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Efficacy of Trataka Kriya in Improving Quality of Sleep in population aged 30-50 years: An open clinical trial

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Abstract

Background: In present era, Sleeplessness and disturbed sleep is a common disorder associated with morbidity and poor quality of life. In Ayurveda, Sleep is included under three supportive pillars of life (*trayopasthambha*). More than 50-70 million people in the United States have a sleep disorder [i]. In India prevalence rates are 6.5% among women and 4.3% among men. Trataka is one of the Shat Karma (yogic purificatory therapy) but is also observed to be having effects similar to meditative practices. It relieves mental stress so can improve sleep quality.

Aim: To study the effect of Trataka Kriya in improving Quality of sleep-in population aged 30- 50 years.

Objective: To evaluate the change in subjective and objective parameters on Pittsburgh Sleep Quality Index (PSQI) & WHO-QOL Bref Questionnaire.

Materials and Methodology: **Part 1: Survey Study**: A survey was conducted in 100 subjects to understand the distribution of sleep disorder in the population. **Part 2: Interventional Study:** From the participants of the survey 35 subjects were selected who reported sleep disturbance (decreased sleep). After Day 0 Assessment of the PSQI & WHO-QOL BREF Scales, Training session on Trataka Kriya was given to the subjects and were advised to continue the practice for 15 days. Re-assessment of the objective Scales was done on Day 15.

Results: PSQI SCORE: Based on the observations there was a significant improvement (p= <0.001) in PSQI Global score. WHO-QOL BREF: There was a significant improvement (p= <0.001, p = 0.016) respectively in the Physical & Psychological Health Domains in WHO=QOL BREF questionnaire. However, no significant changes observed in overall quality of life (p=1.000), overall quality of general health (p=I.000), Domain Social Relationships (p=I.000), Environmental Health (p=I.000).

Conclusion: It can be concluded that Trataka Kriya is effective in improving the quality of sleep in population aged 30-50 years.

Keywords: Sleep disorder; Trataka Kriya; PQSI; Quality of life

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1. Introduction

Sleep affect growth and stress hormones, our immune system, appetite, breathing, blood pressure and cardiovascular health. So proper sleep is very necessary for normal function of the body and mind.

त्रय उपस्तम्भ इति- आहारः , स्वप्नो, ब्रह्मचययतिति;[ii] (cha.su.11/13)

Charaka samhita mentioned - Three pillars of life for healthy maintenance of body viz. *Ahara* (food),

***SWAPANA*(**sleep**),** Brahmacharya (disciplined sexual practices). *Swapna (or Nidra)* is given most importance.

निद्रायत्तं सुखं दुःखं पुष्टिः कार्श्यं बलाबलम्|
वृषता क्लीबता ज्ञानमज्ञानं जीवितं न च॥ ३६ ॥[iii]

(cha.su.21)

Happiness, misery, nourishment, emaciation, strength, weakness, virility, sterility, knowledge, ignorance, life and death all these occur depending on the proper or improper sleep.

1.1. Normal physiology of sleep

The basic form of normal sleep organization is called sleep architecture. The sleep cycle is composed of two phases

- Non Rapid Eye Movement (NREM) Sleep
- Rapid Eye Movement (REM) Sleep

Most sleep during each night is of the NREM variety, this is the deep restful sleep that the person experiences during the first hours of sleep. Brain waves are very strong and low in frequency so it is also known as Slow-wave sleep.

REM sleep occurs in episodes.

Each episodes lasting 5-30 min, normally occurs about every 90 minutes[iv] .

This type of sleep is not so restful, and is usually associated with vivid dreaming and the eyes undergo rapid movements despite the fact the person is still asleep.

When the person is extremely sleepy, each bout of REM sleep is short & may be absent.

1.2. Characteristics of NREM sleep

This sleep is exceedingly restful and is associated with decrease in both peripheral vascular tone and many other vegetative functions of the body. There are 10-30% decrease in Blood Pressure, Respiratory Rate and Basal Metabolic Rate.

Composed of 4 stages

- Stage 1
- Stage 2
- Stage 3
- Stage 4

Deepest portion of the NREM Sleep (stage 3&4) is sometimes associated with unusual arousal characteristic. The organization during arousal, during stage 3&4 may result in specific problems including enuresis and somnambulism.

Although slow- wave sleep is frequently called “dreamless sleep” dreams and even nightmares do occur during slow-wave sleep. The difference is that dreams that occurs in REM Sleep are associated with more bodily muscle activity, and the dreams of slow- wave sleep usually are not remembered. That is during slow-wave sleep consolidation of dreams in memory doesn’t occur.

1.3. Characteristic of REM sleep

Usually associated with active dreaming & active bodily muscle movements. Most distinctive feature of REM sleep is dreaming.

Heart rate and respiratory rate usually becomes irregular, which is characteristic of the dreams state. Also called paradoxical sleep because it is a paradox that a person can still be asleep despite marked activity in the brain.

In REM sleep there is desynchronized nervous activity as found in the awaken state. So known as desynchronized sleep.

REM sleep is a type of sleep in which the brain is quite active. However brain activity is not channeled in the proper direction for the person to be fully aware of surroundings, and therefore the person is truly asleep[v].

1.4. Factors affecting sleep

" तमोभूयिष्ठानामहःसु निशासु च भवति, रजोभूयिष्ठानामनिमित्तं,

सत्त्वभूयिष्ठानामर्धरात्रे।[vi]

(सु.शा.4/33)

- *Kapha* constitution people- fond of sleep.
- Sleep of *vata* constitution people- disturbed.
- Sleep manifested naturally in persons with predominance of *tamoguna* both during day & night.
- Person with predominance of *rajoguna* – sleep occurs without any reason at any time.
- Person with predominance of *satvaguna*- sleep occurs at midnight.
- *Matra* (amount) of sleep decided with respect of *prakriti, sara, desha* etc.

1.5. Anidra (Loss of sleep)

❖ **CAUSES**

कायस्य शिरसश्चैव विरेकश्छर्दनं भयम्|
चिन्ता क्रोधस्तथा धूमो व्यायामो रक्तमोक्षणम्||५५||
उपवासोऽसुखा शय्या सत्त्वौदार्यं तमोजयः|
निद्राप्रसङ्गमहितं वारयन्ति समुत्थितम्||५६||
एत एव च विज्ञेया निद्रानाशस्य हेतवः|
कार्यं कालो विकारश्च प्रकृतिर्वायुरेव च||[vii] (च.सू. 21/55-57)

- Elimination of *dosas* from the body and head through nasal instillation
- purgation
- purificatory therapies like emesis etc
- bloodletting
- worries, anger
- smoke/ fumigation
- physical exercise
- Fasting
- uncomfortable bed
- predominance of *satva*
- suppression of *tamas*
- over work
- old age & diseases
- Increase of *vata dosha*

विरेकः कायशिरसोर्वमनं रक्तमोक्षणम् |
धूमः क्षुत्तृट् तथा हर्षः शोकमैथुनभीक्रुधः ||३६६||
चित्तोत्कठाऽसुखा शय्या सत्त्वौदार्यं तमोजयः |

रूक्षान्नं वाऽहितां निद्रां वारयन्त्यनुषङ्गिणीम् ||३६७||
एत एव च निद्रायाः ज्ञेया नाशस्य हेतवः |
कालः शूलं क्षयो व्याधि र्वृद्धिरनिलपित्तयोः||[viii] **(Kaiyadeva Nighantu-7/366-368)**

According to Kaiyadeva Nighantu , following factors cause loss of sleep:

- Elimination of *dosas* from the body and head through nasal instillation
- Bloodletting
- Smoke/ fumigation
- Hunger
- Thirst
- Joy
- Sorrow
- Sexual intercourse
- Fear and anger
- The bed state of mind
- Inappropriate bed
- Predominance of *satva*
- Suppression of *tamas*
- Dry food or unhealthy sleep prevents the accompanying.

Among the reasons stated above emotional factors leading to disturbed sleep is common in present scenario.

1.6. Symptoms of *nidra vega dharanam* (Suppression of Sleep)

निद्रानाशादङ्गमर्द्दशिरोगौरवजृम्भिकाः|
जाड्यग्लानिभ्रमापक्तितन्द्रारोगाश्च वातजाः ||[ix] **(अ.सां.सू.9/56)**

- *angamardha* (body pain),
- *sirogaurava* (feeling of heaviness of the head)
- *jrmbha* (yawning)
- *jadata* (stiffness)
- *glani* (Weakness)
- *bhrama* (giddiness)
- *apakti* (indigestion)
- *tandra* (stupor)
- other diseases of *Vata* origin.

1.7. Treatment

अभ्यङ्गोत्सादनं स्नानं ग्राम्यानूपौदका रसाः|
शाल्यन्नं सदधि क्षीरं स्नेहो मद्यं मनःसुखम्||५२||
मनसोऽनुगुणा गन्धाः शब्दाः संवाहनानि च|
चक्षुषोस्तर्पणं लेपः शिरसो वदनस्य च||५३||
स्वास्तीर्णं शयनं वेश्म सुखं कालस्तथोचितः|
आनयन्त्यचिरान्निद्रां प्रनष्टा या निमित्ततः|[x] **(च.सू. 21/52-54)**

Sleeplessness can be treated by

- Massage
- Unction
- Bath
- Soup of domestic, marshy and aquatic animals
- *Sali* rice with curds, unctuous substances, milk, alcohol
- Psychic pleasure

- Smell of scents and hearing of sounds of preference
- Comfortable touch
- Application of anointments to body
- *Tarpana* therapy for eyes
- Comfortable bed, home and sleeping at proper time

शीलयेन्मन्दनिद्रस्तु क्षीरमद्यरसान् दधि|
अभ्यङ्गोद्वर्तनस्नानमूर्धकर्णाक्षितर्पणम्||६६||
कान्ताबाहुलताश्लेषो निर्वृतिः कृतकृत्यता|
मनोऽनुकूला विषयाः कामं निद्रासुखप्रदाः||६७||
ब्रह्मचर्यरतेर्ग्राम्यसुखनिःस्पृहचेतसः|
निद्रा सन्तोषतृप्तस्य स्वं काले नातिवर्तते||[xi] **(अ.हृ.सू.7/66-68)**

According to Ashtanga Hrudaya, those suffering from loss of sleep should indulge in the use of milk, wine, meat soup and curds, oil massage and mild squeezing of the body, bath, anointing head, ears& eyes with nourishing oils, comforting embrace by the arms of the wife, harboring the feeling of satisfaction of having done good deeds and resorting to things which are comforting to the mind as much as desired; these bring about the pleasure of good sleep. For those who follow the regimen of celibacy, and who are contented with happiness, sleep will not be very late than its regular time.

शीलयेन् मन्दनिद्रस्तु क्षीरमिक्षुरसं रसम् |
आनूपौदकमांसानां भक्ष्यान् गौडिकपैष्टिकान् ||३६९||
शालिधान्यानि मद्यानि किलाटान् माहिषं दधि |
अभ्यङ्गोद्वर्तनस्नानमूर्धश्रवणतर्पणम् ||३७०||
चक्षुषस्तर्पणं लेपो शिरसो वदनस्य च |
प्रवाते सुरभौ देशे सुखशय्या यथोचिता ||३७१||
कान्ताबाहुलताश्लेषो निर्वृतिः कृतकृत्यता |
मनोनुकूला विषयाः कामं निद्रासुखप्रदाः ||३७२||
संवाहनं स्पर्शसुखं चित्तज्ञैरनुजीविभिः |
मुष्टिभिर्हननं पथ्यं करैर्वा मर्दनं सुखम् ||३७३||
संवाहनं मांसरक्तत्वक्प्रसादकरं परम् |
प्रीतिनिद्राकरं वृष्य कफवातश्रमापहम्||[xii]**(Kaiyadeva Nighantu-7/369-374)**

According to Kaiyadeva nighantu,

- Those suffering from loss of sleep should indulge in the use of milk,
- Sugarcane juice, soup of marshy and aquatic animals
- *Guda vikriti* (product of jaggery)
- *Sali* rice with curds, unctuous substances, milk, alcohol
- Massage
- *Udvartana* therapy
- Bath
- *Tarpan* therapy for eye
- *Lepa* (herbal anointments)
- Comfortable bed as appropriate in a breezy fragrant country
- Psychic pleasure and give pleasure to desire and sleep
- Comfortable touch
- Rubbing with the hands is pleasant
- Massage is supremely pleasing to the *mamsa* (muscle tissue), *rakta* (blood) and *tvak* (skin)
- It is pleasantly sleepy
- *Vrushya* (aphrodisiac)
- Relieves *kapha, vata* and fatigue.

As mentioned above, those modalities which can calm down the mind can induce sleep. Tratak Kriya is one such practice which is known to relax the mind.

1.8. Sleep disorders

Sleep disorders are a group of conditions that affect the ability to sleep well on a regular basis. Whether they are caused by a health problem or by too much stress, sleep disorders are becoming increasingly common in the United States.

In fact, more than one-third of adults Trusted Source in the United States report getting fewer than 7 hours of sleep in a 24-hour period. More than 70 percent Trusted Source of high school students report getting fewer than 8 hours of sleep on weeknights.

Most people occasionally experience sleeping problems due to stress, hectic schedules, and other outside influences. However, when these issues begin to occur on a regular basis and interfere with daily life, they may indicate a sleeping disorder.

Depending on the type of sleep disorder, people may have a difficult time falling asleep and may feel extremely tired throughout the day. The lack of sleep can have a negative impact on energy, mood, concentration, and overall health.

They can also affect your performance at work, cause strain in relationships, and impair your ability to perform daily activities.

2. Types of sleep disorders

The International Classification of Sleep Disorders diagnostic and coding manual 2000 lists four major categories of sleep disorders: dyssomnias; parasomnias; sleep disorders associated with mental, neurologic, or other medical disorders; and proposed sleep disorders[xiii].

2.1. Insomnia

Insomnia refers to almost nightly complaints of insufficient amounts of sleep or not feeling rested after the habitual sleep episode. As the most common sleep-wake-related disorder, it is more common in women and has a prevalence ranging from 10% to 30%[xiv].

Insomnia refers to the inability to fall asleep or to remain asleep. It can be caused by jet lag, stress and anxiety, hormones, or digestive problems. It may also be a symptom of another condition.

Insomnia can be problematic for your overall health and quality of life, potentially causing:

- Depression
- Difficulty concentrating
- Irritability
- Weight gain
- Impaired work or school performance

Unfortunately, insomnia is extremely common. Up to 50 percent of American adults experience it at some point in their lives.

The disorder is most prevalent among older adults and women. Insomnia is usually classified as one of three types:

- Chronic, when insomnia happens on a regular basis for at least 1 month
- Intermittent, when insomnia occurs periodically
- Transient, when insomnia lasts for just a few nights at a time

2.2. Sleep apnea

Sleep apnea is characterized by pauses in breathing during sleep. This is a serious medical condition that causes the body to take in less oxygen. It can also cause you to wake up during the night.

There are two types:

- Obstructive sleep apnea,
- central sleep apnea

2.3. Parasomnias

Parasomnias are a class of sleep disorders that cause abnormal movements and behaviors during sleep. They include:

- Sleepwalking
- Sleep talking
- Groaning
- Bedwetting
- Nightmares
- Teeth grinding / jaw clenching

2.4. Restless leg syndrome

Restless leg syndrome (RLS) is an overwhelming need to move the legs. This urge is sometimes accompanied by a tingling sensation in the legs. While these symptoms can occur during the day, they are most prevalent at night.

RLS is often associated with certain health conditions, including attention deficit hyperactivity disorder (ADHD) and Parkinson's disease, but the exact cause isn't always known.

2.5. Narcolepsy

Narcolepsy is characterized by "sleep attacks" that occur while awake. This means that you will suddenly feel extremely tired and fall asleep without warning.

The disorder can also cause sleep paralysis, which may make you physically unable to move right after waking up. Although narcolepsy may occur on its own, it is also associated with certain neurological disorders, such as multiple sclerosis.

2.6. Symptoms of sleep disorders

The symptoms you experience can vary depending on the type of sleep disorder you have.

These are some common symptoms of sleep disorders:

- Taking over half an hour to fall asleep every night
- Waking up several times every night and having trouble going back to sleep
- Waking up too early in the morning
- Having difficulty moving when you first wake up
- Often feeling sleepy in the day or frequently taking naps
- Falling asleep at the wrong times in the day
- Snoring loudly, gasping, snorting, making choking sounds, talking, or not breathing for short periods of time while sleeping
- Experiencing creeping, crawling, or tingling feelings in your arms or legs that get better with movement or massage, particularly while trying to fall asleep
- Frequently jerking your arms or legs while sleeping
- Having vivid, dream-like experiences while falling asleep or lightly dozing
- Experiencing sudden muscle weakness when you're angry, scared, or laughing[xv]

2.7. Causes of sleep disorders

There are many conditions, diseases, and disorders that can cause sleep disturbances. In many cases, sleep disorders develop as a result of an underlying health problem.

2.7.1 Allergies and respiratory problems

Allergies, colds, and upper respiratory infections can make it challenging to breathe at night. The inability to breathe through your nose can also cause sleeping difficulties.

2.7.2 Frequent urination

Nocturia, or frequent urination, may disrupt your sleep by causing you to wake up during the night. Hormonal imbalances and diseases of the urinary tract may contribute to the development of this condition.

Be sure to call your doctor right away if frequent urination is accompanied by bleeding or pain.

2.7.3 Chronic pain

Constant pain can make it difficult to fall asleep. It might even wake you up after you fall asleep. Some of the most common causes of chronic pain include:

- Arthritis
- chronic fatigue syndrome
- fibromyalgia
- inflammatory bowel disease
- Persistent headaches
- Continuous lower back pain

In some cases, chronic pain may even be exacerbated by sleep disorders. For instance, doctors believe the development of fibromyalgia might be linked to sleeping problems.

2.7.4 Stress and anxiety

Stress and anxiety often have a negative impact on sleep quality. It can be difficult for you to fall asleep or to stay asleep. Nightmares, sleep talking, or sleepwalking may also disrupt your sleep.

2.8. Treatment

Treatment for sleep disorders can vary depending on the type and underlying cause. However, it generally includes a combination of medical treatments and lifestyle changes.

2.8.1 Medical treatments

Medical treatment for sleep disturbances might include any of the following:

- Sleeping pills
- Melatonin supplements
- Allergy or cold medication
- Medications for any underlying health issues
- Breathing device or surgery (usually for sleep apnea)
- A dental guard (usually for teeth grinding)

2.8.2 Lifestyle changes

Lifestyle adjustments can greatly improve your quality of sleep, especially when they're done along with medical treatments. You may want to consider:

- Incorporating more vegetables and fish into your diet, and reducing sugar intake
- Reducing stress and anxiety by exercising and stretching
- Creating and sticking to a regular sleeping schedule
- Drinking less water before bedtime
- Limiting your caffeine intake, especially in the late afternoon or evening
- Decreasing tobacco and alcohol use
- Eating smaller low carbohydrate meals before bedtime
- Maintaining a healthy weight based on your doctor's recommendations

Going to bed and waking up at the same time every day can also significantly improve your sleep quality. While you might be tempted to sleep in on the weekends, this can make it more difficult to wake up and fall asleep during the work week[xvi].

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3.3. Hypothesis

- **NULL HYPOTHESIS:** Trataka Kriya is not effective in improving the quality of sleep in population aged 30-50 years
- **ALTERNATE HYPOTHESIS:** Trataka Kriya is effective in improving the quality of sleep in population aged 30-50 years

3.4. Aims

To study the effect of Trataka Kriya in improving the quality of sleep in population aged 30-50 years.

3.5. Objectives

- To evaluate the change in subjective and objective parameters on Pittsburgh Sleep Quality Index(PSQI)
- To evaluate the change in subjective and objective parameters in WHO-QOL Bref Questionnaire

4. Materials and methods

4.1. Clinical study

- Study design : Interventional, Open clinical trial
- Sample size : 35

- Age group : 30-50 years
- Settings : RK university Ayurvedic college hospital, Rajkot
- Intervention : Trataka Kriya daily once before bedtime for 15-30 min for 2 weeks
- Assessment tool: 1) Pittsburgh Sleep Quality Index (PSQI) questionnaire

4.2. WHO – QOL Bref questionnaire

- Selection criteria: ○ **Inclusion criteria**: age 30-50 years diagnosed as having improper sleep. ○ **Exclusion criteria**: age50 years subjects with chronic morbid sleep disorders related to any psychiatric ailments or on medication for sleep disorder. Patient having ptosis or any other neurological ailments affecting normal opening and closure of eyelids will be excluded.

5. Observations and results

5.1. Observations of survey study

5.1.1 Demographic data

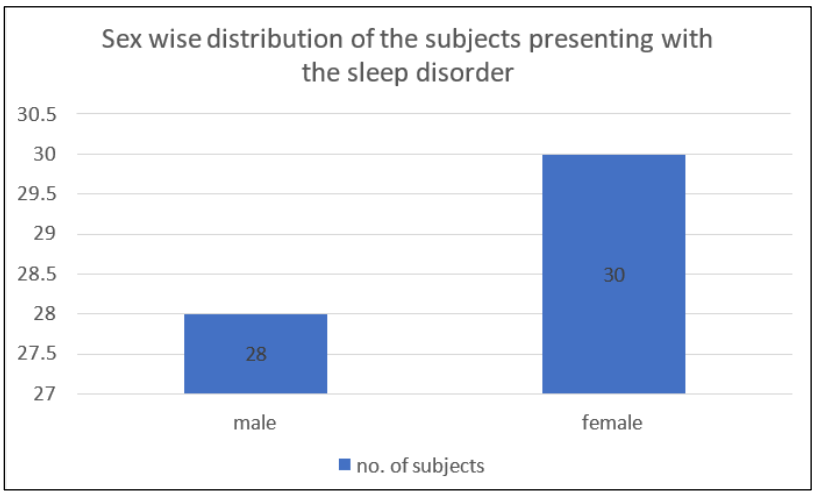

Figure 1 Sex wise distribution of the subjects presenting with the sleep disorder

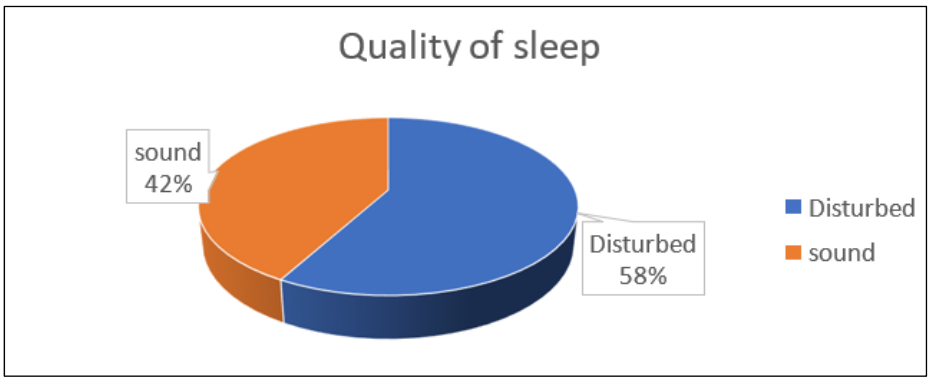

Figure 2 Distribution of study subjects based on Quality of sleep

5.1.2 Observation Quality of sleep

Among 100 patients 42% presented with sound sleep while 58% presented with disturbed sleep.

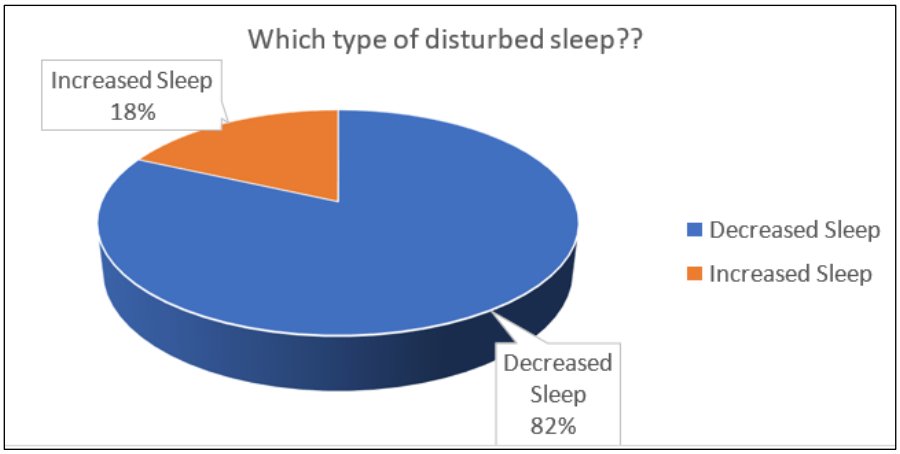

Figure 3 Distribution of study subjects based on type of sleep disturbance (increased/decreased).

5.1.3 Observation Nature of sleep disturbance

18% reported increased sleep while 82% reported decreased sleep.

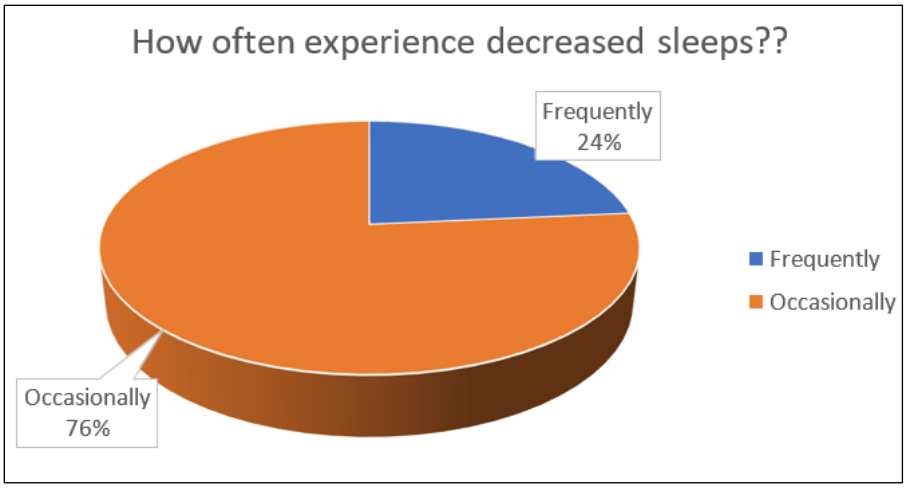

Figure 4 Distribution of study subjects based on frequency of decreased sleep

5.1.4 Observation: Frequency of decreased sleep

Among 54 subjects who reported decreased sleep, 76% had sleep issues only occasionally (i.e., 2 days/week) while 24% have the problem frequently (i.e., 4 days /week)

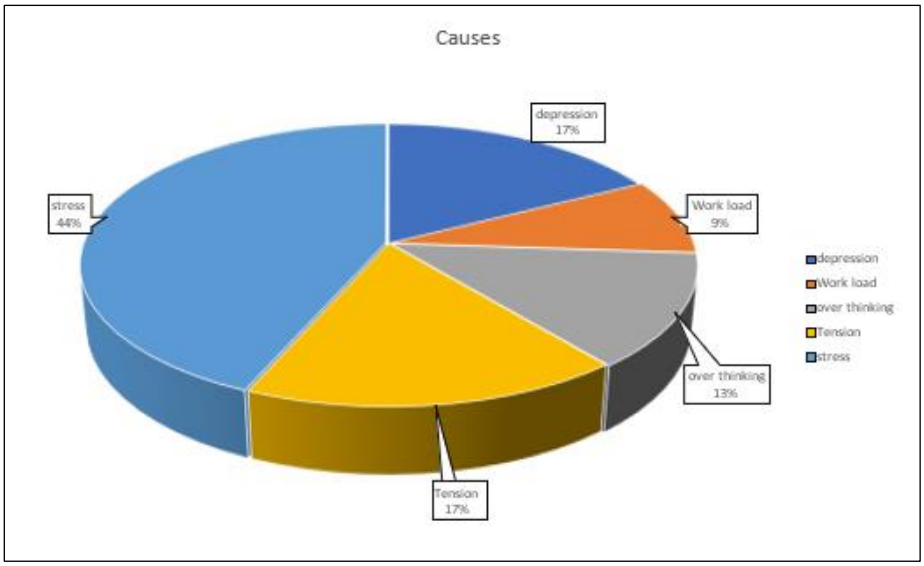

Figure 5 Distribution of study subjects based on cause of decreased sleep

5.1.5 Observation: Causes of decreased sleep

Out of 54 subjects having decreased sleep , 44% reported decreased sleep due to Stress; 17% each due to tension and depression; 13% due to over thinking and 9% due to workload.

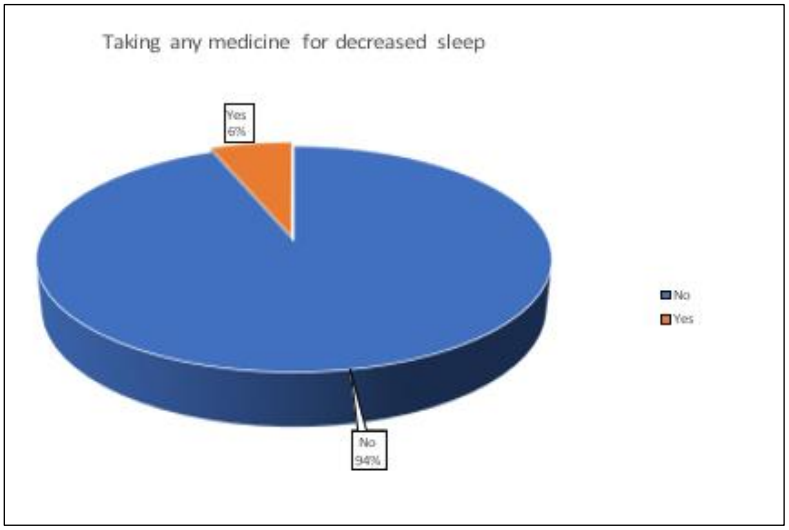

Figure 6 Distribution of study subjects based on whether/ not taking medicine for decreased sleep

5.1.6 Observation: Taking medicine for decreased sleep

Out of 54 subjects having decreased sleep, 6% reported taking medicines.

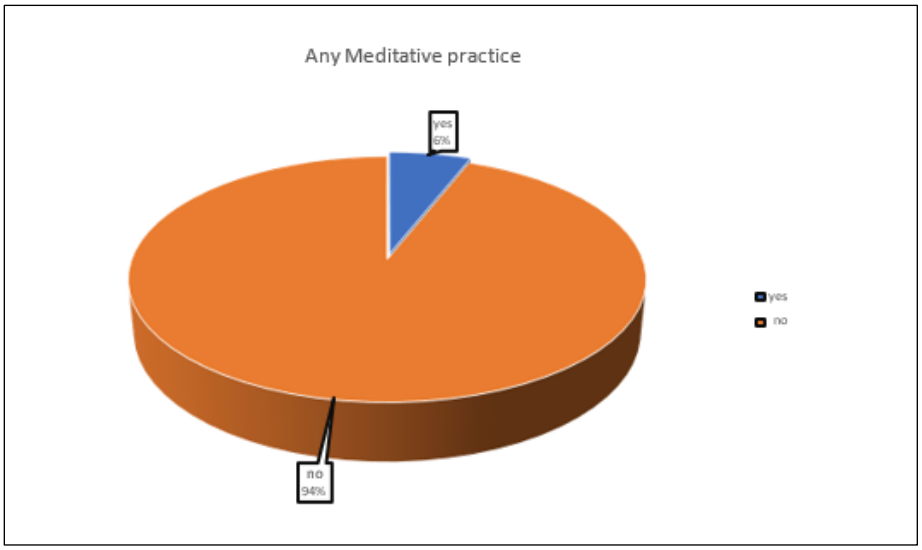

Figure 7 Distribution of study subjects based on meditative practices undertaken

5.1.7 Observation: Doing any meditative practices

Out of 54 subjects having decreased sleep, 6% reported taking medicines.

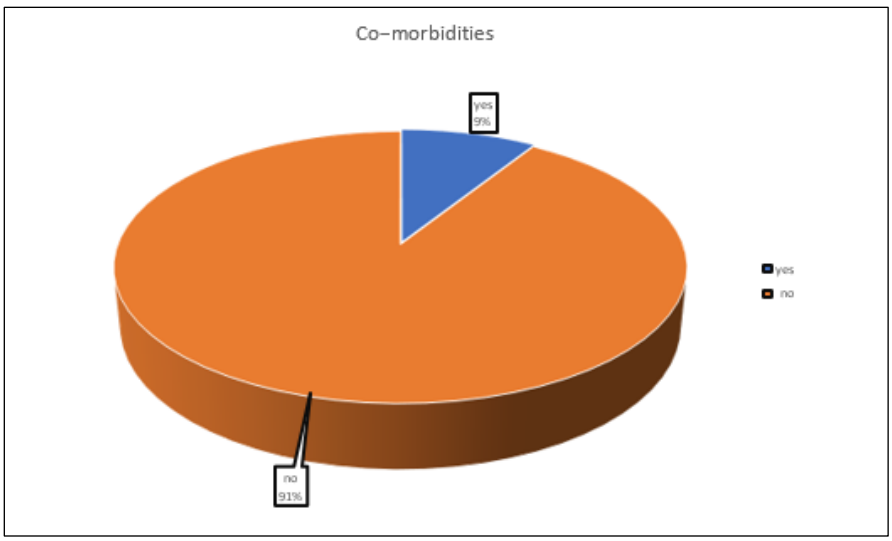

Figure 8 Distribution of study subjects based on co-morbidities

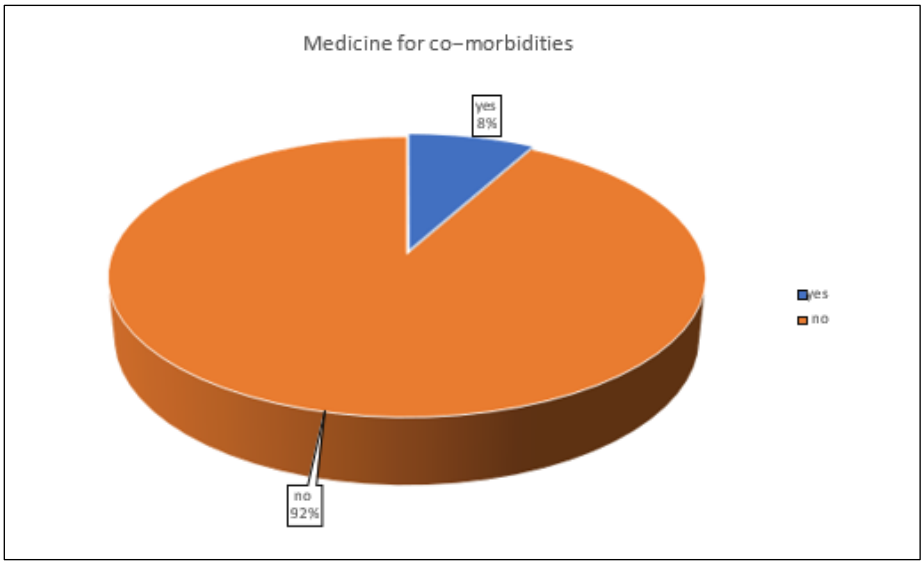

Figure 9 Distribution of study subjects based on medication for co-morbidities

5.1.8 Observation: Any co-morbidities

Out of 54 subjects having decreased sleep, 9% reported having co-morbidities like hypertension, thyroid disorders and type 2 Diabetes Mellitus. Among these, 8% were on medication for the respective co-morbidities.

Observations of changes in PSQI score and who-BREF score:

- **PSQI scale:**
- **Global score:**

Table 1 Effect of Trataka Kriya on global score in PSQI

Group	N	Missing	Median	25%	75%
BT	35	0	10.000	9.000	12.000
AT	35	0	9.000	7.250	10.000

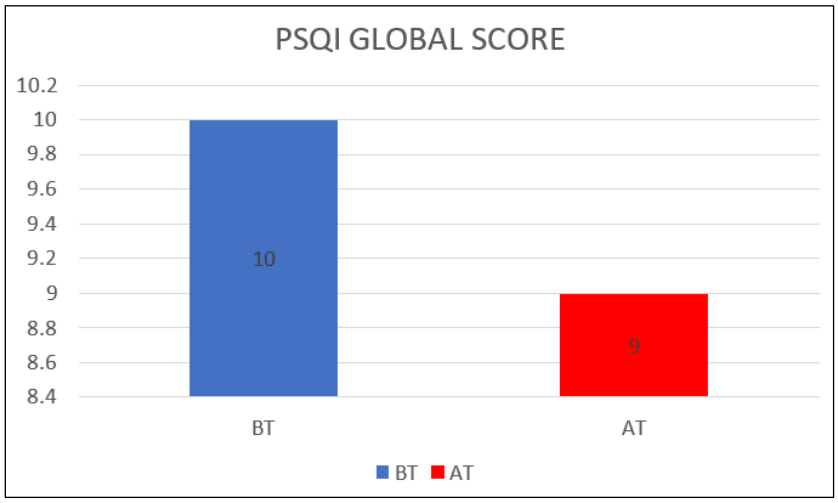

Figure 10 Effect of Trataka Kriya on global score in PSQI

Observation PSQI Global score showed significant improvement (p= <0.001)

WHO- QOL Bref questionnaire

COMPONENT B1: OVERALL QUALITY OF LIFE

Table 2 Effect of Trataka Kriya on overall quality of life score in WHO-QOL Bref questionnaire

Group	N	Missing	Median	25%	75%
BT	35	0	3.000	3.000	4.000
AT	35	0	4.000	3.000	4.000

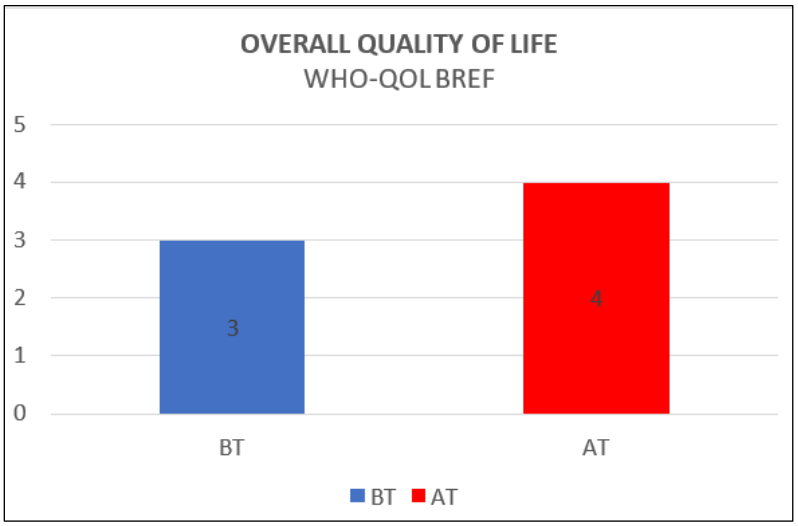

Figure 11 Effect of Trataka Kriya on overall quality of life score in WHO-QOLBREF questionnaire

Observation: No significant changes observed in overall quality of life (p=1.000)

Component b2: Overall quality of general health

Table 3 Effect of Trataka Kriya on overall quality of general health score in WHO-QOL BREF questionnaire

Group	N	Missing	Median	25%	75%
BT	35	0	3.000	3.000	4.000
AT	35	0	3.000	3.000	4.000

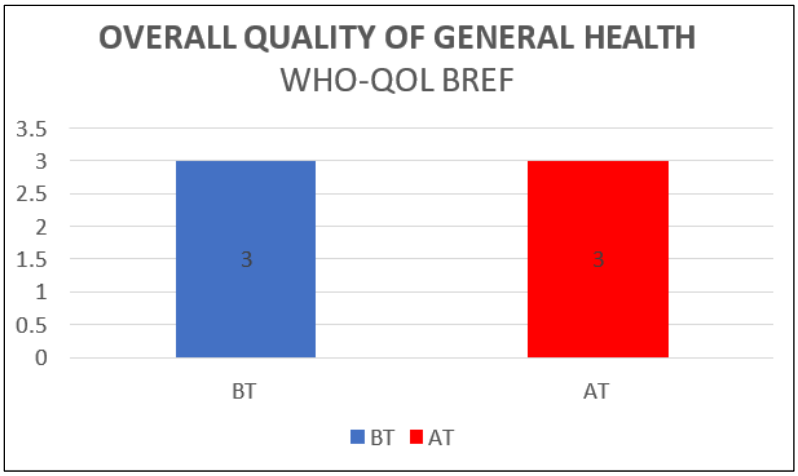

Figure 12 effect of Trataka Kriya on overall quality of general health score WHO-QOL BREF questionnaire

Observation: No significant changes observed in overall quality of general health (p=I.000)

DOMAIN 1: PHYSICAL HEALTH

Table 4 effect of trataka kriya on physical health domain score in who-qol bref questionnaire

Group	N	Missing	Median	25%	75%
BT	35	0	20.000	20.000	23.000
AT	35	0	21.000	20.000	23.750

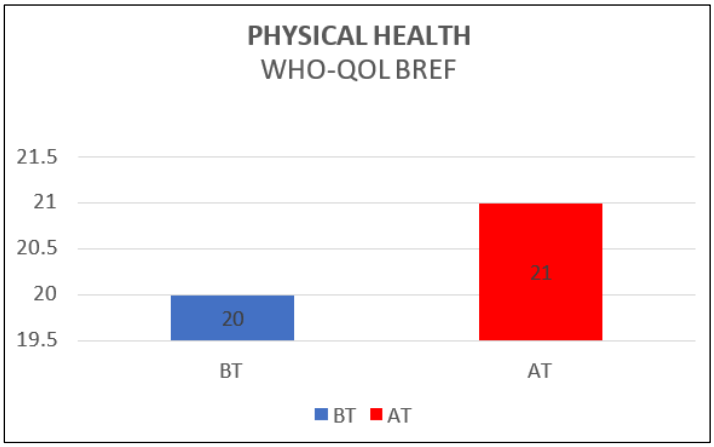

Figure 13 Effect of Trataka Kriya on physical health domain score in WHO-QOL BREF QUESTIONNAIRE

Observation: Significant improvement observed in Domain-Physical Health (p = <0.001).

Domain 2: PSYCHOLOGICAL HEALTH

Table 5 Effect of Trataka Kriya on psychological health domain score in WHO-QOL BREF questionnaire

Group	N	Missing	Median	25%	75%
BT	35	0	18.000	16.250	20.000
AT	35	0	18.000	17.000	20.000

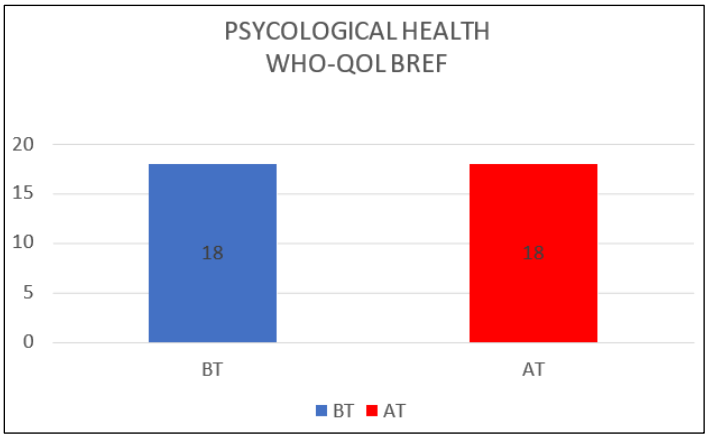

Figure 14 effect of Trataka Kriya on psychological health domain score in WHO-QOL BREF questionnaire

Observation: Significant improvement observed in Domain- Psychological Health (p = 0.016).

Domain 3: SOCIAL RELATIONSHIPS

Table 6 Effect of Trataka Kriya on social relationships domain score in WHO-QOL BREF questionnaire

Group	N	Missing	Median	25%	75%
BT	35	0	10.000	6.000	12.000
AT	35	0	10.000	6.000	12.000

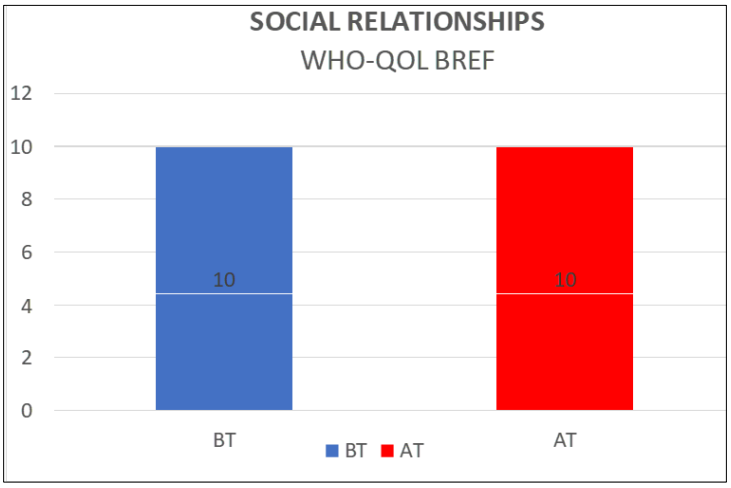

Figure 15 E ffect of Trataka Kriya on social relationships domain score in WHO-QOL BREF questionnaire

Observation : No significant changes observed in Domain-Social Relationships (p=I.000)

Domain 4: ENVIRONMENTAL HEALTH

Table 7 Effect of Trataka Kriya on environmental health domain score in WHO-QOL BREF questionnaire

Group	N	Missing	Median	25%	75%
BT	35	0	25.000	23.000	26.000
AT	35	0	25.000	23.000	26.000

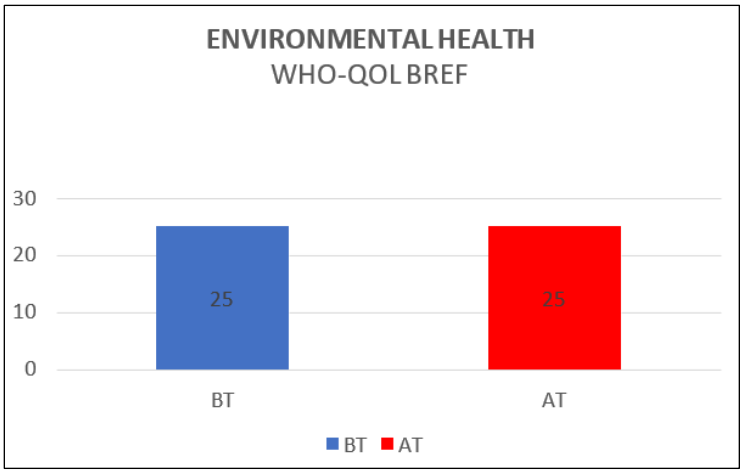

Figure 16 effect of Trataka Kriya on environmental health domain score in WHO-QOL BREF questionnaire

Observation: No significant changes observed in Domain- Environmental Health (p=I.000)

6. Discussions

In the survey which was conducted as a part of this study to assess the distribution of sleep disorder in the population, it was observe that 28 male and 30 female subjects presented with sleep disorder. This might be attributed to the fact that compared to the male, females are more involved into day to day family matters which might be cause of worry. Further, compared to males, females have a lower *Satva Bala* which might also be a reason for higher proportion of females having sleep disorders.

As per the classical references causes of disturbed sleep are many including the factors like worries, fear, sorrow, anger etc. In present study also it was observed that cause of sleep disturbance as reported by majority of subjects was stress, tension and depression. Thus the observation of the study aligns with the classical *Nidranasha nidan*.

In the present study, quality of sleep was assessed using the Pittsburg Sleep Quality Index (PSQI). This scale considers subjective sleep quality, sleep latency, sleep duration, sleep efficiency, and sleep disturbance, use of sleep medications and day time dysfunction. Assessment was made by considering overall score of the above mentioned components which is known as Global PSQI score. As observed in the study significant improvement was achieved in this score by this practice of Trataka Kriya. Further an assessment of quality of life was included because sleep quality has a strong influence over the quality of the life of an individual. Quality of life was assessed WHO-QOL BREF scale having components including overall quality of life, over all general health, physical health, psychological health, social relationship and environmental health. There was a significant improvement in physical and psychological heath by the practice of Trataka Kriya. This supports the fact that good quality sleep can bring about improvement in the physical and psychological health of the person. This can be attributed to the homeostasis which is maintained the by the good quality sleep which in turn ensures appropriate functioning of all the physiological system of the body. A good quality sleep is also known to influence the emotional expression due to neuro-endocrine responses in the body. This might be the cause for improvement in psychological health when the quality of sleep improved.

6.1. Probable mode of action of Tratak Kriya in disturbed sleep

Trataka Kriya is one among the six purificatory therapies mentioned in Yoga. However, beyond purification Trataka has been observed to provide a psychological state of meditation. Previous studies have reported a decrease in sympathetic and increase in the parasympathetic component of Autonomic Nervous System with the practice of Trataka Kriya. In previous studies, reduction has been observed in neuroticism, Galvanic Skin Resistance (GSR) and attention fluctuation alongwith increase in BSR which implies improvement in psycho-physiological health[xx]. EEG findings from previous studies have established the mind-relaxing action of Trataka Kriya[xxi]. Further, in a previous study done to assess the role of Trataka Kriya in hypertension decrease in Heart rate and Respiratory rate was observed which also points towards decrease in sympathetic activity[xxii]. This is in support of the significant improvement in physical and psychological domains as observed in the present study.

Further, classically Trataka practice is advised to be done in dim light. In present study, practice was conducted in candle light in a dark room just before retiring to bed. Such dim light exposure increases the melatonin secretion. Such a melatonin surge has an influence on initiating the sleep[xxiii].

According to ayurvedic classic in the context of *Nidranasha chikitsa* it has been advised to adopt the measures which are comforting to the mind and bring about physic pleasure to the individuals. As evident from the above-mentioned research works Trataka Kriya calms down the mind and inspite of being a purificatory therapy it has effects similar to meditation having creates a pleasant impact on the mind of the practitioners.

However, no significant improvement was observed in overall quality of life, overall quality of general health, Domain Social Relationships and Environmental Health. This might be due to reason that duration of intervention in the present study was short (15 days) which might not be sufficient to bring about changes in the above said domains. It is suggested that similar study may be conducted for longer durations to assess the change these domains.

6.2. Summary of results

PSQI SCORE: Based on the observations there is a significant improvement (p= <0.001) PSQI Global score.

WHO-QOL BREF: Based on the observations there is a significant improvement (p= <0.001, p = 0.016) respectively in the Physical & Psychological Health Domains in WHO=QOL BREF questionnaire. However, no significant changes observed in overall quality of life (p=1.000), overall quality of general health (p=I.000), Domain Social Relationships (p=I.000), Environmental Health (p=I.000) due to may be short time period.

Hence, Null Hypothesis is rejected and alternate hypothesis is accepted.

7. Conclusion

It can be concluded that Trataka Kriya is effective in improving the quality of sleep in population aged 30-50 years

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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CLINICAL ANATOMY OF MEDOVAHA SROTAS

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Abstract :

The human body is a conglomeration of the transport of dhatus & excretes waste product from the body. These channels are those carrying one of them is Medovaha Srotas. The distribution of adipose cells in human body is prevalent in subcutaneous tissue, omentum, kidney, skeletal muscles, liver and this reconfirms the (Vrikka, Vapavahan, Kati) described by Prameha Vyadhi etc.

Obesity can be defined as an excess of body fat. The fat in the adipose tissue is derived from two main sources that from food fat, carbohydrate & protein. Adipose cell convert the carbohydrate into fat cells. Fat is stored as neutral fat in the adipose cell of the fat depots. After fat metabolism, more than 95% of ingested fat is absorbed. Only 5% lifestyle, neuro-endocrinological abnormality and genetic predisposition are the leading causes of obesity. The mutation of MCR-4 gene, Leptin gene, and Leptin receptor are the monogenic causes of obesity discovered so far.

Keyword: *Medovaha Srotas, Obesity, Leptin receptor, Adipose tissue*

INTRODUCTION-

Srotas is defined as the channels/pores which continuously secretes, transport nutrient Dhatus & excrete waste product from body.

1. The human body is a conglomeration of Srotas "Api Cha Eke Srotosameba Samudayam Purushamichanti Srotas" are also responsible for transportation of Doshas.
2. The equilibrium of Doshas keeps our body in the state of normalcy but the exaggerated vitiates the Srotas and leads to development of diseases.
3. The knowledge of Srotas is very essential as it is responsible for carrying & transformation of tissue elements there by maintaining the health. These channels carry Prana, Uadaka, Anna, Meda. One of them is Medovaha Srotas.

CLINICO ANATOMY OF MEDOVAHA SROTAS IN REFERENCE TO OBESITY

The human body is a conglomeration of the Srotas. It is defined as the channel

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A CONCEPTUAL STUDY OF 'JANU' AND 'SAKTHIGATA ANI' MARMA

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ABSTRACT :

The concept of Marma is very well described by Acharya Sushrut. Sushrut Samhita mentions and discusses the Marma as an anatomical aspect of several bodily parts 1. The description of Marma is an important part of Ayurvedic Rachana Sharira (anatomy). Mamsa, Sira, Snayu, Asthi, and Sandhi all unite at Marma. In the human body, there are (11)Mamsa Marma, (41) Sira Marma, (27) Snayu . (20) Sandhi Marma numbers, and (8) Asthi Marma 2. so total marma points are 107. There are several anatomical structures connected to Janu Marma, each of which can be injured by disease or external factors, resulting in temporary or permanent impairment or loss of function. The biggest synovial joint in the body is the knee joint (Janu Sandhi). Three (3) bones, the Femur, Tibia, and Patella, create this joint, which is divided into three (3) joints: medial and lateral tibio-femoral, and patello-femoral. Marma, in place of Aani Marma described in Ayurvedic literature, the following compositions were obtained on removal of Superficial fascial and deep fascia. Femoral biceps, Semi tendinosis, Semimembranosis, Gracilis, Quadriceps femoris. Present work is been taken up with an idea of updating early concept of a better understanding of Janu Marma and Saktigata Ani Marma .

Key words: *Marma,Janu Marma,Ani Marma,synovial joint,Janu Sandhi.*

INTRODUCTION-

Marma are the body's vital points. *Prana*(life) is denoted by the split term *"Mah"* or *"Ma"* of the word *Marma*. It is said that *Marma* science expertise was also utilised in battle. The *Vedas* contain instructions for protecting *Marma* (vital parts) on the battlefield as well as tactics for assaulting *Marma* locations to incapacitate the opponent.

There are 107 *Marma* in all, with eleven (11) in each *Shakha* (extremity), three in *Kostha (udar),* nine in *Urah,* fourteen in *Prishta*, and thirty-seven (37) in *Jatru* (head and neck). *Marma* is the part of the

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AN ANALYTICAL STUDY ON PRAKRITI SPECIFIC YOGIC PRACTICES FOR HEALTH PROMOTION

- Anop Singh[1], Manish Choudhary[2], Niranjan Kumar Sharma[3]
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ABSTRACT :

Yoga is one among the most effective way to achieve physical, mental and spiritual excellence. It helps in health promotion, and disease prevention. Ayurveda also emphasizes on a healthy lifestyle for physical and mental health promotion on basis of 'Prakriti' (The body constitution based on predominance of 'Doshas').

Objective: *To formulate a comprehensive Prakrti specific personalized Yoga schedule for Vata Pradhana, Pitta Pradhana and Kapha Pradhana Prakrti individuals.*

Methodology: *On the basis of classical books of Yoga like Hathayoga Pradipika, Gheranda Samhita separate schedules for Vatapradhana, Pittapradhana and Kaphapradhana Prakriti were prepared. Each schedule comprises of all components of integrated Yogic practices comprising of Asanas, Deep relaxation, Pranayamas and meditation. The mode of action of different Yogic practices are elaborated on the basis of classical Yogic texts and already conducted researches. The practices help in purification of Nadis, maintaining the balance of Doshas, and enhancement of strength and reducing stress in different Prakrti individuals.*

Conclusion: *The Prakriti Specific Yogic practices like Asana, Pranayama and Meditation, along with periodical Shatkarma helps in health promotion and disease prevention.*

Key word: *Asanas, Pranayamas, Shatkarma, Bala, Disease prevention*

INTRODUCTION-

Yoga is the most practical method for achieving personal and professional excellence with a positive side effect of higher mental transformation. Health is very important for multi-dimensional human development and excellence. *Yoga* is an ideal, simple and cost-effective route for health promotion, disease prevention and management. *Ayurveda* also emphasizes on a healthy lifestyle for physical and mental health promotion.

Ayurveda emphasizes on individualized management based on the body constitution or '*Prakrti*' to potentiate '*Bala*' or strength. '*Prakrti*' is the genetic

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REVIEW ARTICLE

A Review Article on *Kurpara Marma Pradesha* (Elbow Joint) with special reference to Sports Related Injuries

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ABSTRACT

INTRODUCTION: *Kurpara Sandhi Marma* is one of the *Vaikalyakaramarma*. If injured it produces deformity or disability of the person. Many types of sports injuries like Tennis elbow, Golfer's elbow etc. are related with elbow joint which will be leading to deformity that can be avoided by proper Ayurvedic treatment.

METHODOLOGY: *Marma* related reference from Samhitha with commentary and modern anatomy books and sports injury related articles are referred.

RESULT: *Kurpara Marma* mentioned in Ayurveda can be anatomically compared with elbow joint. Over excretion of joints and straining of ligaments during sports related actions leads to conditions such as Tennis elbow. This condition is characterized by pain in the region of medial and lateral epicondylar of elbow pain, and when untreated leads to permanent loss or disability of the limb. Ayurvedic treatments such as *Abhyang* (application of oil) and *Pichu* (application of cotton-soaked with medicated oil) can be adopted to avoid permanent disability.

DISCUSSION: The article discusses about *Acharya Sushruta* description of *Kurparamarma* which is located in upper extremity situated in between humerus radius and ulna bone. Its measurement is 3 *Angula Pramana* and its prognosis after injury produces *Kuni*. Elbow joint is synovial joint functionally hinge type joint found between lower end of humerus and upper end of radius and ulna. The point of articulation of three bones the humerus radius and ulna. The articulation of elbow joint occurs between the Trochlea and Capitulum of humerus and trochlear notch of the ulna and head of radius. In Ayurvedic point of view *Kurpara Marma Abhighataja* leads to deformity of elbow, produces swinging of arm, stiffness of arm, painful movement of upper limb.

Conclusion: In day-to-day life, improper use of forearm and arm, any nerve injury, muscle weakness, by various sports activity will hamper the function of elbow joint, so we have to prevent the joint from injury as well *vaiklalyatha* (deformities) by medicated oileation, sudation, application of cotton dipped in medicated oil (*Pichu*), proper massage, traction, exercise etc.

Key Words *Kurpara Marma, Sandhi, Vaikalyakara Marma*, Elbow joint, Sports injury

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Ayurveda

EFFICACY OF AN AYURVEDA – YOGA INTEGRATED MANAGEMENT IN MUTRA VEGARODHA JANYA UDAWARTHAM: A CASE REPORT

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ABSTRACT This paper reports, the outcomes of an ayurveda – yoga integrated management of Udawartham originated due to Mutra vega rodham (Suppression of urge to micturate). A 50-year-old female patient presented with weakness in the right side of the body associated with right sided headache and earache for two weeks. On detailed interrogation it was found that patient had difficulty in voiding urine for the past one year which has started since she had to suppress the urge to micturate during a travel. She also reported to be having chronic constipation ever since this urination problem developed. She has consulted a nephrologist for the problem but no significant findings were made. The case was diagnosed as Mutra vegarodha janya Udawartham based on the clinic picture. The treatment was initiated with Chiruvilwadi Kashaya, Hinguvachadi Churnam, Anuloma DS tab with which patient reported improvement in symptoms after two weeks of administration. Considering the climate, the medicines were modified to Gandharva Hasthadi, Gandharva erandam, Vaiswanara Churnam along with some Yogasanas and dietary modifications. Later she was admitted in IPD and was administered Avapeedaka Snehapaanam with Vastyamayantaka ghrutham followed by Abhyanga with Mahanarayana tailam, Avagaha sweda with Dasamoola kwatham and Yoga vasthi including Erandamooladi Niruham and Dhanwantharam tailam anuvasanam. At the end of IPD treatment patient reported 90% relief in the symptoms. On discharge, she was advised to continue Vastyamayantakam ghrutham in Samana matra for 10 days followed by Veeratharadi Kashayam, Hinguvachadi churnam, Dhanwantharam 101 avarthi, Punarnavasavam with sookshma ela churnam, Paanam (drinking water) with golden cucumber seeds. Diet and yoga as advised previously was recommended to be continued. At the follow up after one-month patient reported almost normal urination. Vegadharanam can cause grave clinical implications by altering the homeostasis. Management of Vata dosha primarily can yield results in such conditions.

KEYWORDS : Udawartham, Ayurveda, Vega.

INTRODUCTION

The physiological functioning of the body is executed by the various organ systems which are broadly classified into two, viz, Controlling Systems and Working Systems. While the Central Nervous System and Endocrine System are designated as the controlling systems all the other physiological systems are entitled as the working systems. The controlling systems modulate the functioning of the working systems through various feedback mechanism via neuro endocrine pathways. In this way, the Homeostasis is maintained in the body ensuring the state of health. The concept of Vega is unique to Ayurveda. Vega is defined as the manifestation of the natural physiological urges[1]. The classical Ayurveda literature has elaborated 14 such vegas and discussed at large the harmful implications of suppressing and willfully initiating them. Vegas are broadly classified into two: Adharaneeya vegas and Dharaneeya vegas. The former non-suppressible urges are basically the physical/ physiological urges which are again categorized into two: Nutritive/ Anabolic vegas like Kshut (Hunger), Trishna (Thirst), Nidra (Sleeo) etc and Eliminative/ catabolic vegas like Mutra (Micturition), Pureesha (Defecation), Adhovatam (Faltus) etc. Dharaneeya or suppressible vegas are primarily the emotional urges like krodham (Anger), dwesham (grudge), bhayam (fear) etc. As stated by Acharya Charaka, Vata among the tridoshas (Three basic humours viz, Vata, Pitta and Kapha) is the controling factor which regulates all the physiological activities within the body[2]. Thus the controlling systems may be related to the Vata in the body. The violation of the vegas are known to cause vatakopam (aggravation of Vata) which will have as a negative influence on the controlling systems[3]. Such influences will definitely alter the working physilogy and open the doors for clinical ailments as opined in Ayurveda classics that all the diseases have an origin in willful initiation or suppression of the vegas[4].

Such suppression of natural urges, especially Hunger, Sleep, Micturition and Defecation are quite commonly observed these days which lead to clinical symptoms. An Integrated Ayurveda- Yoga approach can be a safe and effective choice of treatment in such conditions.

Patient Information

A 50-year-old female patient presented in the OPD with weakness in the right side of the body associated with right sided headache and earache for two weeks. She developed right sided headache and earache which progressed to pain and weakness in the right side of the body. On detailed interrogation it was found that patient had difficulty in voiding urine for the past one year which has started since she had to suppress the urge to micturate during a travel. She can void urine only with great pressure and had recurrent urinary tract infection. She also reported to be having chronic constipation ever since this urination problem developed.

Clinical Findings

On physical examination no significant findings were there other than the symptoms mentioned above.

Diagnostic Assessment

Clinical symptoms indicated complications of Mutra vega rodha[5] (Suppression of micturition urge). USG and RFT was done to rule out any underlying pathology.

Therapeutic Timeline –

	Treatment Given	Duration	Outcome
OPD Management	Phase 1: Chiruvilwadi Kashaya, Hinguvachadi Churnam, Anuloma DS tab + Padahastasana, Ardhacakrasanam, Sasankasanam, Paschimotanasanam, Pavanamuktasanam + katu, tikta, Kashaya rasas and rooksha ahaaraas & shimbi dhanya	15 days	Improvement in symptoms – head ache, ear ache & slight reduction in one sided weakness. Bowel was regular. But patient reported burning sensation in abdomen.
	Phase 2: Gandharva Hasthadi, Gandharva erandam, Vaiswanara Churnam+ Padahastasana, Ardhacakrasanam, Sasankasanam, Paschimotanasanam, Pavanamuktasanam + katu, tikta, Kashaya rasas and rooksha ahaaraas & shimbi dhanya	7 days	Complete relief in head ache, ear ache & marked improvement in one sided weakness. bowel was regular and straining at urination was reduced by about 10%.

IPD Management	1. Avapeedaka Snehapaanam with Vastyamayantaka ghrutham starting with a hriseeyasi matra of 30ml to assess the agnibalam and followed by Uttama matra. 2. Abhyanga with Mahanarayana tailam, 3. Avagaha sweda with Dasamoola kwatham 4. Yoga vasthi with Erandamooladi Niruham and Dhanwantharam tailam anuvasanam.	15 days	90% relief in the straining at micturition
Follow Up Period	Vastyamayantakam ghrutham in Samana matra (10 ml) in the morning Yoga + Diet as previously advised	10 days	
	Veeratharadi Kashayam, Hinguvachadi churnam, Dhanwantharam 101 avarthi, Punarnavasavam with sookshma ela churnam, Paanam (drinking water) with golden cucumber seeds. Yoga + Diet as previously advised	1 month	100 % relief in symptoms including straining at urination and recurrent UTI.

DISCUSSION

The Mutra vega dharana along with Vata aggravating diet[6] (predominant with pulses) practiced by the patient progressed to vata vaigunya (Dysregulation of Vata) leading to Udawartham. In the context of Vega rodham it has been mentioned that it leads to vata pratiloma (upward movement of Vata) instead of the normal downward flow and the clinical symptoms also indicated Vata vaigunya. Considering this, all the medications, therapies, diet and yoga were designed to attain Vata anulomana (downward movement of Vata) along with a slight Brimhana (Nourishment). Avapeedaka Snehapanam[7] (a therapeutic modality) is specifically indicated in the management of Mutra vega dharanam. Abhyanga (oil massage), Avagaha sweda (sitz bath) and Vasthi (Enema Therapy) are specially indicated treatment modalities for alleviating Vata, Apana vata (a sub type of Vata mainly associated with uro-genital functioning) in particular, in the present case.

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Review

An overview of spot diagnosis book- Anjana Nidana

[1*]Pallavi Uday Chougule, [2]Uday Vidyasagar Chougule

ABSTRACT:

Background: Ayurveda is a holistic science being practiced since ages; it relies on cause effect mechanism derived by observations of *aptas* (credible or authorative persons) over hundreds of patients. As per the era of time different scholars have studied this science and documented their observation based experiences to enrich the forthcoming generations with practical knowledge in lucid terms. Post *Samhita* period we come across numerous books that are available with field of interest pivoted over either *Nidana* i.e *hetu skanda* (etiologies for different diseases) and *lakshana skanda* (clinical features of diseases) or *chikitsa i.e. aushad skanda* (treatment principles, modalities and drugs) of a disease, written for the ease of understanding in concise form with precision. Aim: This article aims to explore the content of *Anjana Nidana* written by *Maharishi Agnivesh* in detail pertaining to clinical diagnosis, which remains out of light and requires to be brought in routine clinical practice. **Method**: The data source for this literary review is collected from Sanskrit text, available translated version and online resources. **Conclusion:** The *Anjana Nidana* book is very handy clinical book focusing on identifying diseases through their unique and specific clinical features, termed *pratyātma-lakṣaṇas* aiding for spot diagnosis and can prove valuable asset in clinical setting.

KEYWORDS: Anjana Nidana, Pratyatma Lakshana, Spot diagnosis, Clinical findings, Maharishi Agnivesha

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1. INTRODUCTION:

Title of text: Anjana Nidana

Author: Maharishi Agnivesha

Time Period: 7-6th century BC

About the book: The book is written in poetry form in Sanskrit language in Devnagari script. It consists of 238 total verses and encompasses all major diseases seen in day to day clinical practice in concise form.

Translation Available:

1. English Translation: By Dr. S Suresh Babu, (Chowkhamba Sanskrit series office-3; Varanasi; 2004)
2. Sanskrit and Hindi translation: By Pandit Shri Brahmashankar Mishra (Chowkhambha Sanskrit Series office; Varanasi; 2004)

Background:

Ayurveda an ancient health science has been used over centuries for maintaining and promoting health of human beings. Ayurveda texts have explained *trisutras* i.e *he*tu (etiologies for different diseases), *linga* (clinical features of diseases), *Aushada* (medicine) *jnana* for serving its motto. As per the era and need of time there have been numerous scholars (*Rishis*, *Acharyas*), who have devised or authored texts to emphasize various aspects of a disease like either its Nidana – samprapti (hetu skanda and lakshana skanda) or chikitsa (aushad skanda). *Anjana Nidana* is such a rare book that we find, written by *Maharishi Agnivesh,* which aims at clinical spot diagnosis by mentioning essential clinical features that are hallmark of a particular disease or condition, still it remains unnoticed in clinical practice. [1] The *Anjana Nidana* is literature in poetry form written in Sanskrit language containing 238 verses, there are no separate chapters. It is found in the *parisishta bhaga* (Annexure form) in *Sharangdhar Samhita* as well as a separate book too. [2, 3] It is assumed that the *Anjana Nidana* must be written around 700-560 BC owing to the period of Atreya Rishi and Agnivesh. [4] This article aims to study and analyse the contents of the book in detail with respect to the diseases covered and their *Nidana panchak*.

2. MATERIAL AND METHODS:

The textbook *Anjana Nidana* by *Maharsi Agnivesa* was studied and analyzed with reference to its contents and arrangement sequence. Further the Nidana panchak of topics included in the *Anjana Nidana* were also analyzed and presented. The sequence presented in *Anjana Nidana* was further compared with the disease sequence in *Charak samhita chikitsa sthan*, *Sushruta samhita chikitsa sthan* and *uttar tantra* and *Madhav Nidana.*

Table 1: Name of diseases covered in Anjana Nidana with reference shloka numbers.

Sr.No.	Name of the Disease/ Condition	Reference Shloka
1.	*Jwara*	10-40
2.	*Atisaar*	41-45
3.	*Pravahika*	44
4.	*Grahani – Samgrahani*	46-49
5.	*Arsha*	50-53
6.	*Ajirna*	54-57
7.	*Bhasmak*	57
8.	*Krimiroga*	58
9.	*Pandu*	59-61
10.	*Kamala – Kumbha kamala*	62

11.	*Raktapitta*	63-65
12.	*Kshayaroga*	66-68,69
13.	*Urahkshata*	68
14.	*Kasa*	70-71
15.	*Hikka*	72-73
16.	*Shwasa*	74-76
17.	*Swarabheda*	77-78
18.	*Aruchi*	78-79
19.	*Chardi*	80-82
20.	*Trishna*	83-86
21.	*Murchha*	87-89
22.	*Panatyaya- panajeerrna*	90-91
23.	*Unmada*	92-97
24.	*Apasmaara*	98-99
25.	*Vata vyadhi*	100-111
26.	*Vatarakta*	112- 115
27.	*Aamvata*	116-119
28.	*Shoola*	120-123
29.	*Udavarta*	124-127
30.	*Gulma*	128-133
31.	*Hridroga*	134-135
32.	*Mutrakruchra*	136-139
33.	*Mutraghat*	140
34.	*Ashmari*	141-143
35.	*Prameha*	144-149
36.	*Medoroga*	150
37.	*Udararoga*	152-159
38.	*Shotha*	160-175
39.	*Vrana*	175-180
40.	*Bhagna*	181-183
41.	*Nadi-vrana*	184
42.	*Bhagandar*	185-187
43.	*Galaganda*	188
44.	*Granthi, Arbuda*	189
45.	*Gandamala & Apachi*	190
46.	*Vidradi*	191-195
47.	*Kushta -Shwitra*	196-203
48.	*Upadamsa*	204-205
49.	*Udarda*	206
50.	*Amlapitta*	207
51.	*Visarpa*	208
52.	*Masurika*	209
53.	*Visphota*	210
54.	*Balaroga*	211-213
55.	*Garbhasrava-paata and Mudhagarbha*	214
56.	*Sutika roga*	216
57.	*Pradara roga*	217-218
58.	*Napumsakata Nidana*	219-222
59.	*Netra roga*	223-226
60.	*Siro roga*	227
61.	*Karna roga*	228
62.	*Nasa roga*	229
63.	*Mukha roga*	230
64.	*Visha*	231-233

Table 2: *Nidana Panchak* mentioned of Diseases in *Anjana Nidana.*

SR. NO.	NAME OF THE DISEASE/ CONDITION	NIDANA	SAMPRAPTI	PURVARUPA	RUPA	BHEDA	SADHY-ASADHYATA	UPADRAVA
1.	*Jwara*	+	+	+	+	+	+	+

2.	*Atisaar*	-	+	-	+	+	+	-
3.	*Pravahika*	-	+	-	-	-	-	-
4.	*Grahani –Samgrahani*	-	+	-	+	-	+	-
5.	*Arsha*	-	+	-	+	+	+	+
6.	*Ajirna*	+	-	-	+	+	+	+
7.	*Bhasmak*	-	+	-	-	-	-	-
8.	*Krimiroga*	-	-	-	+	-	-	-
9.	*Pandu*	+	-	-	+	+	+	-
10.	*Kamala–Kumbha kamala*	-	-	-	+	-	-	-
11.	*Raktapitta*	-	+	-	+	+	+	+
12.	*Kshayaroga*	+	+	-	+	-	+	-
13.	*Urahkshata*	-	-	-	+	-	-	-
14.	*Kasa*	-	+	-	+	+	+	-
15.	*Hikka*	-	+	-	+	+	+	-
16.	*Shwasa*	-	+	-	+	+	+	-
17.	*Swarabheda*	+	+	-	-	+	+	-
18.	*Aruchi*	-	-	-	+	+	-	-
19.	*Chardi*	+	-	-	+	+	-	+
20.	*Trishna*	-	+	-	+	+	-	-
21.	*Murchha*	-	+	-	+	+	-	-
22.	*Panatyaya- panajeerrna*	+	-	-	+	-	-	-
23.	*Unmada*	+	+	-	+	+	+	-
24.	*Apasmaara*	-	+	-	+	+	-	-
25.	*Vata vyadhi* (26 conditions mentioned)	-	+	-	+	-	+	-
26.	*Vatarakta*	+	+	-	+	+	+	-
27.	*Aamvata*	+	+	-	+	+	-	+
28.	*Shoola*	+	+	-	+	+	-	+
29.	*Udavarta*	+	-	-	+	+	+	-
30.	*Gulma*	-	+	-	+	+	+	-
31.	*Hridroga*	-	+	-	-	+	-	+
32.	*Mutrakruchra*	-	+	-	+	+	+	-
33.	*Mutraghat*	-	+	-	-	-	-	-
34.	*Ashmari*	-	+	-	+	+	+	-

35.	*Prameha*	+	+	-	+	+	+	+
36.	*Medoroga*	-	+	-	-	-	-	-
37.	*Udararoga*	-	+	-	+	+	+	-
38.	*Shotha*	+	-	-	+	+	+	+
39.	*Vrana*	+	-	-	+	+	+	+
40.	*Bhagna*	-	-	-	+	+	-	-
41.	*Nadi-vrana*	-	-	-	+	-	-	-
42.	*Bhagandar*	-	-	-	+	+	-	-
43.	*Galaganda*	-	-	-	+	+	-	-
44.	*Granthi, Arbuda*	-	-	-	+	+	-	-
45.	*Gandamala & Apachi*	-	-	-	+	+	-	-
46.	*Vidradi*	-	-	-	+	+	+	-
47.	*Kushta -Shwitra*	+	-	-	+	+	-	-
48.	*Upadamsa*	-	-	-	+	-	-	-
49.	*Udarda*	-	-	-	+	-	-	-
50.	*Amlapitta*	-	-	-	+	-	-	-
51.	*Visarpa*	-	-	-	+	-	-	-
52.	*Masurika*	-	-	-	+	-	+	-
53.	*Visphota*	-	-	-	+	+	-	-
54.	*Balaroga*	-	-	-	+	+	-	-
55.	*Garbhasrava, paata and mudha garbha*	-	-	-	+	-	+	-
56.	*Sutika roga*	-	-	-	-	-	-	-
57.	*Pradara roga*	-	-	-	+	+	-	-
58.	*Napumsakata Nidana*	-	-	-	+	-	+	-
59.	*Netra roga*	+	-	-	+	+	-	-
60.	*Siro roga*	-	-	-	-	+	-	-
61.	*Karna roga*	-	+	-	-	+	-	-
62.	*Nasa roga*	-	-	-	-	+	-	-
63.	*Mukha roga*	-	+	-	-	-	-	-
64.	*Visha*	-	-	-	+	+	-	-

Maharishi agnivesha in anjana Nidana has focused more on diagnostic clinical feature without much elaboration of *purvarupas* (prodromal symptoms). Hetu (etiologies) are explained for few instances which are particular to

the conditions for e.g *jwara , ajirna, pandu, kshayaroga, swarabheda, chardi, panatyaya- panajeerrna, unmada, vatarakta, aamvata, shoola, udavarta etc. as mentioned in Table no.2.* Wherever essential *Acharya* has explained the *pratyatma lakshana* based on type for e.g in case of dhatugata jwara only a single lakshana for individual dhatugata jwara is mentioned. *Upadravas* are mentioned for conditions like *jwara, ajirna, pandu, kshayaroga, swarabheda, chardi, panatyaya-panajeerrna, unmada, vatarakta, aamvata, shoola, udavarta.*

Table no.3 Comparative sequence of diseases in *Charak Samhita, Sushruta Samhita*, *Madhav Nidana* and *Anjana Nidana*

Sr. No.	Charak Samhita	Sushruta Samhita	Madhav Nidana	Anjana Nidana
	Chikitsa Sthan= Chp 3-30	Chikitsa Sthan =Chp 1-25	Chp 2-69	No Separate Chapters Mentioned
1.	*Jwara*	*Dwivraniya*	*Jwara*	*Jwara*
2.	*Raktapitta*	*Sadyovraniya*	*Atisar*	*Atisaar*
3.	*Gulma*	*Bhagna*	*Grahani*	*Pravahika*
4.	*Prameha*	*Vatavyadhi*	*Arsha*	*Grahani –Samgrahani*
5.	*Kushta*	*Mahavatavyadhi*	*Agnimandya adi*	*Arsha*
6.	*Shosha/Rajyaksham*	*Arsha*	*Krimi*	*Ajirna*
7.	*Unmada*	*Ashmari*	*Pandu –Kamala-Kumbhakamala adi*	*Bhasmak*
8.	*Apasmara*	*Bhagandara*	*Raktapitta*	*Krimiroga*
9.	*Kshatakshina*	*Kushta*	*Rajyakshma –kshatkshina*	*Pandu*
10.	*Swayathu*	*Mahakushta*	*Kasa*	*Kamala–Kumbha kamala*
11.	*Udara*	*Prameha*	*Hikka-Shwasa*	*Raktapitta*
12.	*Arsha*	*Pramehapidaka*	*Swarabheda*	*Kshayaroga*
13.	*Grahani*	*Madhumeha*	*Arochaka*	*Urahkshata*
14.	*Pandu*	*Udara*	*Chhardi*	*Kasa*
15.	*Hikka-Swasa*	*Mudagarbha*	*Trushna*	*Hikka*
16.	*Kasa*	*Vidradi*	*Murcha-Bhrama-Nidra-Tandra-Sanyas*	*Shwasa*
17.	*Atisar*	*Visarpa*	*Panatyay*	*Swarabheda*
18.	*Chardi*	*Granthi-Apachi-Arbuda-Galagand*	*Daha*	*Aruchi*
19.	*Visarp*	*Vriddhi-Upadamsa-Slipada-*	*Unmada*	*Chardi*
20.	*Trushna*	*Kshudrarog*	*Apsmar*	*Trishna*

21.	*Visha*	*Sukadosha*	*Vatavyadhi*	*Murchha*
22.	*Madatyaya*	*Mukharoga*	*Vatarakta*	*Panatyaya- panajeerrna*
23.	*Dwivraniya*	*Shopha*	*Urusthamba*	*Unmada*
24.	*Trimarmiya*	*Anagatabaadh*	*Amavata*	*Apasmaara*
25.	*Urusthamaba*	*Mishrak*	*Shool-Parinam Shool-Annadrava Shool*	*Vata vyadhi* (26 conditions mentioned)
26.	*Vatavyadhi*	Uttar Tantra Chp. 39-62	*Udavarta-Anaha*	*Vatarakta*
27.	*Vata shonita*	*Jwara*	*Gulma*	*Aamvata*
28.	*Yoni vyapat*	*Atisar*	*Hrudroga*	*Shoola*
29.		*Shosha*	*Mutrakriccha*	*Udavarta*
30.		*Gulma*	*Mutraghat*	*Gulma*
31.		*Hrudroga*	*Ashmari*	*Hridroga*
32.		*Pandu*	*Prameha*	*Mutrakruchra*
33.		*Raktapitta*	*Medoroga*	*Mutraghat*
34.		*Murcha*	*Udara*	*Ashmari*
35.		*Panatyaya*	*Shotha*	*Prameha*
36.		*Trushna*	*Vruddhi*	*Medoroga*
37.		*Chardi*	*Galaganda-Gandmala-Apachi-Granthi-Arbuda*	*Udararoga*
38.		*Hikka*	*Shlipada*	*Shotha*
39.		*Shwasa*	*Vidradi*	*Vrana*
40.		*Kasa*	*Vranashotha*	*Bhagna*
41.		*Swarabheda*	*Shariravrana*	*Nadi-vrana*
42.		*Krimi*	*Sadyovrana*	*Bhagandar*
43.		*Udavarta*	*Bhagna*	*Galaganda*
44.		*Visuchika*	*Nadivrana*	*Granthi, Arbuda*
45.		*Arochaka*	*Bhagandara*	*Gandamala & Apachi*
46.		*Mutraghat*	*Upadamsa*	*Vidradi*
47.		*Mutrakrichha*	*Shukadosha*	*Kushta -Shwitra*
48.		*Amanushopasarga*	*Kushta*	*Upadamsa*
49.		*Apsmara*	*Shitapitta-Udarda-Kotha*	*Udarda*
50.		*Unmada*	*Amlapitta*	*Amlapitta*
51.			*Visarpa*	*Visarpa*
52.			*Visphota*	*Masurika*

53.			*Masurika*	*Visphota*
54.			*Kshudrarog*	*Balaroga*
55.			*Mukharog*	*Garbhasrava, paata and mudha garbha*
56.			*Karnarog*	*Sutika roga*
57.			*Nasarog*	*Pradara roga*
58.			*Netrarog*	*Napumsakata Nidana*
59.			*Shirorog*	*Netra roga*
60.			*Asrugdhara*	*Siro roga*
61.			*Yonivyapat*	*Karna roga*
62.			*Yonikanda*	*Nasa roga*
63.			*Mudagarbha*	*Mukha roga*
64.			*Sutika*	*Visha*
65.			*Stanarog*	
66.			*Stanyadushti*	
67.			*Balrog*	
68.			*Visharog*	

In *Charak Samhita* diseases are explained in *Nidana Sthan* (8 chapters) and *Chikitsa Sthana* (chapter 3 to 30). [5] In *Sushrut Samhita* diseases are explained in *Nidana Sthan* (16 chapters), in *Chikitsa Sthana* (chapter 1-25) and in *Uttar Tantra* (chapter 39-62). [6] Madhav Nidana explains diseases in sequence without any separate sthanas (chapter 2 to 69). [7] On careful analysis it is observed that the sequence mentioned in *Anjana Nidana* closely resembles that of *Madhav Nidana* rather than *Charak Samhita*. [3]

3. DISCUSSION

Anjana Nidana is mentioned to be written by the Maharshi Agnivesa but we do not find any other details about him in the book. The book has 238 verses and covers almost all the important diseases that are seen in routine clinical practice with its pinpointed clinical features. This is a concise clinical book which features one or two important clinical features of a particular disease precisely to diagnose a condition eliminating the common features. Types, complications, prognosis of various diseases have also been mentioned in this book.

- **Highlights of this book: -**

1. In case of *dhatugata jwara* single clinical feature is mentioned particular to the *dhatu* to diagnose the condition as follows in *rasagata jwara, hrudruga* (pain in cardiac region) is seen. In *raktagata jwara, asra vami* (haematemesis) is mentioned. In *mamsagata jwara, daha* (burning sensation) is mentioned. In *medogata jwara, vaigandhya* (foul

body odour) is mentioned. In asthigata jwara asthi ruka (pain in bones) is told. In *Majjagata jwara, klama* (excessive fatigue) and in *sukragata jwara, shukrotsraga* (ejaculation of semen) is mentioned.

2. While mentioning types of jwara "*laghu*" and "*guru*" *jwara* are explained where *laghu jwara* is having fewer complications and is easily curable while *guru jwara* has more complications and is incurable.
3. It is noteworthy that *Aamvata* condition is explained in detail with its Nidana,samprapti, rupa and upadrava in this book, though the original *Agnivesha Tantra* i.e *Charak samhita* do not mention these. Though the tikka of chakrapani explains "*nirupstambhado*" condition in Charaka Chikitsa, 28th chapter while explaining *vata vyadhi chikitsa sutras.*
4. Further there are types and clinical features of surgical conditions like *bhagandhar*, *bhagna* have also been mentioned.
5. Parinaam shula samprapti and lakshana are explained in *Anjana Nidana* which is not seen in any of the bruhatryees.
6. Also the sequence of diseases mentioned in *Anjana Nidana* is similar to *Madhav Nidana*. All these points raise the query about the time period of this book and author named *Agnivesh*.
7. All the conditions are mentioned with a single *pratyatma lakshana* or two making it easy to recall and identify the condition in patient.

4. CONCLUSION

The *Anjana Nidana* book is very handy clinical book focusing emphasizes identifying diseases through their unique and specific clinical features, termed *pratyātma-lakṣaṇas* aiding for spot diagnosis. Though the exact time period of this literature cannot be fixed the hallmark features enable experienced physicians to make swift and accurate diagnoses in everyday practice. The verses explained here are easy to memorize and bring into practice.

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REVIEW ARTICLE

A Review Article on *Kurpara Marma Pradesha* (Elbow Joint) with special reference to Sports Related Injuries

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ABSTRACT

INTRODUCTION: *Kurpara Sandhi Marma* is one of the *Vaikalyakaramarma*. If injured it produces deformity or disability of the person. Many types of sports injuries like Tennis elbow, Golfer's elbow etc. are related with elbow joint which will be leading to deformity that can be avoided by proper Ayurvedic treatment.

METHODOLOGY: *Marma* related reference from Samhitha with commentary and modern anatomy books and sports injury related articles are referred.

RESULT: *Kurpara Marma* mentioned in Ayurveda can be anatomically compared with elbow joint. Over excretion of joints and straining of ligaments during sports related actions leads to conditions such as Tennis elbow. This condition is characterized by pain in the region of medial and lateral epicondylar of elbow pain, and when untreated leads to permanent loss or disability of the limb. Ayurvedic treatments such as *Abhyang* (application of oil) and *Pichu* (application of cotton-soaked with medicated oil) can be adopted to avoid permanent disability.

DISCUSSION: The article discusses about *Acharya Sushruta* description of *Kurparamarma* which is located in upper extremity situated in between humerus radius and ulna bone. Its measurement is 3 *Angula Pramana* and its prognosis after injury produces *Kuni.* Elbow joint is synovial joint functionally hinge type joint found between lower end of humerus and upper end of radius and ulna. The point of articulation of three bones the humerus radius and ulna. The articulation of elbow joint occurs between the Trochlea and Capitulum of humerus and trochlear notch of the ulna and head of radius. In Ayurvedic point of view *Kurpara Marma Abhighataja* leads to deformity of elbow, produces swinging of arm, stiffness of arm, painful movement of upper limb.

Conclusion: In day-to-day life, improper use of forearm and arm, any nerve injury, muscle weakness, by various sports activity will hamper the function of elbow joint, so we have to prevent the joint from injury as well *vaiklalyatha* (deformities) by medicated oileation, sudation, application of cotton dipped in medicated oil (*Pichu*), proper massage, traction, exercise etc.

Key Words *Kurpara Marma, Sandhi, Vaikalyakara Marma,* Elbow joint, Sports injury

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INTRODUCTION

The location of *Kurpara Marma pradesha* is mentioned in the upper limb at the joining place of arm and forearm. This area is classified under *vaikalyakara marma* i.e. any injury is this site will result in severe hemorrhage and impairment in the functions of forearm. Anatomically *Kurpara Marma* is comparable with the elbow joint, injury of which leads disability or loss of mobility and sensations.

Elbow joint is a synovial joint present between lower end of humerus bone and the upper end of radius and ulna bones. Many complications following injury or trauma are associated with elbow joint such as deformity of elbow, swinging of arm, stiffness of arm, painful and restricted movements of forearm. Various sports related injuries will also lead to condition such as tennis elbow, golfers' elbow; student elbow, nerve injury, muscle weakness etc. hamper the functions of elbow joint. In Ayurveda, in order to prevent severe deformities and also to aid in improving the stability and integrity of the affected region, application of *Kashyas* (decotion) and *Tailas* (medicated oils) made with drug which have *Vatahara (vata* alleviating), *Sothahara (reduce swelling)*, are prescribed.

MATERIALS AND METHODS

Ayurvedic text books such as *Susrtha samhitha* with its commentary related with reference of *Kurpara marma* and modern anatomy text book, clinical anatomy book, sports injury related articles and websites were referred from the literary of Dr. V.P.A. Medical college, Vadnagar, Gujarat were reviewed for this article.

LITERATURE REVIEW

➢ ***KURPARA SANDHI MARMA*:**

The reference "*Prakoṣṭapragaṇḍayoḥsandhānekūrparanāma, tatrakuṇiḥ* from Susrutha Samhita mentions that the *Kurpara Marma* is situated in the upper limb in the region of joining of arm and forearm (present in between *prakoshta* (radius, and ulna) and *praganda* (humerus) *Asthi*)[1] They are 2 in number 1 on each upper limb. Furthermore, they are classified under *shaakagata marmas* (vital area of limbs) and *sandhigata marma* (vital area related with joint). The other anatomical sturctures related includes namely *sira* (blood vessels), *Asthi* (bone), *Snayu* (ligaments, tendons, nerves) and *Mamsa* (muscles) in less proportion. Measurement of the *Marma* is 3 *Angula pramana* (3 finger liner measurement). On the basis of prognostic criteria, it is place under *Vaikalyakara Marma* (those which injured result in deformity). Injury to the *Kurpara marma* leads to *kunnataa* (deformity) such as dangling of hand (hanging or swinging loosely), deformity of forearm and Stiffness or restricted movements of upper limb.

➢ **VAIKALYAKARA MARMA[2]:**

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The total number of *Vaikalyakara Marma* is 44, which produce *Vaiklaytvam* (disability). *Kurpara Marma* is one among the *Vaikalyakara Marma* located in both upper extremities. If a *Vaikalyakara Marma* gets injured, the concerned part of body becomes disabled, but if when treated by efficient physician bad prognosis can be avoided.

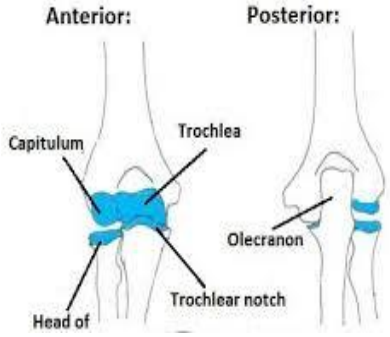

Figure 1 Anatomy of elbow joint

➢ ELBOW JOINT[3]:

The elbow joint is a hinge variety of synovial joint between the lower end of humerus (upper articular surface the capitulum and trochlea) and the upper ends of radius and ulna bones. On extreme flexion, the coronoid fossa lies just above the trochlea and the coronoid process of ulna fits in the anterior fossa. Similarly, the radial fossa just above the capitulum allows for radial head to fit in. Lower articular surface- upper surface of the head of the radius articulates with the capitulum. Trochlear notch of the ulna articulates with the trochlea of the humerus. The elbow joint is continuous with the superior radio-ulnar joint. The humero-radial, the humero-ulnar and the superior radio-ulnar joints are together known as cubital articulations. Superiorly capsular ligament attached to the lower and of the humerus, covering the capitulum, trochlea, radial fossa, coronoid fossa and the olecranon fossa making them intracapsular[4]. Inferio-medially capsular ligament are attached to the margin of the trochlear notch of the ulna. Inferio-laterally capsular ligament attached to the annular radio-ulnar joint. The anterior and posterior parts of this ligament are thickened. The ulnar collateral ligament is triangular in shape and the apex is attached to the medial epicondyle of the humerus while the base is attached to the ulna. The thick anterior band of the ligament is attached below to the coronoid process and posterior band is attached to the olecranon process. The lower ends are connected to each other by an oblique band which gives attachment to the thinner intermediate fibers of the ligament. Ulna nerve crosses this ligament, and also the flexor digitorum superficialis muscle originates from this ligament. The fan shaped radial collateral or the lateral ligament extends from the lateral epicondyle to the annular ligament. The supinator and extensor carpi brevis get originated from it. The movements of elbow joint included flexion which is produced by brachialis, biceps brachii, and brachioradialis and Extension by triceps brachii and anconeus muscles. Carrying Angle: refers to when the extended forearm the transverse axis of the elbow joint is directed medially and downwards, makes an angle of about 13^0 the angle permits the forearms to clear

the hips in swinging movement during walking[5]. It is important for posture maintenance while caring objects. In full flexion of the elbow and pronation of the forearm the carrying angle disappears. The forearm comes in line with the arm in mid prone position in which the hand is mostly used. The blood supply of the elbow joint is by arterial anastomosis around the elbow formed by the branches of brachial, radial and ulnar artery. Nerve supply is by the Ulnar, Median and Radial nerve.

- **SPORT INJURY:**

Injuries that mostly commonly occur during athletic activity or exercise. Elbow joint is the most vulnerable to get damaged because of the stresses to which it is subjected especially in Sports such as tennis, golf etc. Repetitive arm motions can lead to over exersion, and an injury to elbow makes daily activities restricted and painful. The *Kupara Sandhi Marma abhghatha* (injyury to elbow joint region) has been explained in the Ayurvedic classic may be correlated with the Sports injuries in elbow joint. Medical science is also in a position to give proper advises in both preventive & curative aspect through better anatomical understanding of elbow joint. Common sports injury of elbow joint includes Tennis elbow, Golfers elbow, Supracondylar fractures, dislocation of elbow, head of radius fracture.

- **TENNIS ELBOW[6]:**

Caused by partial tearing or degeneration of the superficial extensor muscles from the lateral epicondyle of the humerus. It is characterized by pain and tenderness over the lateral epicondyle of the humerus with pain radiating down the lateral side of the forearm, it is common in tennis players and violinists.

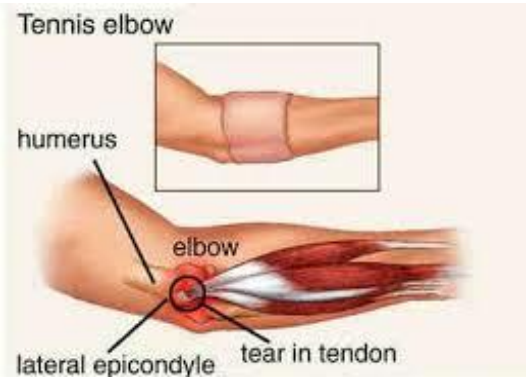

Figure 2 Tennis elbow

Medial Elbow Pain**:** Medial Elbow Pain Causes in Throwers. Repetitive throwing can irritate and inflame the flexor/ pronator tendons where they attach to the humerus bone on the inner side of the elbow. Athletes will have pain on the inside of the elbow when throwing, and if the tendinitis is severe, they will also experience pain during rest.

- **ULNAR COLLATERAL LIGAMENT INJURY[7]-**

The ulnar collateral ligament (UCL) is the most commonly injured ligament in throwers. Injuries of the UCL can range from minor damage and inflammation to a complete tear of the ligament. Athletes will have pain on the inside of the elbow, and frequently notice decreased throwing velocity. Athletes with UCL injuries should not be allowed to pitch until they have been evaluated.

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Neurological injuries such as C8-T1nerve and ulnar neuritis can manifest as medial elbow pain.

Medial epicondylitis is commonly known as *golfer's elbow*[8]. This does not mean that only golfers have this condition. But the golf swing is a common cause of medial epicondylitis. Many other repetitive activities can also lead to golfer's elbow--throwing, chopping wood with an ax, running a chain saw, and using many types of hand tools. Any activities that stress the same forearm muscles can cause symptoms of golfer's elbow. It is a tendinopathy of the insertion of the flexors of the fingers and pronator. Golfers elbow very similar to the tennis elbow but occurs at the medial side of the elbow, where the pronator teres and the flexors of the wrist are originates. Tensing of these muscles by resisted wrist and finger flexion in pronation will provoke pain. Medial Epicondylitis (Golfer's Elbow) commonly involves the wrist and finger flexors -common flexor tendon. The lateral epicondylitis with repetitive tendon injuries leads to angio fibroblastic degeneration or tendinosis.

➢ **TREATMENT OF ELBOW INJURIES**[9]:

It consists of rest, holding cold compress, non-steroidal anti-inflammatory drugs, local anesthetic and steroid injection, and physiotherapy. Tennis player exercises, light pocket, smaller grip, elbow support. Chronic cases require surgery.

In Ayurvedic prospective injury increases *vata*, so, the treatment should consist basically of *Vathahara*, drugs (pacification of *vata*) in the treatment. They include *lepam* (external application of medicated paste) with *Vatahara*, *Sothahara (*pacification of pain and swelling*)* and *raktaprasadak* drugs (purification of rakthadhathu), *Pichu* (application of cloth or cotton dipped in oil or *kashaya*), and *Dhara* (pouring medicated oil) with *Vathahara tailas*[10].

➢ **GENERAL PREVENTIVE MEASURES OF ELBOW**[12]:

1. Don't carry objects that are two heavies
2. Stretch before and after physical exercise.
3. Do stretching and range-of-motion exercise with finger and wrist to prevent stiffening of the tendon of the elbow.
4. Gently bend, straighten, and rotate your wrist, if pain is there then stopping the exercise.
5. To prevent strain of muscles, use the correct movement or positions during activities.
6. Avoid over use of arm, doing repeated movement, which will cause injury to the bursa.
7. Wear seat belt while travelling in a motor vehicle.
8. Wear protective gear during sports or recreation such as roller-skating or soccer.
9. Supportive splints reduce the risk of injury.
10. Wear protective clothing to protect sports injury.

DISCUSSION

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Elbow joint is a compound para condylar joint as the lower end of humerus articulate with the radius and ulna. It is a hinge joint allowing only flexion and extension, arch of 150 degree. The stability of joint produced by the wrench shaped articular surface of the olecranon and the pulley shaped trochlea of the humerus. It also has strong medial and lateral ligament. All this anatomical structure makes the joint respond differently to trauma, exercise and massage etc. In spite of this anatomical structure, it is vulnerable to the traumatic effect of these region produce pain and inflammation and loss of function. Blunt trauma produces permanent disability. In Ayurvedic point of view *Kurpara Marma abhighataja* leads to deformity of elbow, produces swinging of arm, stiffness of arm, painful restricted movement of upper limb. Because of these disabilities our *Acharyas* have mentioned *Kurpara Marma* under *Vaikalyakara marma*.

CONCLUSION

Kurpara Marma is one of the *Vaikayalkara Marma* (loss of function due to injury). *Kurpara Marma* or *Kurpara Sandhi Marma* includes the proximal radioulnar and the joint between humerus and radioulnar joint. An injury to this *Marma* causes deformity, pain and swelling. The articulation of elbow joint occurs between the trochlea and capitulum of humerus and trochlear notch of the ulna and head of radius. The elbow is capable of simple hinge movement of flexion and extension. Injury oriented deformity in sports at elbow joint, such as injuries like Tennis elbow, Golfers elbow and medial epicondyle pain causes dislocation, subluxation, sprain, instability, leading to severe pain stiffness and deformity. Deformities and complications can be avoided by certain Ayurvedic treatment and preventive measures especially with *vata* alleviating drugs.

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CONCEPT OF SHADBHAVA IN HEALTHY PROGENY

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Abstract

According to Ayurvedic principles, proper preparation of the parents is an essential prerequisite for a healthy progeny Pre-conception care is a set of interventions that identifies biomedical behavioral and social risks to the health of the mother and the baby. . For meeting the objective of healthy progeny, Ayurveda scholars felt the importance of six procreative factors (*Shadgarbhkara bhavas*) such as *Matrija, Pitrija, Aatmaja, Rasaja, Satmyaja, and Sattvaja.* The present literary / conceptual study thus focuses mainly on interpreting these observations, on the basis of modern scientific knowledge.

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Key Words:
Atmaja, Matrija, Pitrija ,Rasaja,, Satmyaja, Sawaja -Shad bhavas

INTRODUCTION

Mother Nature has provided the best of reproduction to all living beings, enabling them to preserve their species. Human being, the most evolved creature is fully aware of the better progeny. This fact is not true for today only. The references available in our ancient texts clearly indicate towards about its importance. Despite the advancements in diagnostic techniques and therapeutic interventions, medical science has failed to keep the incidence of congenital malformations under control. Ayurveda, the ancient Indian medical system has given due emphasis on this and postulated various measures to minimize the risks. These measures start well before conception. According to Ayurvedic principles, the proper preparation of the parents is an essential prerequisite for a healthy progeny. These measures start well before conception. For meeting the objective of healthy progeny, Ayurveda scholars felt the importance of six procreative factors (*Shadgarbhkarabhavas*) such as *Matrija, Pitrija, Aatmaja, Rasaja, Satmyaja, and Sattvaja*[1]. Neither mother nor father, nor the congenial atmosphere or different varies of food, or the soul, or the mind transmigrated from other world can be sole causative factor for the formation of foetus[2]. The conglomeration of these procreative factors is must for healthy progeny. The physical, mental, social, and spiritual well-being of the person, proper nutrition of the mother during pregnancy, and practice of a wholesome regimen, play a prime role in achieving a healthy offspring, thus structuring a healthy family, society, and nation. Negligence toward any of these factors becomes a cause for unhealthy and defective child birth & congenital malformations.

Materials & Methods:

Classical references on Ayurvedic literature & modern medicine on subject of Embryology & Genetics were referred from Library of Dr vasantparikh Ayurvedic medical college vadnagar Gujarat and internet related websites. This is purely literary research work and references collected were critically analyzed and presented.

Role of heredity in embryology: Keeping this principle in mind Charaka has said that there are six factors which are collectively responsible for proper development of an embryo which also include hereditary factors. They are known as *shadbhavasamudaya.*

1. *Mataruja*- Maternal factors
2. *Pitraja*paternl factors
3. *Atmaja* – Ama (soul)
4. *Satmyaja* – factors for which growing embryo has tolerance & acceptability
5. *Rasaja* -Nutritional factors
6. *Satwaja* - Psychic factors

All the six factors act collectively while the embryo is growing. In absence of even single factor embryo will not grow properly. Ayurveda also believes that through growth process of every organ is initiated at one and the same time; few organs develop early whereas few develop afterwards. This collective initiation of growth process has been accepted by all ayurvedic embryologists under the heading of *'yugpatvikaskrama'*.This theory was postulated by Dhanvantari[3].

Therefore following body parts or organs respectively develop from respective *bhavas*[4].

***Matruja bhavas*:** Skin, blood, plasma ,muscle tissue , fat, umbilicus, heart, pancreas, gall bladder liver, spleen kidney, urinary bladder, stomach ,duodenum, small intestine, omentum, rectum, anal canal and anus .

Pitruja bhava: Hair, secondary sexual characters like beard, axillaries and groin hair and teeth blood vessels, bony tissues, nails, ligament, tendon, semen, and sperm.

A**tmaja bhava**: It awards independent life span to every individual that is short life span, average life span, long life span, control on actions of sensory organs, vital energy, facial look, body built, voice,

complexion, psycho-metaphysical principles such as forbearance, sense of happiness, grief, jealousy, good or composed psychic built intelligence, Inspiration, pain, desire, ego and memory.

Satmyja bhava: An embryo cannot grow properly if it is no provided acceptable or agreeable factor through maternal diet .the *satmyaja* factor responsible for awarding health, inclination to work, non greedy attitude, undemanding and unbecoming behavior, perception capacity of organs, speech articulation, valor, and glow, ideal semen for reproduction continued sense of happiness and general awareness in sense.

***Rasaja bhava*:** In absence of nutritional factors mother and fetus both cannot survive and thus no proper fetal growth takes place. therefore, mother must intake all antenatal nutritive essentials like fruits, vitamins or minerals etc…the items which grow properly by*rasaja* factors are growth & decay of body, vitality, body built, survival and viable factors, growth factors for proper development of body parts and organs, metabolism, strength, spirit and also rejuvenating and immune factors .

***Satvaja bhava*:** *Mana* or *satva* arrives from previous body (*purvajanma*) by *punarjanma*(rebirth) .this is why many a times one recalls or recaps the life time events of *purvajanma*. Such persons who remember previous life events are known as *jatismar*.

The properties which are awarded by *satva* factors are love, affection, good conduct, sanctity in life belief on god, prowess, spirit, jealousy, maintenance of past memory, attachment, sacrifice, sense, anger, chivalrous character, fear, tiredness, kind heartedness, activeness, lethargy, sensuous temperament.

Status of *satva* or *mana* varies from person to person. Few of them are *RAJAS*, few *TAMAS*, and few *SATVIK*.

Contribution of Shadbhavas:

If mother and father are the sole responsible or capable elements of producing an embryo, all those couple desirous of having children of particular sex according to their wish. No couple will remain will remain childless or with a progeny of unwanted sex[5].The embryo is born from the mother and the father. Placentaion is not possible without mother &faher, in fact male & female gametes, female reproductive organs are one among the essential factors of conceptio[6].

If only *atma* is accepted as creator of another *atma* it could have preferred o transmit its very qualities to the species of its choice. But it is not seen, thus only *atma* is not capable of producing[7].

Embryo is not derived only from congenial, wholesome or suitable diet. If it was so, then only those couples using suitable diet possessing high quality of rasa would have had progeny[8].

The *satwa* does not descend from outer world, if it was so; all the happenings of previous life would not have remained unheard, unseen, unknown. Bu one does not remember anything of previous life[9].

The mother, the father, and *atma*etc factors are not totally independent for all their functioning. Some of the functions are performed independently, some depending upon deeds, at some hey are much potent and at others not so.

Disscussion:

Probable correlation of *shadbhavas*:

Matrija- Pitrija bhavas: One of the most important concepts concerning heredity has been thoroughly presented in ayurvedic literature. *Kula* or *Gotra* of parents, age at the time of conception, health of the reproductive organs of the parents, time of conception, *bija* of mother & father, maternal diet during pregnancy, drugs-medicines taken by a woman during her pregnancy, and any disease in the mother during her pregnancy, can affect the health and normalcy of a fetus. Genetic imprinting and inheritance of traits for humans are based upon Mendel's model of inheritance. Mendel deduced that inheritance depends upon discrete units of inheritance, called factors or genes. Autosomal traits are associated with a single gene on an autosome (non-sex chromosome) they are called "dominant" because a single copy—inherited from either parent—is enough to cause this trait to appear. An autosomal recessive trait is one pattern of inheritance for a trait, disease, or disorder to be passed on through families. X-linked genes are found on the sex X chromosome. X-linked genes just like autosomal genes have both dominant and recessive types.

Recessive X-linked disorders are rarely seen in females and usually only affect males, while Y-linked inheritance occurs when a gene, trait, or disorder is transferred through the Y chromosome. Since Y chromosomes can only be found in males, Y linked traits are only passed on from father to son .Certain genes are expressed either from the maternal or the paternal genome as a result of genomic imprinting, a process that confers functional differences on parental genomes during mammalian development.

***Aatmaja bhava*:** Why do in spite of same family, birth time, nutrition; people differs in their lifespan ,psycho metaphysical aspects even in twin. Why do same initial pathological features produce different diseases in different people; why do they manifest quickly in some, whereas in others there is a long latent period. Such unexplained or idiopathic factors are due to the *Atmaja bhava*. The effect of what is done during the previous life is known as *daiva*. The effect of what is done during the present life is known as *purushakara*.

All living beings possess an inherent drive to evolve, to become the highest possible expression of life and to fully realize themselves. Personal development is the willful co-operation with this natural evolutionary process. During the lower stages of human development, material ambitions and an egotistical nature are justified because *atma* (deeds of previous life)drive us on wards and upwards.

Sattvaja bhavas - Human being possess instinct and intelligence. All these things may not happen without the presence of *Manasa* (psyche). *Dauhrida Avastha* of *Garbhini* (special desires of a pregnant woman) is a very evident manifestation of the *Sattvaja Bhava*. Acharyas have clearly specified that the suppression of desires of the *Dauhridi (pregnant woman)* may influence the psychology of both the mother and fetus[14] .

The types of emotions that are developed in the womb vary. Babies in the womb are believed to be able to recognize love, happiness, sadness and stress. Talking or playing music is believed to comfort a baby in the womb, and help the baby understand the emotion of love. Hearing voices outside the womb will also help the baby determine the difference between happiness and sadness based on pitch and sound level of voices. In addition, the emotion or feeling of stress is evident in the baby if the mother is also under stress. A rise in the mother's blood pressure will trigger a response in the baby's blood pressure as well.

Satymaja –Tolerance, adaptability and acceptability

Satmyaja bhavas Influence – Embryonic, Fetal, Post-natal development

The movement of the tubal/uterine fluid, the chemical diversity, and their interaction produce a unique environment able to support embryo development and modulate gene expression. Successful implantation is an absolute requirement for the reproduction .The process by which a foreign Implantation occurs during the putative implantation window, in which the maternal endometrium is ready to accept the blastocyst, which on the other hand, also plays a specific role. From the viewpoint of the future embryo, the goal of implantation is to invade maternal tissue and gain access to nutrients essential for its survival and development. From the perspective of the future embryo, preparation consists of the expression of numerous receptors and adhesion molecules on the outside of the preimplantation blastocyst and the production of cytokines and other mediators. The process of implantation encompasses several distinct stages: apposition, adhesion, penetration, and trophoblast invasion. These steps can only take place during the window of implantation.

Although the fetal genome plays an important role in growth potential in utero, increasing evidence suggests that the intrauterine environment is a major determinant of fetal growth. For example, embryo-transfer studies show that it is the recipient mother rather than the donor mother that more strongly influences fetal growth there is also evidence that the intrauterine environment of the individual fetus may be of greater importance in the etiology of chronic diseases in adults than the genetics of the fetus.

Rasaja – Among intrauterine environmental factors, nutrition plays the most critical role in influencing placental and fetal growth. Fetal growth is also influenced by Harmon secreted from placenta, and genetic factors. At the beginning embryo gets nutrition from trophoblast, after implantation from endometrium. However as embryo grows this simple nutritive system becomes insufficient and placenta develops to take up the function of nutrition, respiration and excretion.

Nutrition is the major intrauterine environmental factor that alters expression of the fetal genome and may have lifelong consequences; namely, alterations in fetal nutrition and endocrine status may result in developmental adaptations that permanently change the structure, physiology, and metabolism of the offspring, thereby predisposing individuals to metabolic, endocrine, and cardiovascular diseases in adult life.

For instance, in twin pregnancies, a baby with fetal growth retardation is more likely to develop non-insulin dependent (type-II) diabetes mellitus than a sibling with normal fetal growth.

Intrauterine growth restriction (IUGR) refers to poor growth of a fetus while in the mother's womb during pregnancy. The causes can be many, but most often involve poor maternal nutrition or lack of adequate oxygen supply to the fetus. IUGR affects 3-10% of pregnancies. 20% of stillborn infants have IUGR. Perinatal mortality rates are 4-8 times higher for infants with IUGR, and morbidity is present in 50% of surviving infants[17].

Preventive & supportive measures :

1. Routine prenatal screening. It Reduces genetic disorders, mortality, and promotive measures for desirable qualities.

2. AGE FOR CONCEPTION:

Before pregnancy:

i. Age for conception has described as 16 years for female and 25 for male.[18] Since both the partners are full of velour and vigor at this stage , the born child also possesses these qualities.
ii. The marriages should be performed in auspicious methods.
iii. Similarly very young and old woman should not be impregnated.
iv. During impregnation diet, mode of life used by couple, psychological status of couple , specific season, odd or even days of conception, position during coitus , influences the process of embryogenesis.
v. Advice should be given to couples, to complete their intended family size preferably before the age of 35 years, for women. The incidence of chromosomal disorders and spontaneous abortion rises with maternal age after the age of 35 years. For example first pregnancy after age of 35 increases risk of breast carcinoma. Disorders due to new dominant mutations increase with advanced paternal age.
vi. Information regarding the bad effects on the developing embryo of smoking, alcohol intake, unsupervised medication, exposure to X-rays, and certain mutagens at the workplace should be made available to women prior to pregnancy.
vii. The high rate of traditional same *gotra* marriages[19] which increase the frequency of autosomal recessive disorders, can be avoided by imparting this knowledge to people.
viii. In Preconception period , man and woman should prepare the body by purificatory measures. The man properly oleated with *ghrita* having observed celibacy for one month after taking *Sali* rice with milk and woman oleated with oil , taken food prepared with oil and *masha*, having observed chastity for one month should have coitus· Probably these measures promotes healthy progeny.
ix. Supplementing the woman's diet as advised in '*Ritumati paricharya*'[20] and *'Garbhini Paricharya*'[21], with *madhura, sheeta, drava* in the first months after conception, strengthens female genital system and reduces the risk congenital malformation.
x. Environment and psychology of a woman should be favorable and health promotive. She should avoid things suppression of natural urges, thoughts likely to promote anger and fear, and use of articles likely to produce diseases during pregnancy.
xi. She should avoid daily and excessive use of sweet, sour, salty, hot, Pungent ,Astringent food items. the risk of miscarriage, congenital abnormality, and fetal growth retardation through avoidance of smoking and alcohol intake during pregnancy[22].

3. Advice regarding nutrition: Throughout the reproductive years, and particularly preconception, there is strong evidence that an optimal diet reduces the frequency of unsuccessful pregnancy outcomes and severe congenital malformations.

During pregnancy:

i. Charaka says that the pregnant woman desirous of producing the healthy and good looking child should give up non congenial diet and mode of life and protect herself by doing good conduct and using congenial diet and mode of life.

ii. Importance also has given for fulfillment of longing of mother (douhrida) as suppression of desires may influence psychology of mother and fetus.

iii. Specific dietetic regimen has prescribed for woman having normal development of fetus , so that she delivers the child possessing good health , energy or strength voice, compactness and much superior to other family members.

iv. Similarly physical strain , psychological stress, purifying procedures has described as Garbhopghatkar bhavas[23]. Several environmental agents (teratogens)can cause damage during the prenatal period.

v. These include prescription and nonprescription drugs, illegal drugs, tobacco, alcohol, environmental pollutants, infectious disease agents such as the rubella virus and the toxoplasmosis bacterium, maternal malnutrition, maternal emotional stress, and Rh factor blood incompatibility between mother and child.

vi. During each anti natal care visit these regiment should be explained to the pregnant woman along with its benefits and hazards.

Conclusion: For meeting the objective of a healthy progeny, *Ayurveda* acharyas felt the importanceof sixprocreativ (*Shadgarbhakarabhavas)* such as *Matrija* (maternal), *Pitrija* (paternal), *Atmaja* (Soul), *Rasaja* (Nutritional), *Satmyaja* (Wholesomeness), and *Sattvaja* (Psych / Mind). The conglomarance of these procreative factors is a must for healthy progeny. Healthy mother, father (good code of conduct), practice of a wholesome regimen, and a healthy mind (Psychological status of parents) play a prime role in achieving a healthy offspring, thus structuring a healthy family, society, and nation.
Each procreative factor is assigned with a certain organogenesis / functional / psychological phenomenon, to develop in the forthcoming baby, during its intrauterine life. A lag on the part of any of these procreative factors will lead to physical, functional or psychological defects, which can be contributed by the respective factor.

Preconception counseling can play a vital role not only in achieving the goal of a healthy progeny, but also in preventing congenital and genetic disorders. *Garbhakara Bhavas* are not only the factors that bring progeny, but they are the carriers of the organogenesis and other traits to the fetus. The normal transmitted traits through any of the *Garbhakara Bhavas* can be modified by the preventive / curative measures, if they are not permanent / serious / major. Antenatal care, right from the preconception to full-term delivery will certainly play a key role in the prevention of congenital and genetic disorders and promotion of good health.

If an individual's genetic mutation is in the positive (*Satvik*) direction, positive thoughts always arise in his mind and if the environment is congenial and healthy, he will be strong, both physically and spiritually. However, if the genetic mutation is in the negative (*Tamasic*) mode, the individual will be physically weak and spiritually impoverished.

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Study of *Marma* in Extremities with special reference to *Varma* (*Siddha*) Therapy

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ABSTRACT

The *Marma*s are the places where *soma* (*kapha*), *maruta* (*vāyu*) and *tejas* (*pitta*) representing three *doṣa the three Gunas, rajas, satva and tamas,* and the *bhūtatma* resides. According to *Siddha*system Varma is vital life energy points located in body and identified as 108 by siddhar. *Varmam* is the condition in which the blockage of vital energy in the body to produce the disease. This blockage occurs due to external injury, psychological stress and their effects through *doṣā*. In the siddha system of medicine varmam points has not only explained for traumatic effect but therapeutically the stimulation of surrounding*Varma* point as a treatment can restore the affected health. The study symbiotically put forward the knowledge of *marma, marmabhighatalakshana* from ayurvedic marma with therapeutic knowledge of siddha varmatherapy to cure certain diseases.

Key Words *Marma, Vaikalyakara, Siddha Varma, Manipulation Technique*

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INTRODUCTION

The word *Marma* denotes a point of vital importance in the body, a mortal, a vulnerable point or a sensitive point where vital force or life is situated. Further, it is a conglomeration of various structures like *Mamsa,Sira, Snayu, Asthi, Sandhi. Marma*[1].

According to varma theory thereare points in a body which are vital energy storing points through which vital energy is transmitted to various parts of the body and all the functions of the body are mediated. Totally 108 varma points are mentioned and these are used to stimulate energy. Heal the disease and improve the immune system. *Varma* kkalai which took birth as a method of defence developed into a martial art used for attacking enemies. This science is useful in curing disease of Nervous system including paralytic disorders and also many other chronic diseases like Arthritis, Skeletal and Muscular disorders.

AIMS AND OBJECTIVES

- To understand the marma in extremity with its anatomical location and its injury effect.
- To understand the *siddha varmam* therapy .
- To apply the *siddha varma* therapy in *marma sthana*

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MATERIALS AND METHODS

Susrthasamhitha with its commentary related with marma andsiddha literature to understand the varmam therapy, related journals, modern anatomy book text and web were referred for review of literature

LITERATURE REVIEW

Suśruta has classified these *Marma* points into various categories depending upon the period of fatality (Table 1 and 2).

Table 1 Marmas and the Period of Fatality[2]

S.No	Type of *Marma*	Period of fatality	Symptoms of injury
1	*Sadyaḥ Prāṇ*ahara*Marma*	One week	Inability to perceive senses, mental disorders and feeling of severe pain.
2	*KālāntaraPrāṇ*ahara*Marma*	15 days to one month	Depletion of tissue and death occurs due to severe pain and depletion of tissues.
3	*Viśalaghna Marma*	May kill after removal of shalya or foreign body	Injured patient survives till the removal of *śalya* or foreign body from the wound.
4	*VaikalyakaraMarma*	Disability,May kill due to severe trauma .	severe pain and disability
5	*RujākaraMarma*	No fatality but acute pain	Acute pain

Table 2 Classification According To Sadanga Śārīra[3]

ṣākhāgata marma		***Madhyaśārīra***		***Ūrdhavajatrugata***
***Bāhu marma* (11×2=22)**	*Sakthi marma* (11×2=22)	*Udara-Uras* (12)	*Prishtha (14)*	*śiras&Grīva (37)*
Kṣipra-2	*Kṣipra-2*	*Guda-1*	*Katikataruṇa-2*	*Dhamāni-4*
Talahṛdaya-2	*Talahṛdaya-2*	*Vasti-1*	*Kukundara-2*	*Mātrukā-8*
Kūrca-2	*Kūrca -2*	*Nābhi-1*	*Nitamba-2*	*Krukatikā-2*
Kūrcaśir-2	*Kūrcaśir -2*	*Hṛdayam-1*	*Pārśvasandhi-2*	*Vidhuram-2*
Maṇibandha-2	*Gulpha-2*	*Sthānamūlam-2*	*Bṛhati-2*	*Phana-2*
Indravasti-2	*Indravasti-2*	*Stanarohitā-2*	*Aṁśaphalak-2*	*Apānga-2*
Kūrpara-2	*Jānu-2*	*Apalāpam-2*	*Aṁśa-2*	*Āvarta-2*
Āni-2	*Āni-2*	*Āpastambam-2*		*Utkṣepa-2*
Ūrvi-2	*Ūrvi-2*			*śankha-2*
Lohitākṣa-2	*Lohitākṣa-2*			*Sthapāni-1*
Kakṣadhar-2	*Vitapa-2*			*Sīmānta-5*
				Śṛṅgātaka-4
				Adhipati-1

There are 44 marma in extremitities, each extremity is having 11 marma, injury occouring to these marma causes deformity. It will not have any immediate life threatening effect unless there is massive destruction of blood vessels, so prone treatment may avoid life threatening situation. Most of the marma come under the prognostic classification *vaikalyakara marma*.[4]

1. *KūrcaMarma* situatedabove *kṣipra Marma* injury produces reeling and tremor.
2. *Gulpha*- situated in ankle region, injury produces pain and limping.
3. *JānuMarma* – situated in knee joint injury produces limping.

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4. Āni*Marma* – situated in two fingers above knee joint injury producessevere swelling and stiffness.

5. *ŪrviMarma* - situated in the middle of the thigh injury leads to waisting of the muscle.

6. *Lohitākṣa* - situated at the root of the limb injury produces palsy or atrophy.

7. *Vitapa Marma* – situated between pelvis and scrotum injury produces causes infertility.

Vaikalyakara Marma[5]: Which produce deformity due to predominance of saumya (AP Maha *Bhūta* in nature) *Soma*, water supports life by its stability and cold properties. Very serious injury at this marma points cause death due to involvement of areteris and veins.

The post traumatic effect of *Vaikalyakaramarma* are leads to permanent loss of function, due to involvement of anatomical structure like soft tissue such as neurovascular bundles, muscles, skin fascia.

Classification of siddhavarmas[6]

The' *varmakannādi*-500' mentions about *varma* points of the body from head to toe

1. *Varma*points from head to neck... 25
2. *Varma*points from neck to umbilicus... 45
3. *Varma* points from umblicus to anal orifices... 09
4. *Varma*points in hand..... 14
5. *Varma*ponts in leg..... 15

In another book '*ODIVU MURIVU' Sara Sutthiram*-1200, *varmam* has classified in to two types

1. *Paduvarmangal*... 12
2. *Thoduvarmangal*... 96

Total... 108

***Varmam*energy**[7]

Varma energy is the foundation of *varmam* medical system. *Varma* energy rapidly rotate and circulates in the body just like blood flows and breath circulates in the human body.

Siddha used *varmam* as a general word to cover '*vasi*', vital air and breathe.*Varma*is an extremely subtle energy that operates inside the body. The *siddha* studied this *varmam* energy in its various aspects.

1. The energy that spreads from pineal gland to the whole body-*Manośakti*
2. The energy that spreads from surface area of brain to various parts of the body-*Per olišakti*or energy of supreme bliss
3. The energy from the *mooladharam* and spreads throughout the body-Arulshakthi or energy of Grace
4. The energy derived from food consumed - *kāyaśakti*
5. The collective energy created by the force of all the above-*Gandhaśakti*or Magnetic energy

In the above manner *siddha*s have discovered more than 20 kinds of bodily energy. The *Siddha*s cured diseases and prevented them in the long run by using these *varma*energies.

METHODS OF STIMULATION[8]

The method of stimulating the *varmam* points is called '*KaibāgamSeibāgam*'. *Kaibāgam* is the technique of selecting particular fingers to stimulate a *varmam* point, for example, touching the point using the tip of the three middle fingers (kavuli *Kālam)* is *Kaibāgam*. The stimulation or

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the application method is *Seibāgam*. The *Kaibāgam* varies based on the dimensions of the *varmam* points.

There are 12 methods of stimulation of varma points:

01. *Anukkal*_ gentle vibration
02. *Asaitthal* _ Mild vibration
03. *Pidiththal* _clenching the *varmam* point along with the muscle
04. *Nazhukkal*_ slipping pinch
05. *Thattal*_ Mild Tapping on the *varmam* point
06. *Thadaval* _gentle stroking with fingers
07. *Oondral* _ prssing the *varmam* point with a single finger.
08. *Amarthal* _Balancing the energy of the points in the bone joints
09. *Padhukkal*_ placing the energy on the *varmam* point
10. *Karakkal*_Transferring energy from one point to the other
11. *Pinnal* (braiding) _strengthening one nerve as that of the other
12. *Yeanthal* _ touching and lifting the *varmam* point

All these 12 methods can be executed on a *varmam* point. The *siddha*s had propounded that the application of these 12 techniques on a single *varmam* point is capable of curing different diseases (Table 3).

Table 3 Compartive Study of Vaikalyakara *Marma* with Siddha System of *Varma*

S.NO	*MARMA*	*VARMA*	MODERN COREELATION	Significance in ayurveda	Siddha-Significance in treatment
1.	*Kūrca* (upper extyrimity)	*Mozi piragalvarma kavuli kalam thatchinaikalam ullankaivelli Marma*	Carpal, meta Carpal, inter Carpal ligament	Injury produces shivering and deformity of extrimity	Gives energy to the fingers Improves memory
2	*Kūrca* (lower extrimity)	*Viruthi kalam, paddankal varmaullankalvellaivarma*	Tarsal, metatarsal, intertarsal ligament	Injury produces shivering deformity of lower extremity.	Regulates blood supply to the lower limb, cures nervous disorders, regulate body heat
3	M*ānibandha*(wrist)	*Maṇibandha, choodathrai, theethavarma*	Wrist joint	Pain, stiffness and deformity of joint	Strengthens the forearm and finger
4	*Gulpha*(ankle)	*Kanpugaichalvarma uppukutirvarma*	Ankle or talocrural joint	Pain, rigidity or limping of lower extremity	Strengthens upper and lower limb reduces heat in the eyes
5	*Kūrpara*(elbow)	*Kaimootuvarma*	Elbow joint	Restricted movement	Manages all disorder of the elbow joint
6	*Jānu*	*Kallmuttuvarma*	Knee joint	Limping	Relieves knee related pain
7	*Āni* (upper extrimity)	*Chavvuvarma*	Tendon of triceps	Sweeling, stiffness of upper extremity	Relieves all kind of painin upper extremity
8	*Āni* (lower extremity	*Ulthodaivarma*	Tendon of	Swelling	Reduces pain in the

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			quadriceps	stiffness of lower extremity	lower limb, and regulates blood flow
9	Bahvi(upper extrimity)	*Aamai kalam*	Brachial vessels	Blood loss, and muscular atrophy	
10	*Ūrvi* (lower extrimity)	*Aamai kalam*	Femoral vessel	Blood loss,muscular atrophy	Strengthens the thigh
11	*Lohitakṣa*(upperextrimity	*Kai chulluku*	Axillary vessels and brachial plexus	Paralysis, muscular atrophy	Reduces the fatigue in the upper limb
13	*KakṣadharaMarma*	*Pirathari Marma, yanthi Marma*	Brachial plexus	paralysis	Strengthens the lower limb and improves health condition, regulates body temperature and cures ear diseases

DISCUSSION

This is a matter of observation that most of the *Marmas* that are situated in the extremities come under the classification of vaikalyakara (deformity). The Vaikalyakara Marma has the '*AP*'mahabhuta in it. So injury to this marma will not cause any fatal effect as it has 'soma guna' which will sustain life but there will be disability. They are not fatal, even though there is involvement of vessels. It is due to specific anatomy of the region. The structure involved here is soft tissue such as neurovascular bundles, muscles, skin fascia. The fracture of bone is also an emergency for the purpose of *vaikalyata and ruja*.s. The observation of trauma described in modern surgery has been highlighted in *Suśruta* for the first time and holds such injuries less significance of vital structure in head neck and trunk.

The siddha *varmas* are divided in two types- *padu varma* and thodu *varma.* The place where energy is blocked is called *paduvarma.* They are 12 in number. Points where energy has to struggle to get through are called as thodu *varmam* they 96 in number. Therefore total 108 *varma* according to *siddha* system. Each *padu varmam* is the junction of *thodu varmam* sites. *Paduvarmam*s are nothing but meridians through the entire body.

Siddha system of medicine says *varma* is said to be the blockage of vital energy in the body. This blockage may be caused due to external injuries or psychological stress or due to the effect of doshas.The changes occurringin the body on being hit at some specific points in the body directly or indirectly with a particular force is called *varmam.* The changes occurring in the body vary with the force of hitting time or duration and the physical strength of victim. Pain swelling, bleeding ,muscle spasam of limbs, loss of function of the organs, vomiting, protrusion of the tongue, heraniation of the testicles, protruded eye ball, breathlessness, fainting and death may occur. Though *varma* text mentions the existence

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of 800 *varma*points in the body, among them 108 varma points serve as the basis of art of *vamams*. Among them *paduvarmas* are the points which are connected with the nerves of the brain directly and indirectly and aid in alleviating brain related disorder. All the mentioned methodologies are performed by stimulation of *varma* point that are found on the surface of the body

The method of stimulating the *varmam* points is called '*KaibāgamSeibāgam*'. *Kaibāgam* is the technique of fingers to stimulate a *varmam* point. For example, touching the point kavuli *Kālam* using the tip of the three middle fingers is *Kaibāgam*. The stimulation or the application method is *Seibāgam*. The *Kaibāgam* varies based on the dimensions of the *varmam* points.The method of stimulation are gentle vibration, Mild vibration, clenching the *varmam* point along with the muscle, slipping pinch, Mild Tapping on the *varmam*point,gentle stroking with fingers pressing the *varmam* point with a single finger, Balancing the energy of the points in the bone joints, placing the energy on the *varmam* point,Transferring energy from one point to the other,strengthening one nerve as that of the other,touching and lifting the *varmam* point.All these 12 methods can be executed on a *varmam* point. The *siddha*s hadpropounded that the application of these 12 techniques on a *varmam* point is capable of curing various diseases.

CONCLUSION

Marma is the anatomical point where six structure collectively present which is the location of prana, where severe injury produces deformity, loss of movement, even some time death. It is the weak vital point where energy (life) present.

The basic principle of siddha *varma* medical system is to regularize *varmam* energy and there by safeguard the body and life by different types of external internal treatment .The energy filled siddha Varma points perform the fundamental functions receiving and supplying energy to the body.. When these functions are disrupted, the body succumbs to diseases. Proper stimulation of these points escalates the efficiency of these functions and helps the body become hale and healthy. These stimulation methods can be successfully used to treat the injured marma in the extrimities which will be come under the classification of *Vaikalyakara (deformity).* Āyurvedic principle of *Marma* Shastra and principle of treatment of Siddha *Varma m*edicine are similar, in Āyurveda the explanation of marma based on more in prognostic way of injury while in Siddha medicine the points of varma explanation is based on treatment methodologies. If knowledge of both medicinal systems regarding *Marma* and *Varma* are shared together efficacy of the treatment of traumatic chronic painful condition will be improved.

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