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Review Article

ROLE OF *PANCHBHAUTIKA TAILA NASYA* IN SOCIO-BEHAVIORAL DISORDERS - AYURVEDA PERSPECTIVE

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ABSTRACT

Socio-behavioural disorders have a profound impact on affected individuals lives and society at large. The conventional treatment for child and adolescent psychiatric disorders often involves psychopharmacology, which may be associated with adverse side effects. Ayurveda, an ancient traditional system of medicine, offers a multidimensional therapeutic strategy to address these disorders. According to the classics, the unstable status of *Mana, Indriya* and *Atma* leads to many socio-behavioural disorders. To address this challenge, Ayurveda have given a multidimensional approach including *Medhya rasayanas, Panchakarma* procedures like *Nasya* and nonmedical treatment including *Achara rasayana* (rejuvenation through the right code of conduct) and *Satvavajaya chikitsa. Panchbhautika taila nasya* is mentioned in *Kashyap samhita* for increasing the strength of sensory organs This research article explores the efficacy of Ayurvedic *Nasya* therapy, particularly *Panchbhautik Taila Nasya*, as a potential intervention to enhance cognitive function and mitigate socio-behavioural abnormalities.

INTRODUCTION

According to World Health Organization, Children may suffer from a wide range of Socio-behavioral disorders are one of the leading causes of disability worldwide [1]. According to National Family Health Survey (NFHS-5), the population below the age 15 years 26.5%. One-third of the world's population is under the age of 15 years, and 5- 15% of the population suffers from behavioural problems that are socially handicapped [2]. According to a review of recent studies, the incidence of mental health issues among school-age children in India ranges from 6.33% to 43.1%.[3] In India, 33.4% are affected by the same with more promiscuity in certain socio-behavioural problems like thumb sucking. Nail biting is more commonly accounted for in preschool children with a prevalence of 45-60% and bruxism is observed in 5-30% of children.[4] Behavioural problems are more among children due to parental abuse, exploitation, neglect, and lack of love and care, kids are no longer in the care of their parents.[5]

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Socio-behavioural disorders are defined as when children cannot adjust to a complex environment around them, they become unable to behave in a socially acceptable way resulting in the exhibition of peculiar behaviours and this is called socio-behavioural problems.[6] Even after decades of research into the biological mechanism underlying the human brain's specific action, the brain's functioning is still unclear. The brain regulates higher mental processes which include cognition, and memory in addition to directing and coordinating vital life processes.[7] Children may exhibit a lack of concentration, forgetfulness, impulsiveness, and difficulty in controlling emotions. They may complain of various somatic problems like unexplained headache, stomach ache, anorexia, and insomnia may have trouble in building friendships or dealing with people and may show aggressiveness. These are some typical indicators that indicate that something is wrong with the child and that the child requires attention.[8]

AIM AND OBJECTIVE

- To discuss and elaborate on the various Ayurvedic principles and modern concepts related to socio-behavioural disorders.
- To evaluate the role of *Panchbhautika taila nasya* in the management of socio-behavioural disorders.

Need of Study

Many governments and decision-makers currently do not fully understand the magnitude of socio-behavioural disorders in children. The majority of parents, and teachers cannot recognize these behavioural disorders. It is only handled seriously when the issue gets severe and incapacitating. Early detection promotes quick recovery and directs developmental paths in a more beneficial and adaptable direction.[9]

MATERIAL AND METHOD

Review of different Ayurveda literature as a primary source of data along with the literature review as secondary data from reputed journal papers and other e-resources documenting the concept of Socio-behavioural disorders was done.

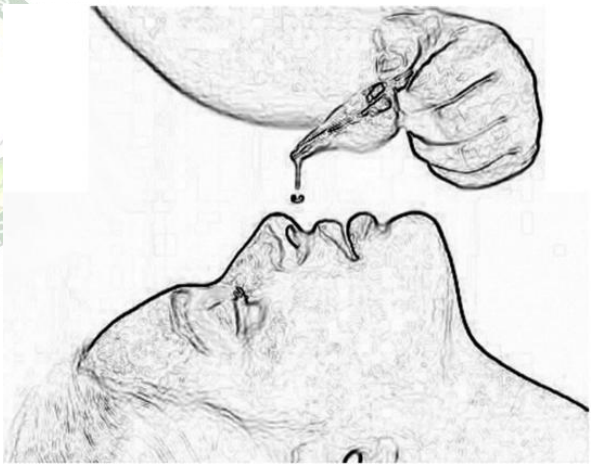
Ayurveda Perspective

Mental health is very important for a child‘s social and cognitive development. A child's physical, mental, and social development happens in stages from birth to adulthood. According to Ayurveda, the social behaviour of the growing foetus is start to determine itself in the uterus because fetal expressions are transformed to the mother through sensory–motor pathways and If mothers' wants are not met or destructive methods (*Garbhopghatkar bhavas*) are used, as represented in the form of their varied desires (*Dauhridavastha*), it may result in a cause of these disorders. It can be interpreted that mothers towards various diets desire to fulfill the need for proteins, vitamins and mineral supplements to facilitate efficient organogenesis and mental development too. As a result, if the mother's wishes are disregarded during *Dauhridavastha*, the foetus may not receive the necessary nutrients it needs, which can lead to deformity of nervous system in the born child and may have various psychological problems.[10]

According to the classics, the primary pathological events in the emergence of socio-behavioral illnesses are the transformation of *Manoarthas*, *Manovishayas*, *Manas karmas*, and the degradation of *Dhee*, *Dhriti*, and *Smriti*.[11] The interdependence of the body and mind is strongly emphasized by Ayurveda to maintain the body's equilibrium. These phenomena are having the specific predominance of specific *Doshas* viz., Smriti due to *Vayu, Buddhi* and *Medha* due to *Pitta* and *Dhriti* due to *Kapha.* The action is initiated by the *Raja Guna*, checked by the *Tama Guna*, and produced by the *Satwa guna*. *Raja* and *Tama dosha* are the pathogenic factors of the mind. Their aggravation causes a number of mental disorders as well as physical ailments. Therefore, all three factors must be in equilibrium for normal psychological functioning.[12]

Satwavajaya chikitsa deals with psychotherapy for withdrawal of the mind from harmful objects and thoughts by modulating certain factors like *Vijnana, Jnana, Sheela, Harsha, Samadhana* (consolation), *Vismapana* (astonishing), *Vismarana* (forgetting), *Ashwasana* (hopes), *Dhairya*, *Dhyana* (meditation) may be effectively used to optimize the psychological environment of the child to yield a positive effect.[13] It consists of non-medical treatment including *Achara rasayana* (rejuvenation through the right code of conduct), *Ashtanga yoga* and *Satvika ahara. Achara rasayana* (rejuvenation through the right code of conduct) is educating the parents to make them understand the developing psyche of the child.[14] The mind is made stronger and less vulnerable to outside impressions by following an eight-step process known as *Ashtanga yoga*. Based on the correlation between diet and psyche which is mentioned in classical texts of Ayurveda, it is observed that to some extent, diet is directly responsible for developing behavioural problems. As *Mana* is *Panchbhautikya*, *Satvika* and *Medhya Ahara* are equally important to correct the disturbed state of mind which provide nourishment for *Mana*.[15]

Mode of action of *Nasya*



One of *Nasya Karma's* significant and useful therapies is *Navana.* Drops of a medicinal oil or ghee are placed in the nostril to administer *Navana*. In the procedure of *Nasya*, the drug absorption may be influenced by activities like head massages, fomentation and lying down with your head lowered.[16]

Shirah being the prime seat of knowledge and also the prime controller of the entire body has been termed *Uttamanga* because *Nasa* is indirectly connected with the brain centres in the head.[17] According to Charaka, *Nasa* being the doorway to *Shirah* (head) the drug administered through the nostrils, reaches *Shringataka marma* and spread in the *Murdha* (brain) taking route of *Netra* (eye), *Shrotra* (ear), *Kantha* (throat), *Siramukha* (opening of the vessels) etc. and extracts the evil *Doshas* from the *Uttamanga* by scratching them in the supraclavicular

region[18]. The intranasal administration could deliver large-sized molecules into the brain by passing blood brain barrier. Thus, intranasal route of drug administration is of great significance that can effectively deliver the drugs directly into CNS.[19]

Effect on Neurovascular and Neuro-Psychological Levels

The lowering of the head, elevation of lower extremities and fomentation of face, seem to have an impact on blood circulation of the head and face. As the efferent vasodilator nerves are spread out on the superficial surface of the face, receive stimulation by fomentation and it may endanger the increased blood flow to the brain. The adjacent nerves called terminal nerves which run along the olfactory nerve connected with the limbic system of the brain including the hypothalamus. This limbic system is also concerned with the behavioural aspect of human beings, besides control over endocrine secretions. Thus, certain drugs administered through the nose may have an impact on immediate psychological functions by acting on the limbic system through olfactory nerves.[20]

Rasa (taste), *Guna* (property), *Virya* (potency), *Vipaka* (*Rasa* after digestion and metabolism), and *Prabhava* (specific pharmacological effect) are the five primary components of the *Rasa-panchaka* principle, which determine the structural activity of any drug.

Table 1: *Rasa-panchaka* (Ayurvedic Pharmacodynamics) of contents of *Panchbhautika Taila*

S.No	Ingredients	Part used	Rasa	*Guna*	*Virya*	*Vipaka*	*Doshaghnata*
1	*Jivaka*[21]	Rhizome	*Madhura*	*Picchila, Snigdha*	*Shita*	*Madhura*	*Vatahara, Pittahara*
2	*Rishbhaka*[22]	Rhizome	*Madhura*	*Guru, Snigdha*	*Shita*	*Madhura*	*Vatahara, Pittahara*
3	*Meda*[23]	Rhizome	*Madhura*	*Guru, Picchila, Snigdha*	*Shita*	*Madhura*	*Pittahara*
4	*Draksha*[24]	Fruit	*Madhura, Kashaya*	*Guru, Sara, Snigdha*	*Shita*	*Madhura*	*Vatahara, Pittahara*
5	*Yashtimadu*[25]	Root	*Madhura*	*Guru, Snigdha*	*Shita*	*Madhura*	*Vatahara, Pittahara*
6	*Pippali*[26]	Fruit	*Katu, Tikta, Madhura*	*Snigdha, Laghu*	*Anushna*	*Madhura*	*Vatahara, Pittahara*
7	*Bala* [22]	Root	*Madhura*	*Laghu, Snigdha, Pichila*	*Shita*	*Madhura*	*Vatahara, Pittahara*
8	*Prapoundr*[22]	Flower	*Tikta, Madhura, Kashaya, Katu, Lavana*	*Guru, Ruksha*	*Shita*	*Madhura*	*Pittahara, Kaphahara*
9	*Brihati*[27]	Root	*Katu, Tika*	*Laghu*	*Ushna*	*Katu*	*Kaphahara, Vatahara*
10	*Manjishtha*[24]	Root	*Kashaya, Tikta, Madhura*	*Guru*	*Ushna*	*Katu*	*Pittahara, Kaphahara*
11	*Tvak*[25]	Bark	*Katu, Tika, Madhura*	*Ruksha, Laghu, Tikshna*	*Ushna*	*Katu*	*Kaphahara, Vatahara*
12	*Punarnava*[25]	Root	*Madhura, Tika, Kashaya*	*Ruksha*	*Ushna*	*Madhura*	*Kaphahara, Vatahara*
13	*Sharkara*[23]	Sugar	*Madhura*	*Snigdha*	*Shita*	*Madhura*	*Pittahara, Vatahara*
14	*Anshumati*[24]	Root	*Tikta, Madhura*	*Guru*	*Ushna*	*Madhura*	*Tridoshahara*
15	*Shatavari*[23]	Root	*Madhura, Tikta*	*Guru, Snigdha*	*Shita*	*Madhura*	*Vatahara, Pittahara*
16	*Vidanga*[25]	Fruit	*Katu, Tikta*	*Ruksha, Laghu,*	*Ushna*	*Katu*	*Kaphahara,*

				Tikshna			*Vatahara*
17	*Nilotpala*[23]	Flower	*Madhura, Kashaya*	*Snigdha, Pichila*	*Shita*	*Madhura*	*Pittahara*
18	*Gokshura*[25]	Fruit	*Madhura*	*Guru, Snigdha*	*Shita*	*Madhura*	*Vatahara*
19	*Saindhav*[22]	Rock salt	*Lavana*	*Laghu, Snigdha*	*Shita*	*Madhura*	*Vatahara, Pittahara*
20	*Rasna*[24]	Patra	*Tikta*	*Guru*	*Ushna*	*Katu*	*Kaphahara, Vatahara*
21	*Nidgdhika*[25]	Root	*Katu, Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*	*Kaphahara, Vatahara*

Majority constituents of *Panchbhautika taila* are *Madhura rasa pradhan* followed by *Tikta rasa, Snigdha guna pradhan* followed by *Guru guna*, in context of *Virya,* formulation *Shita virya pradhan, Madhura* in *Vipaka, Tridoshashamak* mainly *Vata pitta shamak* property depicted in table no. 1. These attributes might help in understanding the pharmacological action of *Panchbhautika taila*.

Madhura rasa work as *Ahladkara* (pleasant in psychological manner), *Indriyanam prasadkara* (sensory organ nourishing) It nourishes all the *Dhatus* (at cellular level).[28] *Snigdha guna* acts as *Vatahara,* it acts as *Bala varna kara* (promoting strength and complexion)[29]. On the psyche (*Manas*) it has positive effects by improving activeness and providing inspiration. *Virya* as the factor which will perform the pharmacological action of particular drug.[30] The formulation consists of both *Shita* and *Ushna virya dravya* hence *Ushna virya* acts as *Vata kaphahara* and *Shita virya* acts as *Pittahara,* so ultimately *Virya* influence on the *Tridoshahara* property. *Vipaka* is assessed finally after the complete metabolisation of the drug and through the Final effect of the drug. *Madhura vipaka* nourishes *Sapta dhatu* upto *Shukra dhatu.*[30]

Table 2: Reported actions of Individual Ingrediants of *Panchbhoutika taila*

S. No	Ingredients with Latin name	Active Constituent	Type of study	Possible mechanism of action
1	*Pippali (Piper longum)*	Essential oil, alkaloid	Pre-clinical	Traditional medicines have treated memory loss with the fruits of the Piper longum tree.[31]
2	*Bala (Sida cordifolia)*	beta-sitosterol, Ephedrine, hypaphorine, vasicinone	Pre-clinical	The ethanolic extract of *Sida cordifolia* was found to be most potent in free radical scavenging activity both in vitro and ex vivo. It is used for the management of neurodegenerative diseases such as Parkinson's, Alzheimer's, loss of memory, degeneration of nerves and other neuronal disorders.[32]
3	*Manjistha (Rubia cordifolia)*	Glycosides	Pre-clinical	The effect of the alcoholic extract of *Rubia cordifolia* was also investigated on cold restraint-induced stress and scopolamine-induced memory impairment. Alcoholic extract enhanced brain gamma-amino-n-butyric acid (GABA) levels and decreased brain dopamine and plasma corticosterone levels.[33]
4	*Tvak (Cinnamomum zeylanicum)*	Essential oil, tannin, mucilage	Pre-clinical	*Cinnamomum zeylanicum* can induce cognitive improvement in SCOP-treated rats and this effect can be attributed to a certain extent to decreased oxidative stress.[34]
5	*Shaliparni (Desmodium gangeticum)*	Alkaloids	Pre-clinical	*Desmodium gangeticum* also decreased whole-brain acetylcholinesterase activity. Hence, D. For enhancing memory, gangeticum appears to be a potential candidate.[35]
6	*Shatavari (Asparagus*	Saponins	Pre-clinical	*Asparagus racemosus* showed nootropic and anti-amnesic activities in the models tested

	racemosus)			and these effects may probably be mediated through augmentation of the cholinergic system due to its anti-cholinesterase activity.[36]
7	*Vidanga (Embelia ribes)*	Benzoquinone, alkaloid (christembine), tannin, essential oil	Pre-clinical	Embelin is a nootropic substance that is also demonstrated to have anti-amnesic properties against scopolamine-induced memory impairment in rats. Consequently, embelin may be a potential drug for the treatment of AD. [37]
8	*Rasna (Pluchea lanceolata)*	Flvonoides Quercetin, Isorhamnetin	Pre-clinical	Evidence that Pluchea lanceolata hydroalcoholic extract may provide neuroprotection through its antioxidant capabilities includes its ability to reverse oxidative stress, particularly through maintaining glutathione peroxidase levels and lipid peroxidation in ischemia circumstances[38]
9	*Yashtimadhu (Glycyrrhiza glabra* Linn.)	Glycerhizine, Glycyrrhizic acid, Glycyrrhetinic acid. Aspargin, sugar, Resin, Starch	Pre-clinical	Since liquorice corrected the amnesia caused by scopolamine, it's probable that it has a positive impact on learning and memory[39]
10	*Punarnava (Boerhavia diffusa* Linn)	Alkaloid - Punarnavin	Pre-clinical	Hydroalcoholic extract of Boerhavia diffusa contains flavonoids and polyphenols was considered a powerful neuroprotective agent that could offer useful support to Parkinsonism therapy[40]
11	*Draksha (Vitis vinifera* Linn)	Malic acid, Tartaric acid, Oxalic acid, Carbohydrate, Tannin	Pre-clinical	The findings of the present study revealed the significant neuroprotective actions of V. vinifera by modifying the biochemical parameters and inhibiting the mRNA expression of Amyloid Precursor Protein and Tau, which are the key pathological hallmarks of Alzheimer‘s disease[41]

CONCLUSION

There is a need of finding an effective intervention like *Nasya* of *Panchbhoutika taila* with the maximum therapeutic efficacy for treating socio-behavioural disorders in growing children. Counselling with the family and using Ayurvedic principles to treat socio-behavioral issues might stop the progression of behavioural issues in children. The *Panchbhoutika taila* nootropic and neuroprotective properties are determined through Ayurveda *Rasapanchaka* (pharmacodynamics) as well as numerous documented preclinical studies to normalize the function of intellect and cognition. This review gives an idea to perform a randomized clinical trial to assess the safety and efficacy of the *Nasya* of *Panchbhoutika taila* in socio-behavioural disorders.

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