



# Ayurveda intervention in behavioural disorder of children

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**ABSTRACT:** Behavioral problems are commonly prevalent worldwide. These disorders include many tension reducing activities that appear during childhood at various levels of development. All young children can be naughty, defiant and impulsive from time to time, which is perfectly normal. However, some children have extremely difficult and challenging behavior that are outside the norm for their age. This review is based on data collected from classical ayurvedic literature, published research works in various journals and counseling experiences. These problems can result from temporary stressors in the child's life, or they might represent more enduring disorders. It is important to diagnose and treat them timely, as they increase the risk of getting psychiatric illnesses, if left untreated. Treatment options include psycho education of parents, cognitive behaviour therapy, adoption of *ayurveda* principles and medication and treatment for associated problems. *Ayurveda* is the science that encompasses the mind, body and soul with the health. *Ayurveda* principles such as *aacaara- rasaayana*, *sadvritta* and *satvaavajaya- cikitsa*, *swarnpraasana*, *antaparimaarjana*, *bahiparimaarjana* are the best non pharmacological and pharmacological modalities required for the prevention of behavioural problems. It is common knowledge that *ayurveda* is used to treat physical ailments, it is very much beneficial in treating psychiatric issues as well.

**Key words:** Behavioural disorder of children, *Satvaavajaya*, *Swarnpraasana*, *ayurveda* in behaviour disorder.

## Introduction

Mental health of a child is of basic importance to gain the ability to live harmoniously in the changing environment. Child's health is the corner stone of national progress. The community which neglects its children retards their future progress. UNICEF has given great attention to the concept of development of the whole child which means it is essential to promote their health as they are the vulnerable segment of the society<sup>[1]</sup>. In India, children below 16 years of age constitute over 40% of its population<sup>[2]</sup>. Community studies on emotional/behavioural disorders in children and adolescents conducted in India have yielded desperate point prevalence estimates (2.6% to 35.6%)<sup>[3,4,5]</sup>. Behavioral problems of children are becoming common and roughly 6 million children

globally<sup>[6]</sup> and out of these 33.4% in India are affected by different behavioral problems<sup>[7]</sup>. Methodologically robust studies on community sample share reported overall point prevalence rates of behavioural disorder is 9.4% in children aged 8-12 years, 12.5% in children aged 0-16years<sup>[5]</sup>. In India, the prevalence rate of behavioural disorders is such as 43.1% and 14.5% conduct disorder, 29.7% attention-deficit/hyperactivity disorder, 12.5% emotional disorder, 7.1% scholastic disorders, 2% adjustment disorder and 9.5% pervasive developmental disorder<sup>[8]</sup>.

If we take a close look at the families of today's society, we will be aware of the horrible fact that even children are being affected by behavioural and mental disorders of various types. When children cannot adjust to a complex environment

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around them, they become unable to behave in the socially acceptable way, resulting in exhibition of peculiar behaviour. Diagnostic and Statistical Manual of Mental Disorders (DSM) lists categories of disorders along with a number of different related disorders. Example categories in the DSM-5 include anxiety disorders, bipolar and related disorders, depressive disorders, feeding and eating disorders, obsessive-compulsive disorders and personality disorders<sup>[9]</sup>.

The U.S. Department of Health and Human Services Trusted Source describes behavioural disorders as involving “a pattern of disruptive behaviour in children that last for at least 6 months and cause problems in school, at home, and in social situations”<sup>[10]</sup>. Nearly, everyone shows some of these behaviour at times, but behaviour disorders are more serious.

Behavioural disorder results due to emotional, physical and social deprivation. These disorders may be a result of various factors such as the disharmonious parent-child relationship, family or marital problems, child abuse or neglect, chronic illness, injury, separation or bereavement. Problems in children are often multifactorial and their manner of expression too varies in relation to various stresses they go through. In stressful situations, young children usually do not express their behaviour or reactions to different events at once; they build up often to be expressed later. They usually tend to react with disturbed physiological functions such as eating and sleeping. Older children may exhibit disturbances in relationships with friends and family, poor school performance or development of various fears and phobias, these can pose a difficulty for the parents to judge whether this behaviour is normal or aberrant enough to require help.

Behavioural problems in children are actually the characteristics that do not meet the criteria of mental disorder, but can lead to the development of mental disorder in later life, if not taken care of. Behavioural problems can be of different types-

both externalizing and internalizing i.e. hyperactivity, inattention, temper, tantrum, depression, anxiety, aggression, disobedience, peer problems, nail biting, thumb sucking, sleep problems etc. Behavioural problems in children should be identified and managed as early as possible to prevent further complications.

### **Stages of psychological development:<sup>[11]</sup>**

According to Erik Erikson, a person passes through eight developmental stages that built on each other. At each stage we face a crisis. By resolving the crisis, we develop psychological strengths or character traits that help us become confident and healthy people.

#### **Hope : trust vs mistrust (oral –sensory, infancy, 0-1 years)**

The first stage of Erikson is theory of psychosocial development occurs between birth and 1 year of age and is the most fundamental stage in life. Because an infant is utterly dependent, developing trust is based on the dependability and quality of the child as caregivers. At this point in development, the child is utterly dependent upon adult caregivers for everything they need to survive including food, love, warmth, safety and nurturing. If a caregiver fails to provide adequate care and love, the child will come to feel that they cannot trust or depend upon the adults in their life.

#### **Outcomes**

If a child successfully develops trust, the child will feel safe and secure in the world. Caregivers who are inconsistent, emotionally unavailable, or rejecting contribute to feelings of mistrust in the children under their care. Failure to develop trust will result in fear and a belief that the world is inconsistent and unpredictable.

#### **Will: autonomy vs shame and doubt (early childhood, 1-3 years)**

The second stage of Erikson’s theory of psychosocial development takes place during early childhood and is focused on children developing a

greater sense of personal control. At this point in development, children are just starting to gain a little independence. They are starting to perform basic actions on their own and making simple decisions about what they prefer. By allowing kids to make choices and gain control, parents and caregivers can help children develop a sense of autonomy. The essential theme of this stage is that children need to develop a sense of personal control over physical skills and a sense of independence.

#### **Outcomes**

Children who struggle and who are shamed for their accidents may be left without a sense of personal control. Success during this stage of psychosocial development leads to feelings of autonomy; failure results in feelings of shame and doubt.

#### **Purpose: initiative vs guilt (locomotor-genital, preschool, 3-5 years )**

The third stage of psychosocial development takes place during the preschool years. At this point of psychosocial development, children begin to assert their power and control over the world through directing play and other social interactions.

Children who are successful at this stage feel capable and able to lead others. Those who fail to acquire these skills are left with a sense of guilt, self-doubt and lack of initiative.

#### **Outcomes**

The major theme of the third stage of psychosocial development is that children need to begin asserting control and power over the environment. Success in this stage leads to a sense of purpose. Children who try to exert too much power experience disapproval, resulting in a sense of guilt.

#### **Competence : industry vs inferiority (latency, school age 6-11 years)**

The fourth psychosocial stage takes place during the early school years from approximately ages 6 to 11. Through social interactions, children begin to develop a sense of pride in their accomplishments and abilities.

Children need to cope with new social and academic demands. Success leads to a sense of competence, while failure results in feelings of inferiority.

#### **Outcomes**

Children who are encouraged and commended by parents and teachers develop a feeling of competence and belief in their skills. Those who receive little or no encouragement from parents, teachers or peers will doubt their abilities to be successful.

#### **Fidelity : identity vs role confusion (11 - through the end of adolescence)**

The fifth psychosocial stage takes place during the often turbulent teenage years. This stage plays an essential role in developing a sense of personal identity which will continue to influence behaviour and development for the rest of a person's life. Teens need to develop a sense of self and personal identity. Success leads to an ability to stay true to yourself, while failure leads to role confusion and a weak sense of self.

During adolescence, children explore their independence and develop a sense of self. Those who receive proper encouragement and reinforcement through personal exploration will emerge from this stage with a strong sense of self and feelings of independence and control. Those who remain unsure of their beliefs and desires will feel insecure and confused about themselves and the future.

Erikson believed that his theory was a "tool to think with rather than a factual analysis." So take these five stages (the rest three stages are starting from adulthood) as the starting point you use to help your child to develop the psychosocial skills they need to become a successful person, but do not take them as a law.

Erikson also believed that a sense of competence motivates behaviours and actions. Each stage in Erikson's theory is concerned with becoming competent in an area of life.

If the stage is handled well, the person will feel a sense of mastery, which is sometimes referred to as ego strength or ego quality. If the stage is managed poorly, the person will emerge with a sense of inadequacy in that aspect of development.

### Signs of mental health problems in children<sup>[12]</sup>

#### Emotional and behaviour signs

- Does not seem to enjoy things the way they used to.
- Has repeated tantrums or consistently behaves in a defiant or aggressive way.
- Seems sad or unhappy, or cries a lot.
- Is afraid or worried a lot.
- Gets very upset about being separated, avoid or avoids social situations.
- Starts behaving in ways that they've outgrown, like sucking their thumb or wetting the bed.
- Has trouble paying attention, can not sit still or is restless.

#### Physical signs

- Is not sleeping well or oversleeps.
- Has difficulty getting out of bed.
- Has trouble eating or overeats.
- Has lost or gained a lot of weight.
- Has physical pain that does not have a clear medical cause – for example, headaches, stomach aches, nausea or other physical pains.

#### Social signs

- Is not doing as well as usual at school
- Is having problems fitting in at school or getting along with other children
- Does not want to go to school
- Is not doing what their teacher asks
- Has withdrawn from their friends
- Does not want to go to social events like birthday parties or usual activities like sports.

#### Mind in ayurveda

*Mana* is the entity through which the knowledge is obtained, which is closely related with *Aatmaa*,

through which one can perceive and the seat of *mana* is *hrdaya*<sup>[13]</sup>.

*Manas* is told as '*ubhayaatmaka*' i.e. it is a dual faculty which has both sensory and motor functions and hence considered as a superior faculty because it controls and co-ordinates all other faculties connecting them with the soul<sup>[14]</sup>.

In contemporary psychology, mind is an all-encompassing umbrella term that covers the joint functioning of the brain and body in conjunction with the memory, world view, personality, soul, and other intangible facets of human life and psychology. It covers the way a person interacts with people and the world, how they learn and express themselves and how they relate to abstract concepts such as religion, spirituality, metaphysics and other areas of thought. The mind is the manifestations of thought, perception, emotion, determination, memory, knowledge, conscience and imagination that take place within the brain<sup>[15]</sup>.

In *ayurveda*, child behavioural disorders are known to be a *vaata* imbalance. The word *vaata* is defined as "*vaa gatigandhanayoh*"<sup>[16]</sup>. "*Vaa*" word is concerned with movement (*gati*) and intimation (*gandhana*). The meanings of word '*gati*' are motion, moving and going. The meaning of word *gandhana* are intimation, information and perception. The principal functions of *vaata dosha* are maintaining and controlling all the human machinery or body (*tantra yantradhara*), causing all kinds of movements (*parvarttaka ceshtaanam uccaavacaanaam*), *Vaata* regulates and guides the mind (*niyantaa pranetaa ca manasa*), stimulates all sensory and motor organs (*sarvendriyaanam udvejakah*), directs senses to their respective objects (*sarvendriyaarthanam abhivodhaa*). It is responsible for proper building of the tissues and organs of the body (*sarvasareera dhaatu vyuhakara*), Also *vaata* connects the different tissues (*sandhaanakara sareerasya*), Induces speech

(*pravartako vaaca*) etc<sup>[17]</sup>. Things experienced by the sense organs should be distinguished between helpful or negative, good or evil, and this is achievable by the smooth functioning of the mind.

Thus, imbalance in its amount, causes mental instability, irrelevant talks and overall distorts the children's mental ability to maintain a balance between talks. With weak *vaata*, a child is not able to move hands, see or hear properly, even the initiation or coordination is also affected. Sense organs for hearings are first initiated so that they can respond to a particular stimulus. *Vaata* is required to carry the sound to the hearing apparatus to recognize it's actual meaning. If somehow the *vaata* part is defective, nothing can be properly heard or recognized.

Although *vaatadosha* is prominent but later on, higher levels of imbalance of it impairs the *pitta dosha*, which leads to eagerness, frenzy, fury or jumping behavior in children. High energy levels, zestful responses of the brain and nervous system and behaviour issues happen due to the high level of *pitta dosha* in children. That may be the reason behind the child's hyperactive behaviour.

Ayurvedic treatment involves a combination of behavioral therapy and medications. *Ayurveda* says that both medication and behavioral modifications are necessary to cure behavioral disorders. The treatment helps in improving the self-control and other behavioral aspects. They also suggest using the various medications to calm the senses and help in improving the behavior.

The principle involved in treating behavioural disorder-

### **Deepana and Paacana**

This theory corrects the digestive fire and *aama*. In this way, it corrects the appetite, removes the *srotas*- obstructions by eliminating the *aama* and helps to properly feed all seven tissues.

### **Srotassodhana (cleansing the channels)**

Primarily the channels that perform brain functions are affected. *Doshas* get vitiated in the person possessing low level of *sattva guna* (weak minded people) in turn vitiate *hrdaya* (mind), which is the seat of intellect. There from the channels carrying mental factors (*mano-vaha srotasas*), quickly delude the mind of the person<sup>[18]</sup>. Ayurvedic herbs are helping to remove obstruction in channels, particularly *manovaha-srotas*. Because of its penetrating and digestive properties, it clears the channels by digesting the *aama* and helps the brain to function normally.

**Rasaayana medicine** – *Rasaayana* is the therapy which is mostly used for promotion of strength including immunity and alleviation of disorders<sup>[19]</sup>. The *dravyas* which promote the body tissues (*dhaatus*) are known as *rasaayana*<sup>[20]</sup>. *Rasaayana* is used for both purpose to promote strength in the healthy and as well as to cure the disease. From promotive treatment, one attains longevity, memory, intelligence, freedom from disorders, youthful age, excellence of lustre, complexion and voice, optimum strength of physique and sense organs, successful words, respectability and brilliance. *Rasaayana* (promotive treatment) means the way for attaining excellent *rasa* like *dhaatus*<sup>[21]</sup>. *Medhya rasaayana* drugs are those which particularly work on mental development and rejuvenate nervous system. The use of the juice of *mandukaparni*, the powder of *yastimadhu* with milk, the juice of *gudooici* (stem) and the paste of *sankhapushpi* along with root and flowers -these *rasaayana* drugs are life promoting, disease alleviating and the promoters of strength, *agni*, complexion, voice and intellect. Out of these, *sankhapushpi* is specifically intellect promoting<sup>[22]</sup>.

### **Pancakarma therapies**

There is important role of *pancakarma* if *doshas* are more vitiated. *Pancakarma* therapies eliminate

*aama*/toxins. *Pancakarma* -pre procedures, major procedures with ayurvedic medication have good impact on conduct disorders by maintaining *dhṛti* and preventing ethics negligence. *Dosha* - imbalance can be taken care with the help of *pancakarma* to detoxify toxins, facilitate adequate nutrition to *dhatu*s and balance equilibrium in brain. Stress plays a vital role for inequilibrium of *dhee*, *dhṛti* and *smṛti*. *Pancakarma*, *praanaayaama* (breathing techniques), *yogasana*s (postures), *bandha-mudras* (postural relaxation and meditation ways) and *medhya* medicines relieve stress and maintain

the proper function of neurotransmitters and inturn central nervous system.

Different *pancakarma* pre-procedures with their mode of action helping to cure and prevent behavioral problems in children.

**Satvaavajaya cikitsaa-** *Satvavajaya cikitsa* is an unique non-pharmacological approach for treating the mental disorders. It is the first of its kind and if developed can really prove much useful. Lord Krishna was the first counselor who delivered the message of *Gita* to Arjuna in the battle field of Mahabharata when the latter got

Table 1		
No.	Procedure	Mode of action
1	<i>Sirodhaara</i> - pouring of herbal oil, medicated milk or decoction over forehead	Vasodilatation, tranquilizing effect due to increase in brain circulation, cognition, improved memory, sleep, Relieves irritability <sup>[23,24]</sup>
2	<i>Sirolepa</i> - application of a paste of herbal formulations across the entire scalp	Calm and cooling effect, mood regulation <sup>[25,26]</sup> .
3	<i>Nasya</i> -medicated oil instillation	Stimulant action on brain and its sensory-motor centres. Relieved symptoms of ADHD, Autism <sup>[23,27]</sup> .
4	<i>Snehana</i> - application of oils and ghrilas to the entire body <i>Swedana</i> - inducing sweat in the patient	Nourishment to skin, muscles, nerve endings, <i>vaata</i> pacifying action by increased circulation and vasodilatation leads to improve motor function, bulk and strength. Relieves pain, stiffness <sup>[26,28]</sup> .

depressed. This is a beautiful example of counseling, a sort of psychotherapy<sup>[29]</sup>.

*Satvaavajaya* helps to attain a stable and harmonious equilibrium between man and his environment needed to reduce man's vulnerability to mental diseases and to permit him to lead a more productive and satisfying life. Thus controlling or restraining the mind from desire for unwholesome objects is nothing but *satvaavajaya*, which can be achieved by increasing *satva* to subdue the vitiated *maanasa dosha* i.e. *rajas* and *tamas*.

The other psycho-supportive techniques like assurance, consoling the children by proper guidance and suggestion, quoting well known references and mythological stories with good moral, replacing the emotions, entertaining the patient with recreational therapy come within the limits of definition of *satvaavajaya*.

### **Aacaara rasaayana**

Acharya Charaka has laid down the unique concept of *aacaara rasaayana* which provides good mental, physical, social and spiritual health to the person who regularly follows it<sup>[30]</sup>. It is the rejuvenating behavioral therapy for the body and mind. It involves around psychological connection with physical health. *Aacaara-rasaayana* involves implementing positive lifestyle like having *satvik* diet, speaking the truth, practising non-violence, avoiding anger, indulging in spiritual and religious activities. *Rasaayana* therapy acts by correcting the *doshas* imbalance, improves *agni* and leads to qualitative production of *dhaatu* and increase the quality and quantity of, which is the factor concerned with immunity and health. Practising *Aacaararaasayana* helps reducing stress. It is also proved that religious involvement

and spiritual well-being has a positive impact of physical, mental health and longer survival.

Thus, *aacaara rasaayana* encourages a moral path of integrity which directly relates to individual's state of health.

**Samskaara**—Any process which brings continuous positive change in a given *dravya*, *sareera*, *mana* and the *aatma* is called *sanskara*<sup>[31]</sup>. Sixteen *samskaras* are described in *samhita*. *Samnskaaras* are those religious rites and ceremonies which sanctify the body, mind and intellect. Physician can assess the proper growth and development of the child while performing the *samskaara*. It is a thought and a related action when repeated a number of times creates an impression of that thought and action on our mind. It is helpful to announce attainment of different milestone thus ensure proper physical and mental growth and to differentiate them from the child with any illness.

**Swarnaprasana** - Pure gold (in small quantity) is rubbed in water on a clean stone with honey and *ghrta*, be given to child for licking of gold increase intellect, digestive power and metabolic power, strength, gives long life, is auspicious, virtuous, increase complexion and elimination the *graha* (evil effect)<sup>[32]</sup>. It enhances the normal synaptic communication in brain<sup>[33]</sup>, diminishes the impact of depression as well as enhances the ability to focus<sup>[34]</sup>.

**Discussion**—Fulfilling only the material needs of a child and giving him/her a comfortable and luxurious life is just one part of the best child care program. On the other hand, the pre requisite component of emotional care and close bonding looks conspicuously missing in many cases. Most of the parents often unintentionally commit the crime of neglecting to cater various needs of their children. Spending time with little one and engaging in conversations with child is more important than buying digital toys.

## Conclusion

When mental health issues are diagnosed, it should be treated early, they often have excellent long term outcomes. When left undiagnosed and untreated, children and their families suffer needlessly. According to *ayurveda*, body and mind have symbiotic association therefore, diseases of body and mind affect vice versa to each other<sup>[35]</sup>. In *ayurveda* neither this disease nor the symptoms of behavior disorder are described but some references about abnormal behavior are discussed under features of *vaataprakrti*, *anavasthita cittatva*, *mano vibhrama*, *buddhi vibhrama*, *smrti vibhrama*, *seela vibhrama*, *ceshta vibhrama* and *aacara vibhrama*.

*Ayurveda* believes health to be a balance of mental, physical, and spiritual wellness. Our physical and mental health is intertwined, and we must look at ourselves in this holistic light. *Ayurveda* can act as an excellent adjuvant in advanced stage or alone capable to deal with behaviuor disorder with the help of *satvaavajaya*, *aacararassayana*, *sadvrta* and nootropic medicines with *pancakarma* and its pre-procedures. It is imperative to direct them through elders to prevent behavioral and conduct problems with adoption of *ayurveda*.

## References

1. Park K, Park J E. *Park's Text book of Preventive and Social Medicine*. 17 th edi. Banarsidas Bhanot Publishers, New Delhi, 2002.
2. B. Poornima, B. Malavika, K. Child and Adolescent psychiatric Epidemiology in India. 45 (IV):208-17, *Indian Journal of Psychiatry*, 2003
3. Pratap S, Sagar R. The need for National data on Epidemiology of child and adolescent mental disorder, 4 (2):22-27. *J. Indian Assoc. Child Adolesc. Ment. Health*, 2008
4. Nandi D N, Banerjee G, Mukherjee S P, Ghosh A, Nandi P S, Nandi S. Psychiatric morbidity of arural Indian community: Changes over a 20- Year interval 121:303-310. *Br J Psychiatry*, 2000
5. Merikangas K R, Nakamura EF, Kessler RC. Epidemiology of mental disorders in children and adolescents. *Dialogues* 11:7-20 *Cli Neurosci*, 2009

6. Kathleen RM; Erin FM; Ronald CK. Epidemiology of mental health disorders & adolescents, Dialogues,11(1):7-20 *Clin Neurosci*, 2009
7. Sushma BV, Srinivasan V, Khyrunnisa B. Prevalence of Behavioral Problems among School Children and their Demographic Correlates. *Guru*, 1(4):203-212, *Behavioral and Soc Sci*.2013
8. Harada Y, Satoh Y, Sakuma A, et al. Behavioral and developmental disorders among conduct disorder 56(6): 621–625p. *Psychiatry Clin Neurosci*. 2002
9. American Psychiatric Association. (5 th ed. Text rev.) Diagnostic and statistical manual of mental Disorders, 2022
10. U.S. Department of Health and Human Services, 200 Independence Avenue, S.W. Washington, D.C. Behavioral disorders. <https://www.mentalhealth.gov/what-to-look-for/behavioral-disorders,2017>
11. Erikson's stages of psychological development: Carrey N. The Two Ericksons: Forgotten Concepts and what Constitutes an Appropriate Professional Knowledge Base in Psychiatry. *Nov*;19(4):24. *J Can Acad Child Adolesc Psychiatry*. 2010
12. Johnson, S.E., Lawrence, D., Hafekost, J., Saw, S., Buckingham, W.J., Sawyer, M., Ainley, J., & Zubrick, S.R. Service use by Australian children for emotional and behavioural problems: Findings from the second Australian Child and Adolescent Survey of Mental Health and Wellbeing 50(9). 887-898. <https://doi.org/10.1177/0004867415622562>. *Australian and New Zealand Journal of Psychiatry*, 2016
13. Agnivesha, *Caraka Samhita, Vidyotini hindi commentary*, edited by Kashinath Shashtri & Gorakhnath Chaturvedi, Reprint ed. Vol-I, Sharirsthana, p-860, Khuddikagarbhavkranti 3/13, Chaukhamba Bharati Academy, Varanasi; 2008
14. Ibidem., Sutrasthana, p-173, Indriyopkramniya 8/ 4,
15. Ayurveda based dietary and lifestyle advocacy for mental health and psychiatric disorder: @ Central Council For Research in Ayurvedic Science, Ministry of Ayush, 2018
16. Sushruta, Sushruta Samhita, Ayurved tatva sandipika hindi Commentary; edited by Shashtri A, Reprint ed. Sutrasthan, Vranprashana 21/5, p-112 Chaukhambha Orientalia Varanasi; 2008
17. Agnivesha, *Caraka Samhita, Vidyotini hindi commentary*, edited by Kashinath Shashtri & Gorakhnath Chaturvedi, Reprint ed. Vol-I, Sutrasthana, Vaatkalakaliya 12/8, p-246, Chaukhamba Bharati Academy, Varanasi; 2008
18. Ibidem. Vol-2, Cikitsasthana, Unmadchikitsa, 9/5, p-305
19. Ibidem 1/1/5-6:3
20. Ibidem 1/1/5: 4.
21. Ibidem 1/1/7-8: 4.
22. Ibidem. 1/3/27-28: 23.
23. Khatana Rakesh, Rathi Renu, Khatana A. Role of Ayurveda in Down's syndrome- A case study. *IJGHC*9(2):203-213-*International journal of Green and Herbal Chemistry*. 2020
24. Mills PJ, Patel S. Advancing Research on Traditional Whole system Medicine Approaches 22:527–53022. *Journal of Evidence based complementary & Alternative Medicine (JEBCAM)*, 2017. Jyoti ST .Dimensions of Satvavajaya Chikitsa (Ayurvedic psychotherapy) & their clinical applications 1(1): 31-38. 248. *J Annals of Ayu Med*. 2012
25. Renu Rathi, Bharat Rathi, Dhiraj Sing Rajput. Behavioural Problems in Children–Methods to prevent and manage through good parenting and Ayurveda 3(4):117-122. *J. Res. Tradit. Med*, 2017
26. Tiwari R.P., Dwivedi S.R. et al. Psychological disorders in children and their therapy as per Ayurveda: 1 (4):96-99, *Intarchives of Integrated Medicine*, 2014
27. Christine A. Conelea; Benjamin T P, Tucker, Douglas W. Wods . A comprehensive clinical assessment of Tics and Habit disorders in children . *A Hand book of Clinical Psychology Competencies*, Springer publication. ISBN 0387097589,; 1403-1428, 2007
28. Agnivesha, *Caraka Samhita, Vidyotini hindi commentary*, edited by Kashinath Shashtri & Gorakhnath Chaturvedi, Reprint ed. Vol-I, Sutrasthana, swedaadhyaya 14, Chaukhamba Bharati Academy, Varanasi; 2008
29. *Bhagvad Gita, English translation*, edited by A.C. Bhaktivedanta Swami Prabhupada 19 th Ed Bhakti Vedanta Book Trust. 345, 2002
30. Agnivesha, *Caraka Samhita, Vidyotini hindi commentary*, edited by Kashinath Shashtri & Gorakhnath Chaturvedi, Reprint ed. Vol-2 Cikitsasthana, Rasayanadhyaya (1/4:33), p.58.
31. Ibidem. Reprint ed. Vol-I Vimansasthana (1/24)
32. *Kasyapa Samhita*, edited by Sri Satayapa I Bhisgacharya with Hindi commentary Vidyotini Reprinted dition, Sutra Sthana, Lehanaadhyaya, Chaukhambha Sanskrita Sansthan, Varanasi, 2006, page 3-5.
33. Mitra A, Chakraborty S, Auddy B, Tripathi P, Sen S, Saha AV, Mukherjee B. Evaluation of chemical constituents and free-radical scavenging activity of Swarnabhasma (gold ash), an ayurvedic drug: May; 80(2-3):147-53. *J Ethnopharmacol*, 2002
34. Abraham, G. E., McReynolds, S. A., & Dill, J. S. Effect of colloidal metallic gold on cognitive functions: a pilot study. *Frontier Perspectives*, 7, 39-41, 1998
35. Agnivesha, *Caraka Samhita, Vidyotini hindi commentary*, edited by Kashinath Shashtri & Gorakhnath Chaturvedi, Reprint ed. Vol-I Saarirsthana Mahati Garbhavkranti adhyaya: 36, p-772, 2008.