

KaphajaUnmada - A Reference for Depression in Ayurveda.

¹Dr Sunilkumar M.Chabanur, ² Dr D.G.Dipankar

PhD Scholar¹, ,Professor², Dept of Kayachikitsa, Dr.D.Y.Patil College of Ayurveda and Research,Pimri,Pune.

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Abstract : Kaphaja Unmada is one of the varieties of Unmada described in all Ayurvedic literature. The symptoms of this disease are mostly similar to those of depression. Depression is a disease condition that affects a person's mood. The manifestation of this condition gives major symptoms like depressed mood and loss of interest in usual pursuits, along with other symptoms like loss of appetite, poor intellect, changed sleep patterns (Hypersomnia or Insomnia) etc. In India, the prevalence of all psychiatric disorders is 65.4 per 1000 people, with depressive illness accounting for 51%, or 31.2 per 1000 people.Each person is different from another because of their discriminatory, creative, and intuitive minds. The mind is a special gift to mankind and is very complex in nature. It has the potential to function primarily as a dual nature. It is both, creative and destructive, positive and negative, active and passive, happy and sad. The mind is given more importance because it is the seat of perception for all happinessand sorrow, a representative of Souland a controller of sense organs. It maintains life's harmony through the balanced activities of its three attributes: Sattva, Rajas, and Tamas. In a healthy state, the mind boosts a person's energy, enthusiasm, and willpower and thereby enhances his functional output. But when it gets deranged, it gives rise to serious mental illnesses like Unmada.

Introduction : In Ayurveda Unmada is a common entity resents many of the Psychiatric disorders. In this ailment the intellect, mind, behavior, memory etc get perverted. Nija be applied to the Unmada can disordered state of mind in which the individual looses the power of regulating his/her actions and conduct according to the rules of the society. Kaphaja Unmada is one among unmada and Charaka explained the Unmada Lakshanas like Sthanamekadeshe son loves to stay in one place), Tushnibhava ing silence), Alpashaschankramana (motor activity is reduced), Sadana (fatigue), Anannabhilasha Anannabhilasha (dis likes for food), Alpabhuk Rahaskamata (prefer for solitude), or love Bhibhatsyatva (feeling of disapproval Shauchadvesha (dislike Svapnanityata (increased sleep (edematous face), Chardi (vomiting) and (less intellectual activity¹. Depression is a significant contributor to the global burden of disease and affects people in all communities across the world. Today, depression is to affect 350 million people. The World Mental Health Survey conducted in 17 countries

found that on average about 1 in 20 people reported having an episode of depression in the previous year.

Depressive disorders often start at a young age; they reduce people's functioning and often are recurring. For these reasons, depression is the leading cause of disability worldwide in terms of total years lost due to disability. The demand for curbing depression and other mental health conditions is on the rise globally. Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration. Moreover, depression often comes with symptoms of anxiety. These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilitie

Nirukti (Etymology) -Unmāda – un/ud +mada

Un/ud - urdhva i.e. upward direction

Mada – madyate, madyatiitiMada

I.e intoxication,excitement, uncontrolled force.

Though the prefix 'ud' which means upward direction, in this context the 'overflow' or 'beyond the limit would be an appropriate meaning. Hence Unmada can be considered as the uncontrolled state of mind.

Vyakhya (Definition) –

"UnmadonamaPunar Mano – Buddhi – Samjnajnana – Smrti – Bhakti – Sheela – Chesta – Achara – VibhramamVidyat"

Unmada can be defined as a condition in which there is disability or dysfunction³ of mind, Bhuddhi (intellect),Samjnajnana

(consciousness) , Smriti (memory), Bhakti (Desire), Sheela (manner), Chesta (behaviour) and Achara (conduct) occur. AcharyaCharaka defines Unmada as the Vibhramsha of the eight factors, so it is very important to know these eight factors when we are diagnosing Unmada.

1)Mano Vibhrama: (Hallucinations /Delusions)

Vibhramsha of Manas will affect both the functions and objectives of Manas.

2)Buddhivibhrama:(Loss ofIntellectual capacity)

The Karma of Buddhi is to take a decision by which it differentiates right from the wrong one and useful from the harmful ones (Cakra -C.Ni.7/3).

3) Smrtivibhrama: (Impairment of Memory)

Impairment of memory is seen up to certain extent in all the individuals.

4)Samjnavibhrama:(Consciousnes s/ Orientation/ Responsiveness)

Loss of orientation towards person, place and time is seen in this condition, and also he cannot tell his own identity.

5) Bhaktivibhrama: (Change in Desire)

Desires, wish, interest etc. are called as Bhakti. When this entity gets impaired, patient shows excessive interest.

6) Sheelavibhrama: (Change in Habits or Temperaments)

The disturbance in the usual habits and temperament is Sheelavibhrama (Cakra -C.Ni.7/3).

7)Ches<u>tavibhrama:(Change</u> Psychomotor activity).

Chesta is controlled and relevant motor activity which when gets impaired a person does VishamaChesta like AsthaneRodana, Gayana, Nartana, Vadana etc.

8) Acharavibhrama:

(Change in Personal Standards)

The person violates all ethics and manners. His behaviour and social attitude would be unfair, improper and irrelevant.

Nidana:

Bhiruta (timidity), Upaklishtasatva (agitated /disturbed mental status), Alpasatva (feeble minded) Kama,Krodha,Lobha,Harsha,Bhaya,Mo ha,Ayasa,Shoka,Chinta,Udvega etc (mind afflicted by various emotions), Vyadhi Vega Samusamudbhrama (perturbation due to the severity of Abhighatabhyata disease), (Mental disturbance caused due to trauma) Dwija Pragharshana Deva Gura (disrespect to gods), Pujya Vyatikrama (deviation from the method of worship), Vishama Sharira Cheshta (faulty bodily activity), Utsanna Dosha (vitiated Dosha) Atyupa Kshina Desha (exceedingly emaciated body).

Samprapti

Samprapti (etiopathogenesis) of Kaphaja Unmada have not been explained in particular, So the Samanya Samprapti of Unmada can be considered for the Kaphaja Unmada. Alpasatva vyakti(less intellectuval person) if continuously habituated to Kapha Vardhaka Ahara and Nidana (etiology) explained for Unmada, then there is vitiation occurs in Hrudaya (heart) which is the seat of Buddhi (intellect), along with this vitiation of Manovaha Srotas (Nervous system) leading to the manifestation of Kaphaja Unmada.

Purvaroopa

Shirasaha Shunyata (emptiness in the head), Chakshorakulata (restlessness

of the eyes), Karnasvana (sound in the ears),Ucchvasadhikya (hurried breathing), Asyasamsravanam (dribbling of saliva) Arochaka (tastelessness), Avipaka (indigestion), Anannabhilasha (aversion of food), Hrdgraha (catching pain in the heart region), Atyutsaha (over enthusiasm), Satatam Lomaharsha (continued horripulation), Unmattcittatvam (crazy minded).

Samprapti ghataka

Dosha: Sharirika Dosha (Tridoshaja), Manasika (Rajas & Tamas) **Dushya:** Rasa **Agni:**Jatharagni, Bhutagni, Dhatavagni Agni dushti: Mandata **Ama:** Agnijanya ama Srotas: Manovaha Srotodushti: Sanga, Atipravrutti, &Vimarga gamana Udbhava stana: Hrudaya Sanchara stana:Manovaha sroto avayava Vyakta sthana: Sarva sharira Adhishtana: Manas & Buddhi Roga marga: Madhyama Svabhava: Chirakari & Ashukari

Classification of Unmada

Different authors classified Unmada in different ways and types, the details of which are as follow:

Acharya Charaka classified Unmada into five main types- Vataja, Pittaja, Kaphaja, Sannipatika and Agantuja(C.Ni.7/3).Agantuja (External causes) type includes eight types of Grahavesha as Deva, <u>R</u>shi, Pit<u>r</u>, Gandharva, Yaksha, Rakshasa, Brahmarākshasa and Pishacha.

KaphajaUnmada is grossly correlated with Depression.

KaphajaUnmada:

Khaphaja unmade is one among the Nija Unmada, but the Acharya have explained the different symptoms of the Kaphaja Unmada.

Nidana and Samprapti of KaphajaUnmada

The Nidana and the Samprapti (Aetiopathogenesis) of the KaphajaUnmada have not been explained in particular, so the Samanya Nidana(Common Cause) and the Samprapti (Pathology) of the Unmada can be considered for the KaphajaUnmada. The aggravated Kapha along with Pitta afflicts the vital organs (heart), adversely affects the intellect and memory and vitiates the mind leading to this specific morbidity that is Kaphaja Unmada. The factors in the Nidana (cause) of Doshonmada along with the specific Nidana(cause) of Kapha vitiation are necessary for the manifestation of Kaphaja Unmada.

Lakshana (Symptoms)of KaphajaUnmada

Almost all our Acharya have explained the Lakshanas of the KaphajaUnmada, and the Lakshana (symptoms) are almost similar with only a few additional in some Acharya. According to CharakaSamhita the Lakshana (symptoms) of Kaphajaunmada are;

- **a)** Sthanamekadeshe- Staying in one place
- b) Tushnibhava keeping silence
- **c)** Alpashaschankramana -reduced motor activity

- d) Lalasinghanakasravanam discharge of saliva and nasal secretion
- e) Anannabhilasha Disinclination
 for food
- f) Rahaskamata prefer or love for solitude
- **g)** Bhibhatsyatva-Loathsome or disgust feeling
- h) Shauchadvesha- Aversion for cleanliness
- i) Svapnanityata-Hypersomnia
- j) Shvayathuranana- Oedematous face
- k) Shukla-stimita-malopdigdha
 - White and timid eyes with excreta
- I) Akshitvam adherent to them
- m)Sleshmopashaya viparyasat Suppression and Aggravation of
- Anupashayata condition by such regimens that are wholesome and Unwholesome for Kapha respectively.
- Nariviviktapriyata Likes solitude ness with woman
- p) Chardi Vomiting
- q) Balamcabhukte Post-prandial aggravation.

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According to Sushruta;

- a) Chardi Vomiting
- **b)** Agnisada -Loss of appetite
- c) Sadana Fatigue, lassitude
- d) Aruci Aversion to food
- e) Yoshitaviviktarati Fondness of sex and loneliness
- f) Alpamati-Weakminded, stupidity, ignorant
- g) Alpapracara Less movements or activities
- h) Nidraparo Hypersomnia
- i) Alpakathanam Less talk
- **j)** Alpabhuk -Less appetite
- k) Ushnasev-Longing for heat
- Ratraubhrusham -Aggravation at night

The Ashtanga Sangraha and the Ashtanga Hrudaya followed the same Lakshana (symptoms) of Sushruta Samhita and Madhava Nidana followed the Lakshana of the Charaka Samhita.

DEPRESSSIVE DISORDER

A depressive disorder is an illness that involves the body, mood, and thoughts. It affects the way a person eats and sleeps, the way one feels about oneself.

The clinical features are so varied and individualistic that there may be not be uniformity of symptoms between patients. The illness may have a sudden onset or it may be insidious and gradual over weeks and months.

Causes of Depression:

There are several biological factors believed to contribute to depression but their exact mechanisms are unclear. The biological factors that contribute to depression include: Physical changes to the brain – it is known that some part of a depressed brain show less activity than normal when stimulated; some parts of the brain even reduce in volume.

Neurotransmitters – impaired chemical messengers in the brain. A central system disruption in nervous epinephrine serotonin, nor and dopamine are thought to be a direct cause of depression. Hormones hormone changes may trigger depression. Early childhood trauma is suggested as a cause of Depression in children, teens and adults. Death of a loved one, Loss of a job, financial troubles, High stress situations play major role in the causation of depression. Pregnancy – up to 15% of women experience postpartum depression. Some men also show postnatal depression.

Menopause – the changes in hormones are thought to be a cause of Depression in women. Men with lower testosterone levels later in life have a greater chance of developing depression.

Pathogenesis

Stressful events promote Neurochemical changes that may be the provocation involved in of depressive disorder. In addition to Neuro-endocrine substrates (e.g. corticotrophin releasing hormone, and corticoids) and central neurotransmitters (serotonin and GABA), alterations of neuronal plasticity or even neuronal survival may play a role in depression. Indeed, depression and chronic stress or exposure typically reduce levels of growth factors, including Brain-derived Neurotrophic factor and antiapoptotic factors (e.g. bcl-2), as well as impair processes of neuronal branching and

may result from elevated corticoids, they may also stem from activation of the inflammatory immune system, signaling particularly the immune cytokines. In fact, several Pro inflammatory cytokines, such as interleukin-1, tumor necrosis factor-a and interferon-y, influence neuronal are functioning through processes involving apoptosis, Exciotoxicity, oxidative stress and metabolic derangement. Support for the involvement of cytokines in depression comes from studies showing their elevation in severe depressive illness and following stressor exposure, and that cytokine immunotherapy (e.g. interferon-a) elicited depressive symptoms that were amenable to antidepressant treatment. It is suggested that stressors and cytokines share a common ability to impair neuronal plasticity and at the same neurotransmission, time altering ultimately Contributing to depression. depressive Thus, illness may be considered disorder of а Neuroplasticity as well as one of Neurochemical imbalances, and

Neurogenesis. Although such effects

cytokines may act as mediators of both aspects of this illness.

The classical triad of depression is;

- 1. Psychomotor retardation
- 2. Depressed mood
- 3. Slowed-down thinking

Common Signs and Symptoms of Depressive Episode;

- Dysmorphic mood: The mood is often described by the patient as "sad blue, irritable, hopeless discouraged, down in the dump, inability to feel pleasure. Not caring anymore or depressed.
- Loss of interest or pleasure: It is probably always present to some degree but the individual may not complain of this. It is reflected from withdrawal from friends and family.
- Change in psychomotor activity: There may be – agitation in the form of inability to sit still, pacing, hang wringing, pulling or rubbing of hairs.

- Retardation: It may take the form of slowed speech or body movements, a markedly decreased amount of speech or muteness. A decreased level of energy is present.
- 5. Changes in appetite and weight: There is usually loss of appetite and weight.
 Occasionally there may be increased appetite and weight.
- 6. **Sleep:** It is also commonly disturbed, more frequently with insomnia but sometimes with hypersomnia. The insomnia may involve difficulty in falling sleep, waking up during sleep and then returning to sleep with difficulty or early morning awakening.
- 7. Sexual activity: There is often lack of interest, characterised by decreased in frequency and enjoyment of sex. Men become impotent while women report an inability to feel aroused or exited.
- **8. Sense of worthlessness:** There may be feeling of

inadequacy to completely unrealistic negative evaluation of one's work. Sense of worthlessness, helplessness or excessive guilt.

- 9. Cognitive impairment: Difficulty concentration, in slowed thinking and common. indecisiveness are Patient may complain of memory difficulty and appear easy distracted.
- 10. **Thought of death and suicide:** There may be fear of dying, the belief that the individual or other would be better off dead, wishes to die or suicide plans or attempts.

Comparison between kaphaja unmada and depressive disorders

On the basis of symptomatology

Symptoms described by various Acharya correlates with the symptoms of depression

Sthanamekadeshe (Staying at oneplace)
 (C),

Alpachankramane (Lack of Activity) give the meaning that a person staying in one place reduces his motor activity or movement-less wondering and fewer movements. These meanings are very similar to the of symptoms diminished activities, change, or reduced psychomotor activities that are mentioned as one of the symptoms of depression.

Vakyamandata (C)(Lack of Speech)

Gives meaning that person keeping silence, less talk or slow talk. These meanings are very similar to the symptom, reduced psychomotor activities or all activities, which is mentioned as one of the symptom of depression.

Anannabhilasha (Loss of Apetite)(C)

Means that declination towards food, less appetite or taking food in less quantity which are very similar to the symptom diminished appetite which is mentioned as one of the symptom of depression.

 Rahaskamata (Found of Loneliness) (C) means person is fond of solitudeness, lonliness.

This is very similar to the symptom prefer solitude ness or social withdrawal or loss of interest in daily deeds.

- Shaucadvesha (C) (aversion of cleanliness) which is found very commonly in the patient suffering from depression.
- Svapnanityata (C), Nidraparo (Su) (person sleeps most of the time) or prefers to sleep for long time than usual. This is very similar to the characteristic changing sleep pattern of the depressed person.
- Ratraubh<u>r</u>sham (Su) (symptoms are aggravated during night) which is similar to the symptom diurnal variation, found in depression.
- Alpamati (Su)(person with reduced intellectual capacity) or retarded thinking process that is

one of the symptoms of depression.

 Sadana (fatigue) (Su) – while commenting on this term, Dalha<u>n</u>a gives meaning as Anganamaanutsaha i.e., lassitude or feeling of tiredness without or with less work, activities.

Comparison b	between	KaphajaUnmada	and Depression
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KaphajaUnmada	Depression		
Mandavak, ches <u>t</u> a	Psychomotor retardation, mutism, slow		
	or delayed talks.		
Sthanamekadese	Inactive, dull, prefers solitude		
Rahakamata	Social withdrawal, loneliness.		
Anannabhilasha	Loss of appetite or anorexia		
Arocaka	Tastelessness or loss of interest in any		
I S S	activity.		
S <mark>vapnanityata</mark>	Drowsy, dull, altered sleep pattern		
	(hypersomnia).		
Sadanam	Fatigue, lassitude.		
Alpamati	Retardation of thinking, less		
S.	concentration.		
Shaucadvesha	Not dressing properly, hating		
	cleanliness, ignoring personal hygiene		
Ratraubh <u>r</u> sham	Diurnal variation.		

In India, prevalence of all psychiatric disorder is 65.4 per 1000 population out of which total

51% i.e. 31.2 per 1000 population is affected by depressive illness .

Many research articles have been published on the topic Kaphaja UnmadacomparingwithDepressionlike,inanarticleKaphajaUnmadahasbeencorrelatedwithMyxedemaPsychosis.

Another article was published in which a clinical trial was done with

Siddharthaka Agada Arka Pratimarsha Nasya in Kaphaja Unmada w.s.r to Depression Disorder.

A Clinical Trial was done to know to effect of Panchakarma Therapy and Unmada Gajankusha Rasa in Majar Depressive Disorder Vis-à-vis Kaphaja Unmada.

An article was published on the Management of Kaphaja Unmada wsr to Depressive Disorder.

Another Case study was done on Ayurvedic Management of Bipolar Affective Disorder with severe symptoms of Depression wsr to Kaphaja Unmada.

Another article was published on the Ayurvedic Management of Kaphaja Unmada wsr to Depression.

DISCUSSION

Kaphaja Unmada and depressive disorders are two different entities .comparison between modern Psychiatric disorder to Ayurvedic mental disorder has lot of limitations, because of their different Theories (Biochemical in Modern and Dosha theory in Ayurveda) so here a corelation

Is tried on the bases of Nidana panchaka and Etiopathogenesis of Unmada. Vakyamandata, Tushnibhava , alpakathana and alpavakhyata gives meaning that persons keeps silence, slow talk or less talk. These meanings are very similar to the symptom, reduced psychomotor activities or all activities which is mentioned as one of the symptom of depression. Dietary habits, life style modalities, emotional quotient; environmental stress plays a major role in the causation of Unmada. Due to the Kaphavardaka and Malinahara Sevana and Alpacheshta there will be Mandagni which leads to Rasavahasrododrishti. The Moola of Rasavahasrotas is Hridaya. Manas and Buddhi is situating in Hridaya due to the Kaphavarana and Tamoavarana there will be decrease in Buddhi. The normal physical mental and dispositions (Kapha Prakruthi and Tamasa Prakruthi), food habits of the person etc. will also act as the modifier of the basic Pathology (Neuro chemical

factors) in the brain produces depression.

CONCLUSION

Kaphavardhaka Ahara leads to Mandagni intern and it vitiates Rasavaha Srotas there by it decreases (intellect), Buddhi Sanjnya (consciousness) etc factors in Alpasatvavyakti (less intellectual person) and leads to Depression, hence by above said factors a critical made to understand review is Depression in Ayurveda.

REFERENCES

1. Sharma R.K, Dash Bhagwan Charaka Samhita Nidana Stana (7/7) Chaukambha Sanskrit Series Office Varanasi Reprint 2007; Page. 92.

2. http://who/int/entity/mental/ health /management/Depression Page. 6.

3. Agnivesha: Unmada Nidanam, Charaka Samhita, Nidana Sthana revised by CharakaDridabala with AyurvedDipika of commentary Chakrapanidatta, edited by VaidyaYadavjiTrikamjiAcharya.

CharakaSamhita#Reprint.VaranasiCho ukhambhaOrientalia, 2011, Sloka No.05,Ch.Ni.7/5

4. Agnivesha: UnmadaNidanam, Samhita, Nidana Sthana Charaka revised by CharakaDridabala with **AyurvedDipika** commentary of Chakrapanidatta, edited by VaidyaYadavjiTrikamjiAcharya.Charaka Samhita#Reprint.VaranasiChoukhamb haOrientalia, 2011, Sloka No.03, (Cakra -C.Ni.7/3).

5. Sharma R.K, Dash Bhagwan Charaka Samhita Nidana Stana (7/3) Chaukambha Sanskrit Series Office Varanasi Reprint 2007 ; Page. 88.

6. Sharma R.K, Dash Bhagwan Charaka Samhita chikitsa Stana (9/6) Chaukambha Sanskrit Series Office Varanasi Reprint 2015 ; Page. 410.

7. Sharma R.K, Dash Bhagwan Charaka Samhita Nidana Stana (7/6) Chaukambha Sanskrit Series Office Varanasi Reprint 2007 ; Page. 90.

8. Agnivesha: UnmadaChikitsa, Charaka Samhita, Chikitsa Sthana revised by CharakaDridabala with AyurvedDipika commentary of Chakrapanidatta, edited byVaidyaYadavjiTrikamjiAcharya. CharakaSamhita#Reprint.VaranasiCho ukhambhaOrientalia, 2011, Sloka No.13, Ch. Chi.9/ 13.

9. Agnivesha: UnmadaNidanam, Charaka Samhita, Nidana Sthana revised by CharakaDridabala with AyurvedDipika commentary of Chakrapanidatta, edited by VaidyaYadavjiTrikamjiAcharya.

10.CharakaSamhita#Reprint.VaranasiC houkhambhaOrientalia, 2011, Sloka No.06Ch.Ni.7/6

11. Sushruta: SushrutaSamhita with NibandaSangrahaCommentry of Sri Dalhanacharya, edited by Vaidya Jadavji Trikamji Acharya.ChaukhambhaOrientaliaVaran asi, Seventh edition 2002 Su.Ut.62/10 12. Kaplan and Sadock: Synopsis of Psychiatry, Behavioral Sciences / Clinical Psychiatry, 10th edition, page 575.

13.https://www.healthyplace.com/dep ression

14.https://europepmc.org/abstract/me d/16154288 15. Kaplan and Sadock: Synopsis of Psychiatry, Behavioral Sciences / Clinical Psychiatry, 10th edition, page 575.

16. Indian Journal of CommunityMedicine. 2001 Oct-Dec; 26(4): 198-200

17. GuptaK, MamidiP. Kaphajaunmada:Myxedemapsychosis?.IntJYoga-PhilosopPsycholParapsychol2015;3:31-9ParapsycholParapsychol

18. Anirudh Sehra, Suhas Kumar Shetty, & Savitha HP. (2022). Effect of Siddharthaka Agada Arka Pratimarsha Nasya in Kaphaja Unmada (Depressive Disorders). *Journal of Ayurveda and Integrated Medical Sciences*, 7(10), 104 - 108.

19. Dubey S, Tripathi JS, Gupta S, Reddy KR. A Comparative clinical trial on the role of Panchakarma therapy and Unmada Gajankusha Rasa in the cases of major depressive disorder visà-vis kaphaja Unmada. Ayu. 2010 Apr;31(2):205-9. doi: 10.4103/0974-8520.72396. PMID: 22131711; PMCID: PMC3215365.

20.https://wjpr.s3.ap-south-1.amazonaws.com/article_issue/1617181424.pdf

21. KC, S., R, V., & MP, P. D. (2022, March 13). Ayurvedic Management of Bipolar Affective Disorder –Current Episode of Severe Depression (Kaphaja Unmada) with Psychotic Symptoms:ACaseStudy. International Journal of AYUSH22.

https://wjpr.net/abstract_show/16497

Corresponding author: Dr .Sunilkumar M Chabanur PhD Scholar,Dept of Kayachikitsa, Dr.D.Y.Patil College of Ayurveda and Research,Pimri,Pune. <u>drsunilkumar09@gmail.com</u>

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