyotismati seeds (crude drug), Cow's Clarified Butter (Go ghrita) and prepared drug i.e. 'Jyotishmati ghrita' was carried out in from the renowned research institute. The concerned certificates **Pharmaceutical preparation of (trial drug) 'Jyotishmati Siddha ghrita'**

Ghrita murchana- Before preparation of Ghrita, murchana was performed as per authentic text.<sup>[22]</sup> Aama dosha and durgandha can be removed from raw ghrita and ghrita becomes pure and ready to assimilate medicinal properties from raw drugs with which it will be processed. Such murchit ghrita attains good odor, color and is easily digested.

**Method of Preparation of Jyotishmati ghrita-** Jyotishmati seeds (1250 g) were soaked in 1200 milliliter of water overnight. A maximum fine paste (kalka) was made which was then mixed with previously boiled and murchit ghee and then twenty liters of water was added gradually. The mixture was stirred well continuously so that the kalka is not allowed to adhere to the vessel. When all the drava dravyas (water) was evaporated the moisture in the kalka also began to evaporate. The kalka was taken out and tested from time to time to know the condition and stage of the Paka. Kalka with Madhyam Paka is soft, non-sticky and rolls between fingers. It burns without any cracking noise. Ghee was heated till the Madhyam Paka was achieved. The ghee then prepared was filtered at room temperature. All the procedure was done according to sneha Paka kalpana mentioned in Sharngdhar samhita Madhyam Khand.<sup>[23]</sup>

## CONCLUSION

As Jyotishmati is a proven cognition enhancer and Go ghrita is itself one of Medhya dravya, Jyotishmati ghrita may be helpful to enhance the intellect of the children with learning disabilities.

## DISCUSSION

Learning disabilities occur as a result of neurological problems in the human brain. Children are the worst affected with mental disabilities & it interferes in their basic learning capabilities like reading and writing. Ayurvedic medicines are most effective in treating all types of learning and mental disabilities & Jyotishmati Ghrita may be one of them. Jyotishmati may act as a cognition enhancer by its Raspanchaka, Prabhava, Karma, Guna & by chemical constituents and pharmacological properties.

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