

Original article

# CLINICAL EFFICACY OF PADABHYANG (FOOT MASSAGE) AS CHKSHUHYA (EYE SIGHT PROMOTER) W.S.R TO TIMIRA-REFRACTIVE ERROR (PRATHAM & DWITIYA PATALGATA)

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## ABSTRACT

In Ayurveda the eye is clarified as the most essential among all the indriyas (sensory organs), however because of changed way of life and quick pacing time we are experiencing such huge numbers of scatters, among them eye issue is most imperative as eye is the window of wellbeing. Our old acharyas (ancient scholars) have clarified about the different every day routine to be pursued for keeping up eye wellbeing, Padabhyang (foot massage) is one of them referenced in Ayurvedic dincharya (daily routine) and it has been depicted as Chakshushya (eye sight promoter) implies it improves our vision. So thinking about it, Padabhyang (foot massage) with and without snehan (oleation) was chosen for the present clinical preliminary to discover its adequacy in Timira (refractive error), result were statistically significant in subjective parameters but no change was found in objective parameter. We know, this restricted investigation has not secured every one of the angles but rather clinical preliminaries show empowering results. More study is necessary on large sample to draw the final inferences.

**Keywords:** Ayurveda, Padabhyang (foot massage), Chakshuya (eye sight promoter), Timira (refractive error)

## INTRODUCTION

The first and foremost aim of Ayurveda is Swasthasya Swasthya Rakshanam (preservation of the health). Ayurveda has given more stress on the preservation of the health and curing of disease. To get a perfect physical and mental health it is essential to follow a prescribed regimen everyday which includes personal hygiene, care of various organs and exercise. There are the references about Padabhyanga (foot massage) in Brihattrayee (classical texts) as a dinacharya (daily routine) aspect and described its benefits

- In Charaka Samhita (Charak Samhita, Vol-I, 1994, p.90-92), there is explanation about Padabhyanga (foot massage)
- In Sushruta Samhita (Sushruta Samhita, Vol-I, 1992, p.109), Sushruta explained about Padabhyanga
- In Astanga Sangraha (Astanga Sangraha, Vol-I, 1996, p.46), Vriddha Vagbhata describes about Padabhyanga
- In Astanga Hrudaya (Astanga Hrudaya, Sutra Sthan, 2003, p.30), Vagbhata explained about daily application of oil necessary for specially three organs, Sira (Head), Karana

(Ears), Pada (Foot)

- In Kaidev Nighantu (Kaidev Nighantu, 1979, p.513), guna of Padabhyanga is explained in detail
- In Bhavaprakash (Bhavaprakash, 1999, p.115), Padabhyanga is explained

Due to Padabhyanga skin becomes soft, beautiful, increases bala of legs. It reduces Padsphutan (Cracking of feet), Srama (Fatigue), Sthambha (Stiffness), Sankocha (Contraction or Flexion). It improves eye sight, endows the person with sound sleep during night. So our ancient Acharyas advised daily Padabhyanga as a part of dinacharya, to become a Swastha (Healthy). A beneficial description of effects of foot massage is written in Vagbhata. According to him, there are 4 important nerves in the sole of the feet which are connected to the head. Because of heat, friction and excessive pressure on the feet, these nerves get affected as a result of which eyesight of a person gets reduced. But after giving massage to the soles, a person never suffers from eye diseases. Also one must note important basic principle that feet (karmendriya) and eye (gyanendriya) both are related with element of fire. Hence although they are far apart from each other, they are interconnected with each other (Ranade & Rawat, 2000, p.102-103). Timira (Refractive error) is one among Drishtigata Rogas (Eye Disorders), which are 12 as per Acharya Shusurta (Sushruta Samhita, Uttaratantra, 2006, p.13) and 27 as per Acharya Vagbhata (Astanga Hridaya, Uttarasthan, 2011, p.670). Among all these disorders of vision Timira is said to be "Paramdarun Vyadhi - difficult to cure" (Sushruta Samhita, Uttaratantra, 2006, p.9) as it is progressive and ultimately ends in blindness. Various treatment modalities like Samshodhana

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Chikitsa – Purifactory treatment (Virechan karma – Purgative process), Kriyakalpa (Treatment procedures used in the management of Eye Diseases), Nasya (Instillation of herbal oils, juices or powders through the nasal route), Dhoom (Medicated inhalation), Tarpana (Ayurvedic procedure in which a medicated ghee is retained over the eyes for a specified duration of time), Putpaka (A particular method of preparing drugs-Closed Heating) and Anjana (Corrylium- A medicinal preparation which is applied on the lower palpebral conjunctiva or the cul-de-sac) are described in detail for Timira (Refractive error) but in present clinical study we have selected the Padabhyang (Foot Massage) to find out its efficacy.

## AIMS AND OBJECTIVES

- To Evaluate the role of Padabhyanga (Foot massage) with Snehana (Oleation therapy) on Timira w.s.r. to Ammetropia.
- To Evaluate the role of Padabhyanga (Foot massage) without Snehana (Oleation) on Timira w.s.r. to Ammetropia.

## MATERIALS AND METHODS

The volunteers presenting with signs and symptoms of Timira-Ammetropia were selected irrespective of their sex, religion, occupation, education etc. Total 20 volunteers (40 eyes) were recruited for the study from HAMC & Hospital, Dehradun. An elaborative case taking performa was specially designed for the purpose of incorporating all aspects of the disease on Ayurvedic and modern parlance.

Informed and written consent were taken from all the registered patients for the trial.

### a) Sampling technique

Patients were registered under two main groups with refractive error like Myopia, Hypermetropia and Astigmatism by random sampling method.

**Group A:** Padabhyanga with Snehana group (Foot massage with Oleation) - In this Group Padabhyanga with Til Tail (Seasme oil) Snehana was performed once daily for 15 minute for four weeks.

**Group B:** Padabhyanga without Snehana group (Foot massage without Oleation) - In this Group Padabhyanga without Til Tail Snehana was performed once daily for 15 minute for four weeks.

### b) Inclusion Criteria

- Sign and Symptoms showing Prathama and Dwithiya Patalagata Timira.
- Age : 10-40 year
- Functional Refractive errors in Myopia, Hypermetropia and Astigmatism.
- Patients with Asthenopic Symptoms like headache, watering, ocular pain and fatigue.

### c) Exclusion Criteria

- Patients having any lenticular or Corneal opacity and any other known ocular pathology
- Patients having any systemic diseases like HTN, DM, RA, and Gout etc.

### d) Investigations

Following investigations was carried out in order to rule out any systemic disease-

- Routine hematological: Hb, TLC, DLC, ESR
- Biochemical: Blood sugar (F), Serum Cholesterol
- Serum uric acid
- RA Factor

### e) Duration: 28 days

**f) Follow Up:** Two follow ups after the completion of course.

**g) Assessment Criteria:** The clinical trial was assessed for its efficacy on the basis of following subjective and objective criteria.

Table 1

Subjective Parameter	Objective Parameter
Avyakta Darshana (Blurred vision)	Visual acuity with snellen's chart
Shirobhitapa (Headache)	
Netrasrava (Watering)	
Netrayasa (Eye strain)	
Netradaha (Burning sensation)	

Subjective symptoms was assessed with the help of the following scoring pattern

Table 2. Subjective Parameters

Scoring	Avyakta Darshan (Blurred vision)	Shirobhitapa (Headache)	Netrasrava (Watering)	Netrayasa (Eye strain)	Netradaha (Burning sensation)
0	No such problem	No headache	No watery discharge	After >6 hours of near work	No burning sensation in eyes
1	Occasional blurring or disturbance of vision	Very occasional headache	Mild watery discharge	After 4 – 6 hours of near work	Occasional burning sensation in eyes
2	Regular blurring without disturbing routine work	Irregular attacks of frequent headache	Moderate watery discharge	After 2 – 4 hours of near work	Regular burning sensation in eyes without disturbing routine work
3	Regular blurring disturbing day to day work	Regular headache	Severe watery discharge	Before 2 hours of near work	Regular burning sensation in eyes with disturbing routine work

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## Objective Parameter -Visual Acuity

It was recorded as numerical convention and later converted into percentage as per method of Kaith Lyle *et al.*, 1985.

**Table 3.** Snellen's test types

Distant vision chart reading	Efficiency Percentage
6/60	- 00.00
6/36	- 20.00
6/24	- 48.00
6/18	- 64.00
6/12	- 83.00
6/9	- 91.50
6/6	- 100.00

## h) Statistical analysis:

The parameters in both the groups were analyzed in terms of median for qualitative data and subjected to Wilcoxon's signed rank-Test (W-value) for evaluating the effect of therapy before and after treatment and finally compare both the groups by using Mann-Whitney U test, results were incorporated in terms of probability (p)

- Highly significant for  $p < 0.001$
- Significant for  $p < 0.01$  and
- Insignificant for  $p > 0.05$ .

i) Overall effect of therapy: The assessment was done by adopting the following scoring pattern for subjective symptoms

- Cured: 100 % relief in signs and symptoms and no recurrence during follow up study will be considered as cured.
- Marked improvement: More than 75% improvement in signs and symptoms will be recorded as marked improvement.
- Moderate improvement: 51% to 75% improvement in signs and symptoms will be considered as moderate improvement.
- Mild improvement: 26% to 50% improvement in signs and symptoms will be considered as mild improvement.
- Unchanged: Up to 25% reduction in signs and symptoms will be noted as unchanged.

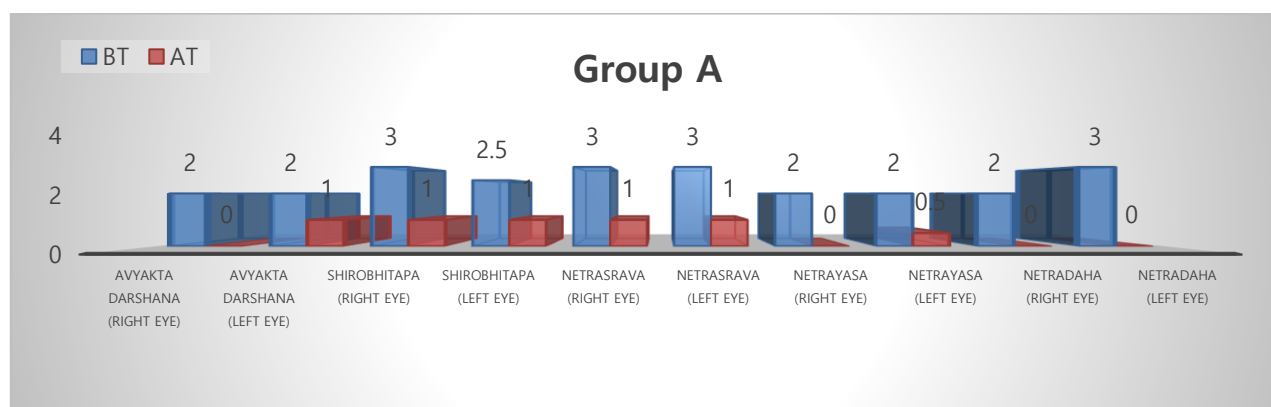
## OBSERVATION & RESULTS

### a) Effect of Padabhyang With Snehan on Subjective Parameters (Foot Massage with Oleation)

In Group A, Statistically significant results ( $p$ -value $<0.01$ ) were found in Avyakta Darshana (Blurred vision) in right & left eyes (% relief 85.0% & 69.6%), Shirobhitapa (Headache) in right & left eyes (% relief 76.0 % & 72.0%), Netrasrava (Watering) in right & left eyes (% relief 73.1% & 74.1%), Netrayasa (Eye strain) in right & left eyes((% relief 83.3 & 78.3%) and Netradaha (Burning sensation) in right & left eyes (% relief 86.4% & 84.6%).

**Table 4.** Group A

Group A	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
AvyaktaDarshana (Blurred vision-Right Eye)	2	0	-2.859 <sup>a</sup>	0.004	85.0	Sig
AvyaktaDarshana (Blurred vision-Left Eye)	2	1	-2.724 <sup>a</sup>	0.006	69.6	Sig
Shirobhitapa (Headache-Right Eye)	3	1	-2.850 <sup>a</sup>	0.004	76.0	Sig
Shirobhitapa (Headache-Left Eye)	2.5	1	-2.972 <sup>a</sup>	0.003	72.0	Sig
Netrasrava (Watering-Right Eye)	3	1	-2.850 <sup>a</sup>	0.004	73.1	Sig
Netrasrava (Watering-Left Eye)	3	1	-3.162 <sup>a</sup>	0.002	74.1	Sig
Netrayasa (Eye strain-Right Eye)	2	0	-2.873 <sup>a</sup>	0.004	83.3	Sig
Netrayasa (Eye strain-Left Eye)	2	0.5	-2.972 <sup>a</sup>	0.003	78.3	Sig
Netradaha (Burning sensation-Right Eye)	2	0	-3.051 <sup>a</sup>	0.002	86.4	Sig
Netradaha (Burning sensation-Left Eye)	3	0	-2.972 <sup>a</sup>	0.003	84.6	Sig



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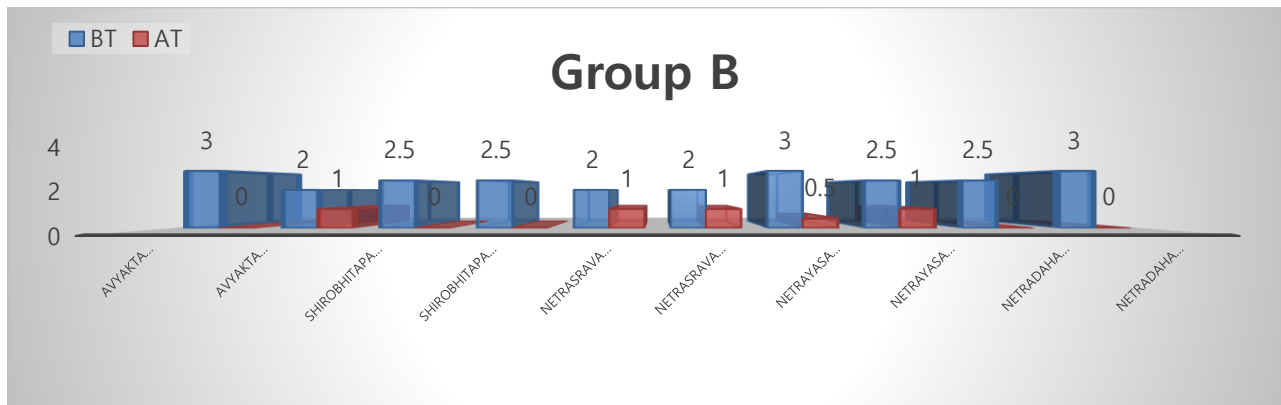
**b) Effect of Padabhyang Without Snehan on Subjective Parameters (Foot Massage without Oleation)**

In Group B, Statistically significant results (p-value<0.01) were found in Avyakta Darshana (Blurred vision) in right & left eyes (% relief 84.6% & 70.8%), Shirobhitapa (Headache) in

both eyes (% relief 84.0 % ), Netrasrava (Watering) in both eyes (% relief 75.0% ), Netrayasa (Eye strain) in right & left eyes ((% relief 80.8 & 76.0%) and Netradaha (Burning sensation) in right & left eyes (% relief 88.0% & 85.2%).

**Table 5** Group B

Group B	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
AvyaktaDarshana (Blurred vision-Right Eye)	3	0	-2.877 <sup>a</sup>	0.004	84.6	Sig
AvyaktaDarshana (Blurred vision-Left Eye)	2	1	-2.919 <sup>a</sup>	0.004	70.8	Sig
Shirobhitapa (Headache-Right Eye)	2.5	0	-3.051 <sup>a</sup>	0.002	84.0	Sig
Shirobhitapa (Headache-Left Eye)	2.5	0	-3.051 <sup>a</sup>	0.002	84.0	Sig
Netrasrava (Watering-Right Eye)	2	1	-2.842 <sup>a</sup>	0.004	75.0	Sig
Netrasrava (Watering-Left Eye)	2	1	-2.877 <sup>a</sup>	0.004	75.0	Sig
Netrayasa (Eye strain-Right Eye)	3	0.5	-2.913 <sup>a</sup>	0.004	80.8	Sig
Netrayasa (Eye strain-Left Eye)	2.5	1	-2.850 <sup>a</sup>	0.004	76.0	Sig
Netradaha (Burning sensation-Right Eye)	2.5	0	-2.877 <sup>a</sup>	0.004	88.0	Sig
Netradaha (Burning sensation-Left Eye)	3	0	-2.859 <sup>a</sup>	0.004	85.2	Sig



**c) Comparison between group A and group B (Subjective Parameters)**

Subjective Parameters	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value	Result
AvyaktaDarshana (Blurred vision-Right Eye)	Group A	10	8.55	85.50	30.500	0.102	NS
	Group B	10	12.45	124.50			
	Total	20					
AvyaktaDarshana (Blurred vision-Left Eye)	Group A	10	10.20	102.00	47.000	0.795	NS
	Group B	10	10.80	108.00			
	Total	20					
Shirobhitapa (Headache-Right Eye)	Group A	10	9.65	96.50	41.500	0.426	NS
	Group B	10	11.35	113.50			
	Total	20					
Shirobhitapa (Headache-Left Eye)	Group A	10	9.10	91.00	36.000	0.088	NS
	Group B	10	11.90	119.00			
	Total	20					

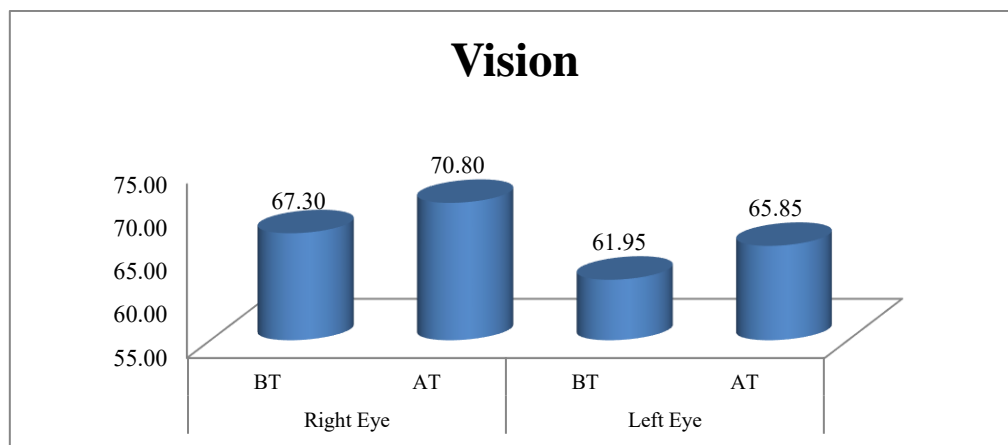
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Netrasrava (Watering -Right Eye)	Group A	10	10.90	109.00	46.000	0.744	NS
	Group B	10	10.10	101.00			
	Total	20					
Netrasrava (Watering -Left Eye)	Group A	10	11.50	115.00	40.000	0.278	NS
	Group B	10	9.50	95.00			
	Total	20					
Netrayasa (Eye strain -Right Eye)	Group A	10	10.10	101.00	46.000	0.721	NS
	Group B	10	10.90	109.00			
	Total	20					
Netrayasa (Eye strain -Left Eye)	Group A	10	10.20	102.00	47.000	0.788	NS
	Group B	10	10.80	108.00			
	Total	20					
Netradaha (Burning sensation Right Eye)	Group A	10	9.15	91.50	36.500	0.178	NS
	Group B	10	11.85	118.50			
	Total	20					
Netradaha (Burning sensation Left Eye)	Group A	10	9.90	99.00	44.000	0.588	NS
	Group B	10	11.10	111.00			
	Total	20					

For comparison between group A and group B, we have used Mann-Whitney U test. From above table we can observe that p-values for all parameters are greater than 0.05. Hence we

conclude that there is no significant difference between group A and group B.

**d) Effect of Padabhyang With Snehan on Objective Parameters (Foot Massage with Oleation)**



**Table 7.** Group A - Visual Acuity

Group A		Mean	N	SD	SE	t-Value	P-Value
Right Eye	BT	67.30	10	29.60	9.36	-1.314	0.222
	AT	70.80	10	29.40	9.30		
Left Eye	BT	61.95	10	30.63	9.69	-1.348	0.211

Since observations are quantitative, we have used t-test to test the significance. From above table we can observe that P-Value

is greater than 0.05. Hence we conclude that there is no significant change observed.

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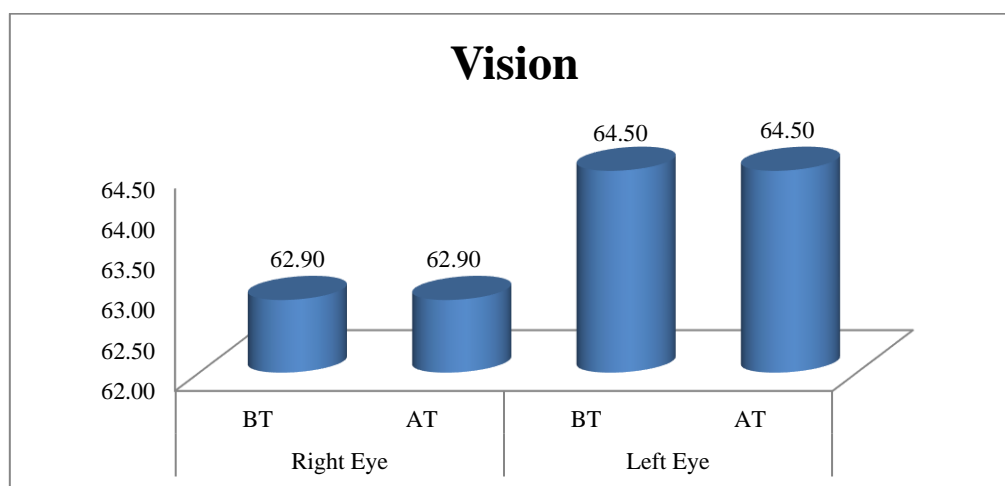
## e) Effect of Padabhyang Without Snehan on Objective Parameters (Foot Massage without Oleation)

Since observations are quantitative, we have used t-test to test

the significance. From above table we can observe that P-Value is greater than 0.05. Hence we conclude that there is no significant change observed.

**Table 8.** Group B – Visual Acuity

Group B		Mean	N	SD	SE	t-Value	P-Value
Right Eye	BT	62.90	10	26.56	8.40	0.000	1.000
	AT	62.90	10	26.56	8.40		
Left Eye	BT	64.50	10	28.35	8.97	0.000	1.000
	AT	64.50	10	28.35	8.97		



## f) The Overall Effect Of Therapy For Individual Group After Trial

**Table 9.**

Effect	Group A (n= 10)	Group B (n= 10)
Cured	1 (10%)	0 (0%)
Marked Improvement	3 (30%)	2 (20%)
Moderate Improvement	3 (30%)	4 (40%)
Mild Improvement	1 (10%)	2 (20%)
Unchanged	2 (20%)	2 (20%)
Total	10 (100%)	10 (100%)

It was observed that in group A, 10% patients showed complete relief and 70% patients showed improvement and 20% remained unchanged, while in group B 80% patients showed improvement and 20% remained unchanged.

## DISCUSSION & CONCLUSION

In benefits of Padabhyang (Foot massage), our ancient acharyas described that it helps to improve our vision and also told that there is link between Pada (foot) and Netra (Eye). Both these can be considered as two poles of our body and still drug instilled from one pole or Abhyang (Massage) applying from one pole i.e Pada can reach to other pole i.e Netra. In nadi vigyana, nadi

darpana it has been quoted that there are 10 nadi (Nerves) in head among which 2 are related to eyes (Nadi Darpan, 1994, p.26)

Gandhari- surrounds Ida nadi (Type of nerve), which extends from paada and ends in left eye.

Hsatijihwa- surrounds Pingala nadi (Type of nerve), which extends from paada and ends in right eye.

Acharya vagbhata also mentioned, 2 siras (Vessels) situated in the centre of foot which is connected to the eyes (Ashtanga Hridaya, Uttarasthan, 2000, p.956, 834).

During padabhyanga, these nadi's are stimulated and leading to chakshusya effect. As per Ayurveda Pada and Netra both have its origin from Vaikarika- modified source of creation and Rajas Ahamkara-passionate source of creation (Sushruta Samhita, Sharirasthan, 2009, p338) also both develop at same month in intrauterine life (Sushruta Samhita, Sharirasthan, 2009, p352). Thus by applying therapy on Pada we can have its effects on Netra because of their same origin. The science of reflexology states that the sole of feet has connections with various organs of the body. Hence proper foot massage at respective site on the foot with specific oils prevents and cures diseases. According to the science, various organs like heart, lungs, kidney, brain, intestines all can be stimulated by feet massage. Padabhyanga, even though a small procedure the benefits of this procedure is broad spectrum i.e., from locally to systemic effect. So, padabhyanga as a part of dinacharya and also in vyadhita (Diseased) condition is beneficial. Based on the prakruti (Genetic Constitution) of patient, dosha (Biological energies in Ayurveda) involved in vyadhi (Disease), medications and

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duration of procedure can be varied to get desired effect. Thus padabhyanga rather practicing only as a part of sarvanga abhyanga (Whole body massage), need to be practiced as an individual procedure for the prevention of disease and promotion of health.

The present clinical study has been undertaken to explore and to see the efficacy of 'Padabhyang' as Chakshuya with and without snehan (Massage as eye sight promoter with or without Oleation). The study has revealed that a maximum numbers of patients had significant results in their signs and symptoms.

## CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

## SOURCE OF SUPPORT

NIL

## ETHICAL APPROVAL

No ethical approval is required as only foot massage with or without Oleation have been used in the study.

## ACKNOWLEDGEMENTS

None

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