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A study on standardization of *Bindu Pramana* in *Nasya Karma*

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ABSTRACT

Panchakarma is a unique system of medicine comprising of five specialised purificatory procedures, the action of which is fruitful only if it is administered by giving due importance to *Matra* and *Kala. Matra*, the concept of dose fixation is of utmost importance in the practice of *Panchakarma* in order to get optimum therapeutic effect. *Nasya Karma* occupies a special place in the domain of *Panchakarma* as it deals with the organ of high importance, the "*Shiras*". In the Classics, there is description regarding *Bindu Pramana* for the administration of *Nasya Karma* which varies from individual to individual as it is to be measured for each and every individual by dipping the first two phalanges of index finger in *Sneha Dravya*. But, the current practice of *Nasya Karma* is done by administering *Nasya Dravya* in the form of drops rather than adopting the concept of *Bindu Pramana*. In this regard, an observational study was conducted on 30 subjects as an attempt to standardize the concept of *Bindu Pramana* and the results were documented in relation to age, gender, height, weight, BMI, circumference and height of middle and distal phalanx of index finger.

Key words: *Nasya Karma, Bindu Pramana, Sneha Dravya, Standardization.*

INTRODUCTION

Panchakarma therapy primarily aims at cleansing the body of its accumulated impurities, toxins or stagnant *Malas* and nourishing the body tissues. Among the five *Panchakarma* purification procedures, *Nasya* is said to be effective in curing the diseases of *Urdhwajatru. Nasya Karma* is a therapeutic measure where the medicated *Sneha*, *Kwatha, Swarasa, Churna* etc. are administered through the nose.[1] For the treatment of the diseases of head, the expert physician should administer *Nasta-Karma* because nose is the gateway of the head. The medicine administered through the nose spreads into the different parts of the head and cures the diseases located there.[2] In the present era, due to lack of time, to prevent contamination, easy way of administration, easy measurement, time constraint, difficulty in following *Pariharya Vishayas, Nasya Karma* is administered on drop basis. In order to achieve the optimum therapeutic effect, *Nasya Karma* is administered in *Bindu Pramana* if not desired effect is not achieved. Hence, individual oriented planning of *Nasya Karma* treatment is done a day before the commencement of treatment, by taking a separate sample of specified *Taila* in a beaker and the subject is asked to dip the distal two phalanges of Index finger in specified *Taila* and the amount of *Taila* obtained is measured. There after, the dosage of *Bindu* is calculated as per the *Bheda* of *Nasya Karma*. And the same dosage is administered throughout the course of *Nasya Karma.* So in this regard, this study was

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adopted to fix the dose rather than generalizing a dosage based on the different age group, gender, BMI, circumference and height of middle and distal phalanx of index finger so that it yields optimum therapeutic effect.

Definition of *Bindu*

Bindu is a unit of measurement for the dose of *Dravya* to be used for *Nasya*. *Bindu* is defined as the total amount of fluid that dribbles down at one stretch after immersing the distal two inter-phalangeal joints of index finger in any liquid media and taken out the same.[3]

Bindu Pramana for *Sneha Nasya* as per different *Acharya's*.

In the present study, *Avapeeda Nasya, Dhmapana Nasya, Dhuma Nasya* are not considered and the calculation of *Bindu Pramana* was done only for *Sneha Nasya* as the *Dravya* taken was *Moorchita Tila Taila*.

Difference of opinion among *Acharya's* regarding the fixation of dosage of *Nasya Karma* is mentioned below:

Classification of *Bindu Pramana* of *Snehana Navana*.

Sushruta Samhita[4]

- *Heena Matra - 8 Bindu*
- *Madhyama Matra - Shukti (32 Bindu)*
- *Uttama Matra - Pani Shukti (64 Bindu)*

Astanga Sangraha (*Marsha Nasya*)[5]

- *Heena Matra - 6 Bindu*
- *Madhyama Matra - 8 Bindu*
- *Uttama Matra - 10 Bindu*

Sharangadhara Samhita[6]

- *Adhama Matra - 1 Shaana (8 Bindu)*
- *Madhyama Matra - 4 Shaana (32 Bindu)*
- *Mukhya Matra - 8 Shaana (64 Bindu)*

Bhavaprakasha[7]

- *Heena Matra - 1 Shaana (8 Bindu)*
- *Madhyama Matra - 4 Shaana (32 Bindu)*
- *Mukhya Matra - 8 Shaana (64 Bindu)*

Chakradatta[8]

- *Heena Matra - 8 Bindu*
- *Madhyama Matra - Shukti (32 Bindu)*
- *Mukhya Matra - Panishukti (64 Bindu)*

Vangasena Samhita[9]

- *Prathama Matra - 8 Bindu*
- *Dwiteeya Matra - Shukti (32 Bindu)*
- *Triteeya Matra - Panishukti (64 Bindu)*

Kashyapa Samhita[10]

- *Navana Nasya - 2-3 Bindu Pramana*
- *Pratimarsha Nasya - 2 Bindu Pramana*

Classification of *Bindu Pramana* of *Shodana Navana*.

Sushruta Samhita (according to *Bala*)[11]

- *Heena Matra - 4 Bindu*
- *Madhyama Matra - 6 Bindu*
- *Uttama Matra* - 8 Bindu

Sharangadhara Samhita[12]

- *Antya Matra - 4 Bindu*
- *Madhyama Matra - 6 Bindu*
- *Mukhya Matra - 8 Bindu*

Bhavaprakasha[13]

- *Alpa Matra - 4 Bindu*
- *Madhya Matra - 6 Bindu*
- *Mukhya Matra - 8 Bindu*

Vangasena Samhita (according to *Bala*)[14]

- *Alpa Matra - 4 Bindu*
- *Madhya Matra - 6 Bindu*
- *Mukhya Matra - 8 Bindu*

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Objectives of the Study

- To standardize the dose of One *Bindu Pramana*.

Materials and Methods

Intervention

Moorchita Tila Taila was taken in a transparent beaker in order to measure the *Bindu Pramana* of the subject for *Nasya Karma*. The subject was asked to dip his or her first two phalanges of index finger (distal and middle phalanx) in the *Moorchita Tila Taila* and place the same in the empty transparent beaker immediately after dipping. The total amount of *Taila* dribbled down in a beaker at one stretch was measured using graduated pipette. And the measurement obtained was considered as the *Bindu Pramana* of that individual for that *Sneha Dravya* as per classics.

Inclusion Criteria

- Subjects of either gender
- Healthy volunteers in between the age group of 21-70.

Exclusion Criteria

- Subjects with wound, fracture and any deformity of index finger

Study Design

- An open label single arm, observational Study.

Materials required

- *Moorchita Tila Taila*
- Beaker
- Graduated micropipette

Observations

A total number of 30 subjects were registered for the study on either gender, in between the age group of 21-70. Their height, weight, BMI, circumference of distal phalanx, middle phalanx and height of middle and distal phalanx in total were measured and the dose obtained was measured.

SN	Age	Gender	Ht in mtrs	Wt in kgs	BMI (kg/m^2)	Circumference of middle phalanx in cm	Circmference of distal phalanx in cm	Ht of middle & distal phalanx in cm	One *Bindu* obtained in ml
1.	64	M	1.7	64	22.1	6.4	5.6	5.5	0.6
2.	32	F	1.67	80	28.7	6.1	4.9	5.1	0.5
3.	48	M	1.76	45	24.2	6.8	5.6	6.1	0.7
4.	70	M	1.82	78	23.5	7.1	5.9	5.2	0.8
5.	47	F	1.5	60	26.7	6.2	5.2	5.2	0.5
6.	48	F	1.6	68	26.6	5.7	4.5	5.2	0.5
7.	70	M	1.58	66	26.4	7.5	6.2	5.6	0.7
8.	43	M	1.52	57	24.7	5.6	4.6	4.6	0.5
9.	45	F	1.48	60	27.4	6	5.4	5	0.5

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10.	42	F	1.52	64	27.7	5.8	5.2	5.2	0.5
11.	25	F	1.65	69	25.3	6.3	4.9	4.7	0.5
12.	26	F	1.76	60	19.4	6	5.6	5.8	0.6
13.	23	M	1.73	70	23.4	6.4	5.7	5.4	0.6
14.	24	F	1.4	40	20.4	5	4.2	4.3	0.4
15.	21	M	1.6	50	19.5	6.4	5.8	5.5	0.6
16.	27	F	1.65	60	22	6.1	4.7	4.8	0.5
17.	26	F	1.66	68	24.7	6.2	4.8	4.7	0.5
18.	26	F	1.65	48	17.6	5.6	4.8	5	0.4
19.	27	F	1.66	80	29	6.8	5.8	6.1	0.7
20.	21	F	1.42	42	20.8	5.1	4.5	4.7	0.4
21.	38	F	1.52	46	19.9	5.6	4.8	4.6	0.5
22.	28	F	1.58	64	25.6	6	5.2	5.1	0.5
23.	23	F	1.48	44	20.1	5.3	4.6	4.5	0.4
24.	30	F	1.58	52	20.8	6.2	5.2	5.4	0.6
25.	34	F	1.68	64	22.7	6.0	5.6	5.8	0.6
26.	40	M	1.6	68	26.6	6.2	5.4	5.5	0.6
27.	38	M	1.66	70	25.4	6.1	5.5	5.4	0.6
28.	48	F	1.52	52	22.5	6.1	5.3	5.5	0.6
29.	50	F	1.56	80	32.9	6.4	5.6	5.7	0.7
30.	34	M	1.6	50	19.5	5.9	5	5.1	0.5
Mean			1.60	60.63	23.87	6.09	5.20	5.21	0.55ml

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RESULTS

The mean of *Bindu Pramana* obtained from all subjects were calculated which accounted to 0.55ml.

Table 1: Showing the distribution of subjects based on gender in relation to standardization of *Bindu Pramana*.

Gender	No. of subjects	Mean of *Bindu Pramana* obtained
Male	10	0.62ml
Female	20	0.52ml

Table 2: Showing the distribution of subjects based on age in relation to standardization of *Bindu Pramana*.

Age in yrs	No. of subjects	Mean of *Bindu Pramana* obtained
21-30	13	0.51ml
31-40	6	0.55ml
41-50	8	0.56ml
51-60	0	-
61-70	3	0.7ml

Table 3: Showing the distribution of subjects based on height in relation to standardization of *Bindu Pramana*.

Height in mtrs	No. of subjects	Mean of *Bindu Pramana* obtained
1.31-1.4	1	0.4ml
1.41-1.5	4	0.45ml
1.51-1.6	12	0.56ml
1.61-1.7	9	0.54ml
1.71-1.8	3	0.63ml
1.81-1.9	1	0.8ml

Table 4: Showing the distribution of subjects based on weight in relation to standardization of *Bindu Pramana*.

Weight in Kgs	No. of subjects	Mean of *Bindu Pramana* obtained
31-40	1	0.4ml
41-50	7	0.5ml
51-60	7	0.54ml
61-70	11	0.56ml
71-80	4	0.67ml

Table 5: Showing the distribution of subjects based on BMI in relation to standardization of *Bindu Pramana*.

BMI in Kg/M^2	No. of subjects	Mean of *Bindu Pramana* obtained
Under Weight	1	0.4ml
Normal Weight	17	0.52ml
Over Weight	11	0.55ml
Obese Class 1	1	0.7ml

Table 6: Showing the distribution of subjects based on circumference of middle phalanx in relation to standardization of *Bindu Pramana*.

Circumference of middle phalanx in cms	No. of subjects	Mean of *Bindu Pramana* obtained
4.1-5	1	0.4ml
5.1-6	12	0.49ml
6.1-7	15	0.58ml
7.1-8	2	0.75ml

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Table 7: Showing the distribution of subjects based on circumference of distal phalanx in relation to standardization of *Bindu Pramana*.

Circumference of distal phalanx in cms	No. of subjects	Mean of *Bindu Pramana* obtained
4.1-5	12	0.46ml
5.1-6	17	0.60ml
6.1-7	1	0.7ml

Table 8: Showing the distribution of subjects based on height of middle and distal phalanx in relation to standardization of *Bindu Pramana*.

Circumference of middle and distal Phalanx in cms	No. of subjects	Mean of *Bindu Pramana* obtained
4.1-5	10	0.46ml
5.1-6	18	0.58ml
6.1-7	2	0.7ml

DISCUSSION

The mean dosage of *Bindu Pramana* obtained in male was 0.62ml where as in female was 0.52ml. The mean dosage of *Bindu Pramana* obtained in the age group of 21-30years was 0.51ml, in 31-40years was 0.55ml, in 41-50years was 0.56ml and in 61-70 years was 0.7ml. The mean dosage of *Bindu Pramana* obtained in relation to height of 1.31-1.4mtrs was 0.4ml, in 1.41-1.5mtrs was 0.45ml, in 1.51-1.6mtrs was 0.56ml, in 1.61-1.7mtrs was 0.54ml and in 1.71-1.8mtrs was 0.63ml. The mean dosage of *Bindu Pramana* obtained in relation to weight of 31-40kgs was 0.4ml, in 41-50kgs was 0.5ml, in 51-60kgs was 0.54ml, in 61-70kgs was 0.56ml and in 71-80kgs was 0.67ml. The mean dosage of *Bindu Pramana* obtained in relation to BMI of underweight subject was 0.4ml, in normal weight subjects was 0.52ml, in over weight subjects was 0.55ml and in obese Class 1 subject was 0.7ml. The mean dosage of *Bindu Pramana* obtained in relation to the circumference of the middle phalanx in 4.1-5cms was 0.4ml, in 5.1-6cms was 0.49ml, in 6.1-7cms was 0.58ml and in 7.1-8cms was 0.75ml. The mean dosage of *Bindu Pramana* obtained in relation to the circumference of the distal phalanx in 4.1-5cms was 0.46ml, in 5.1-6cms was 0.60ml and in 6.1-7cms was 0.7ml. The mean dosage of *Bindu Pramana* obtained in relation to the height of middle and distal phalanx in 4.1-5cms was 0.46ml, in 5.1-6cms was 0.58ml and in 6.1-7cms was 0.7ml.

Although the opinion of the *Acharyas* regarding the dosage, the measurement mentioned is in *Bindu Pramana* only. Because of the inconvinience of time, easy way of administration, easy measurement, time constraint, difficulty in following *Pariharya Vishayas,* to prevent contamination, *Nasya Karma* is administered on drop basis as conventional method has its own limitations. So when *Nasya Karma* is administered in *Bindu Pramana* desired therapeutic effect can be achieved. Other factors which may influence in relation to the fixation of dose are different formulations as their will be different consistency and viscosity, temperature of *Taila*, Season, time of the day and *Paaka* of *Taila* - *Mridu Paakita Taila* should be prescribed in *Nasya Karma* where as *Madhyama Paakita Taila* was considered for measurement in the present study.

The present study when done on larger subjects keeping these parameters in mind we come out with one value specific. Hence, we can state forward and administer the same for *Nasya Karma* and can avoid the calculation of *Bindu Pramana* for each and every patient. Considering some influences in fixation of dose we can administer it in +/- 0.1ml.

CONCLUSION

The study conducted was an attempt to standardize the dosage of *Sneha Nasya* in Healthy subjects where the obtained mean is 0.55ml. When this present study is conducted on larger number of subjects of particular age, gender, height, weight, BMI, circumference of middle phalanx of index finger, circumference of distal phalanx of index finger, height of middle and distal phalanx of index finger we get

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one specific value, where we can refrain from measuring the *Bindu Pramana* for each and every patient. Hence, this will be the yardstick for the administration of *Nasya Karma*.

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