



## AN OPEN LABEL DOUBLE ARM STUDY TO COMPARE THE EFFICACY OF SWARNA BINDU PRASHANA IN RURAL AND URBAN RESIDENT CHILDREN AGED 4 TO 10 YEARS ON MEDHA, AGNI AND BALA

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### ABSTRACT

*Swarna Bindu prashana* is a traditional ayurvedic formulation made with purified gold, honey, ghee and herbs given to children with the intention of enhancing their immunity, supporting brain development and promoting overall health as they grow. The current clinical review is aimed to evaluate and compare the efficacy of *Swarna Bindu prashana* on *Medha*, *Agni*, and *Bala* in urban and rural residence children. A comparative clinical study was conducted in children's who are mentally and physically healthy but with different levels of IQ will be randomly selected in the study from the Sri Kalabyraveswara Swamy Ayurvedic Medical College, Hospital and Research Center Bangalore and Balagangadharanatha Swamiji hospital, Balagangadharanatha Nagar, belluru between age group of 4 to 10 years. All the children were administered with *Swarna Bindu Prashana* once in three months and *Medhya Rasayana* regularly for the period of three months. All the subjects were assessed before and after the medicine with a pre prepared questionnaire on parameters *Medha*, *Agni* and *Bala*. *Swarna Bindu Prashana* showed significant improvement in *Medha* (intellect), *Agni* (digestion), and *Bala* (strength) among both rural and urban children. Urban children showed better enhancement in *Medha* and *Bala*, while rural children improved more in *Agni* and certain aspects of *Medha*. Hence the current clinical comparative study reveals that *Swarna Bindu Prashana* effectively supports the development of *Medha*, *Agni*, and *Bala* in children from both urban and rural residences. It can be considered as a beneficial intervention for enhancing overall cognitive, digestive, and physical strength in growing children.

**KEYWORDS:** *Swarna Bindu Prashana*, *Medha*, *Agni*, *Bala*.

### INTRODUCTION

*Swarna Bindu Prashana* is a unique technique of administering gold to the child in order to promote its intellect and immunity so that it can grow healthy without any diseases and become highly intelligent.<sup>[1]</sup> *Swarna Bindu Prashana* is presently being practiced throughout India in various forms and is widely accepted in the society.<sup>[2]</sup> Administration of gold in various forms for immunological, intellectual, and physical development of children has been described in many treatises of Ayurveda.<sup>[3]</sup> Among which *Swarna Bindu Prashana* explained in *Kashyapa Samhita* gives very clear guidelines regarding the preparation, practice, and

benefits to children.<sup>[4]</sup> Further, it has been mentioned that by continuous administration of *Swarnaprashana* for 1 month, the child becomes extremely intelligent and is not afflicted by diseases; by administering it for 6 months, the child can retain whatever they hear.<sup>[5]</sup>

Due to a variety of socio-cultural and environmental factors, living in rural or urban areas may positively or negatively impact one's health status. The "urban health advantage" may be linked to cities providing better opportunities for health protection, including infrastructure development, access to healthcare, social support, and economic opportunities.

On the other hand, the “urban health penalty” may stem from individuals being exposed to detrimental factors like pollution, stress, and health-compromising behaviour’s in cities, ultimately negatively impacting health. Urban residence was found to be associated with better self-rated health status, higher happiness, high life satisfaction, and better cognitive functioning.<sup>[6]</sup>

Rural residence was associated with major depression, higher grip strength, and functional limitations. Hence the current study is intended to check the efficacy of *Swarna Bindu Prashana* on *Medha Agni* and *Bala* of the children.

### THERAPEUTIC EFFECT OF SWARNA BINDU PRASHANA

*Swarna prashana* or *hemaprashana* are profound to have the benefits like it enhances intellect, strengthen the *Agni*, *Bala* and it is said to promote longevity, auspiciousness, virtue, complexion, acts as an

aphrodisiac while also protecting against *graha roga*. When administered for one month it improves immunity and intelligence; when continued for six months it helps the child retain everything what so ever.<sup>[7]</sup> As per *Acharya Vagbhata*, after the child birth, The child should be given bath with *Kashaya* of *Kapittha* leaves or any fragrant drugs, made luke warm by immersing heated sheets of gold or silver. Then after, paste of *Aindri*, *Brahmi*, *Shankhapushpi* & *Vacha*, one *matra* mixed with honey and ghee. Sanctified by touching with tips of *kusha* grass and held in a plate resembling an *ashvattha* leaf, made of gold should be given to the child to lick to promote *medha*, *ayu* and *bala*.<sup>[8]</sup>

As per *Acharya Sushruta* has also mentioned that after the child birth the child made to lick honey, ghee & powder of *Ananta churna* and *Swarna churna* (powder/ash of gold) in order to enhance the *Medha* and *bala*.<sup>[9]</sup>

Table 1: ASHTAMANGALA GHRITA.<sup>[10]</sup>

SL. No.	Ingredients	Quantity
01	<i>Kalka dravya</i>	1part
02	<i>Vacha (Acorus calamus)</i>	1part
03	<i>Kushta (Saussurea lappa)</i>	1part
04	<i>Bhrami (Bacopa monnieri)</i>	1part
05	<i>Siddarthaka (Brassica campestris)</i>	1part
06	<i>Sariva (Hemidesmus indicus)</i>	1part
07	<i>Saindhava lavana</i>	1part
08	<i>Pippali (Piper longum)</i>	1part
09	<i>Paka dravya</i>	1part
10	<i>Go ghrta</i>	1part
11	Water	1part

Table 2: GUDUCHYADI MEDHYA RASAYANA.<sup>[11]</sup>

SL. No.	Ingredient	Quantity
01	<i>Guduchi (Tinospora cordifolia)</i>	1part
02	<i>Apamarga (Achyranthes aspera)</i>	1part
03	<i>Vidanga (Embelia ribes)</i>	1part
04	<i>Shankapushpi (Convolvulus pluricaulis)</i>	1part
05	<i>Vacha (Acorus calamus)</i>	1part
06	<i>Haritaki (Terminalia chebula)</i>	1part
07	<i>Kushta (Saussurea lappa)</i>	1part
08	<i>Shatavari (Asparagus racemosus)</i>	1part

### AIMS AND OBJECTIVES

The current clinical review is aimed to evaluate and compare the efficacy of *Swarna bindu prashana* on *Medha*, *Agni* and *Bala* in urban and rural residence children of aged 4 to 10 years.

### MATERIALS AND METHODS

a) **STUDY DESIGN:** A comparative clinical study.

#### b) SOURCE OF STUDY

The children who are mentally and physically healthy but with different levels of IQ will be randomly selected in the study from Sri Kalabyraveshwara Swamy

Ayurvedic Medical College Hospital and Research Center, Bangalore and Balagangadharanatha Swamiji hospital Balagangadharanatha Nagar, Belluru between age group of 4 to 10 years.

#### c) INCLUSION CRITERIA

- Children of either sex
- Children with an age of 4 to 10 years.
- Children from Urban as well as Rural areas.

#### d) EXCLUSION CRITERIA

- Children presenting with learning disability mental retardation, ADHD (Attention-deficit/hyperactivity

disorder), developmental disorders and any systemic disorders will be excluded from the study.

e) **SAMPLE SIZE**

- 30 children who fulfilling the inclusion criteria will be selected.
- The 15 children from Sri Kalabyraveswara Swamy Ayurvedic Medical College Hospital and Research Center, Bangalore will be considered for Group-A as Urban group.
- The 15 children from Balagangadharanatha swamiji hospital, Balagangadharanatha Nagar, belluru will be considered for Group-B as Rural group.

f) **DURATION OF STUDY:** 3 months.

g) **INTERVENTION**

- For both the groups *Swarna Bindu prashana* will be given on *pushya nakshatra* day for 3 consecutive months.
- *Medhya Rasayana* will be given every day 2 pinch with honey in empty stomach in the morning for 3 months.

## RESULTS

### *Medha*

#### **1. Grasping Ability (*Medha Grahana*)**

Rural children exhibited a statistically significant improvement in grasping ability after treatment, whereas urban children did not. However, the initial difference between the groups was significant and reduced after treatment, suggesting overall improvement in the rural group.

#### **2. Memory Recall (*Smriti Smarana*)**

Both urban and rural children demonstrated significant enhancement in memory recall. Post-treatment, urban children performed significantly better than rural children in this parameter.

#### **3. Retention Ability (*Dhriti*)**

Urban children showed a statistically significant improvement in retention ability following the intervention. In contrast, rural children did not show a significant change in this area.

#### **4. Intellectual Clarity (*Vijnana Vyavasthapanam*)**

A significant improvement was observed in both urban and rural children, with no significant difference between the groups before or after treatment.

### *Agni*

#### **1. Food Intake Capacity (*Abhyavaharana Shakti*)**

There was no statistically significant improvement within either group. However, after the intervention, urban children demonstrated significantly greater food intake capacity compared to rural children.

#### **2. Digestive Power (*Jarana Shakti*)**

Both groups showed a statistically significant increase in digestive strength post-treatment. There was no significant difference between the groups in this parameter.

#### **3. Appetite (*Ruchi*)**

Appetite improved significantly in both groups after treatment. The comparison between groups did not show a significant difference.

### *Bala*

#### **1. Physical Strength (*Bala vrddhi*)**

Urban children showed a significant increase in physical strength, whereas rural children did not exhibit a statistically significant change. Nonetheless, post-treatment differences between the groups were not statistically significant.

#### **2. Voice Quality (*Swara Varna Yoga*)**

A significant improvement in voice clarity was noted among rural children only. After the treatment period, rural children showed significantly better outcomes than the urban children's in this parameter.

#### **3. Body Growth (*Sharira Upachaya*)**

Both groups showed significant improvement in physical development. Although rural children had lower baseline values, they reached similar levels as urban children post-treatment.

#### **4. Sleep Quality (*Nidralabha*)**

Rural children experienced a statistically significant improvement in sleep, while urban children did not. Following treatment, rural children had significantly better sleep outcomes.

#### **5. Ease of Waking (*Sukhena Pratibodhanam*)**

Urban children showed a significant improvement in ease of waking, while rural children did not. After treatment, urban children had significantly better results in this parameter.

#### **6. Dream Disturbance (*Vaikarika Swapnanam*)**

Significant reduction in disturbed sleep and dreams was observed in urban children only. No significant differences between groups were found after treatment.

#### **7. Mind-Body Coordination (*Mano-Buddhi-Indriya Vyapti*)**

Rural children showed significant improvement in mental and sensory coordination. Urban children did not show a statistically significant change. Although urban children started with higher scores, the differences were no longer significant after treatment.

## DISCUSSION

The assessment of results was done by analysing the subjective parameters by using specific grades as mentioned earlier in the clinical study. In this study both

Group A and B treated with *Swarna Bindu prashana* along with *Medhya Rasayana*. Group A comprising of Urban subjects and Group B comprising of Rural subjects. Assessment was done before the treatment and after the treatment. The effect of treatment are as follows:

## Objective Parameter

### Medha

#### 1. Medha Grahana

In Group A, statistical test on improvement in *Medha Grahana* was found statistically not significant from BT to AT ( $W = 0.001$ ,  $p = 0.089$ ). In Group B, statistical test on improvement in *Medha Grahana* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.001$ ).

In between the groups, statistical test on improvement in *Medha Grahana* was found statistically significant at BT ( $W = 185.50$ ,  $p = 0.005$ ) and statistically not significant AT ( $W = 128.0$ ,  $p = 0.711$ ).

#### 2. Smrithi Smarana

In Group A, statistical test on improvement in *Smrithi Smarana* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.012$ ). In Group B, statistical test on improvement in *Smrithi Smarana* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.003$ ).

In between the groups, statistical test on improvement in *Smrithi Smarana* was found statistically not significant at BT ( $W = 160.00$ ,  $p = 0.09$ ) and statistically significant AT ( $W = 162.5$ ,  $p = 0.031$ ).

#### 3. Dhriti Alaulyena

In Group A, statistical test on improvement in *Dhriti Alaulyena* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.005$ ). In Group B, statistical test on improvement in *Dhriti Alaulyena* was found statistically not significant from BT to AT ( $W = 13.000$ ,  $p = 0.930$ ).

In between the groups, statistical test on improvement in *Dhriti Alaulyena* was found statistically not significant at both BT ( $W = 102.00$ ,  $p = 0.443$ ) and AT ( $W = 156.0$ ,  $p = 0.055$ ).

#### 4. Vijnana vyavasena

In Group A, statistical test on improvement in *Vijnana vyavasena* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.010$ ). In Group B, statistical test on improvement in *Vijnana vyavasena* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.006$ ).

In between the groups, statistical test on improvement in *Vijnana vyavasena* was found statistically not significant at both BT ( $W = 147.00$ ,  $p = 0.255$ ) and AT ( $W = 149.0$ ,  $p = 0.053$ ).

## Agni

### 1. Abhyavaharana shakti

In Group A, statistical test on improvement in *Abhyavaharana shakti* was found statistically not significant from BT to AT ( $W = 3.000$ ,  $p = 0.581$ ). In Group B, statistical test on improvement in *Abhyavaharana shakti* was found statistically not significant from BT to AT ( $W = 10.500$ ,  $p = 0.092$ ).

In between the groups, statistical test on improvement in *Abhyavaharana shakti* was found statistically non-significant at BT ( $W = 88.00$ ,  $p = 0.198$ ) and statistically significant AT ( $W = 61.50$ ,  $p = 0.017$ ).

### 2. Jarana shakti

In Group A, statistical test on improvement in *Jarana shakti* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.003$ ). In Group B, statistical test on improvement in *Jarana shakti* was found statistically significant from BT to AT ( $W = 6.000$ ,  $p = 0.008$ ).

In between the groups, statistical test on improvement in *Jarana shakti* was found statistically nonsignificant at both BT ( $W = 114.000$ ,  $p = 0.798$ ) and AT ( $W = 104.00$ ,  $p = 0.478$ ).

### 3. Ruchi

In Group A, statistical test on improvement in *Ruchi* was found statistically significant from BT to AT ( $W = 7.000$ ,  $p = 0.003$ ). In Group B, statistical test on improvement in *Ruchi* was found statistically significant from BT to AT ( $W = 2.500$ ,  $p = 0.003$ ).

In between the groups, statistical test on improvement in *Ruchi* was found statistically non-significant at both BT ( $W = 108.500$ ,  $p = 0.660$ ) and AT ( $W = 86.50$ ,  $p = 0.177$ ).

## Bala

### 1. Balavruddhi

In Group A, statistical test on improvement in *Bala vrudhi* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.001$ ). In Group B, statistical test on improvement in *Bala vrudhi* was found statistically not significant from BT to AT ( $W = 46.00$ ,  $p = 0.700$ ).

In between the groups, statistical test on improvement in *Bala vrudhi* was found statistically non-significant at both BT ( $W = 118.500$ ,  $p = 0.965$ ) and AT ( $W = 156.00$ ,  $p = 0.123$ ).

### 2. Swara varna yoga

In Group A, statistical test on improvement in *Swara varna yoga* was found statistically not significant from BT to AT ( $W = 4.000$ ,  $p = 0.054$ ). In Group B, statistical test on improvement in *Swara varna yoga* was found statistically significant difference, strongly rejecting the null hypothesis of no median difference." from BT to AT ( $W = 0.000$ ,  $P = 0.001$ ).



In between the groups, statistical test on improvement in *Swara varna yoga* was found statistically nonsignificant at BT ( $W = 147.00$ ,  $p = 0.206$ ) and statistically significant difference, strongly rejecting the null hypothesis of no median difference. AT ( $W = 000$ ,  $p = 0.001$ ).

### 3. *Sharira upachaya*

In Group A, statistical test on improvement in *Sharira upachaya* was found statistically significant difference, strongly rejecting the null hypothesis of no median difference from BT to AT ( $W = 000$ ,  $p = 0.001$ ). In Group B, from BT to AT ( $W = 000$ ,  $p = 0.001$ ).

In between the groups, statistical test on improvement in *Sharira upachaya* was found statistically significant difference, strongly rejecting the null hypothesis of no median difference at BT ( $W = 000$ ,  $p = 0.001$ ) and statistically not significant AT ( $W = 121.5$ ,  $p = 0.961$ ).

### 4. *Nidralabha*

In Group A, statistical test on improvement in *Nidralabha* was found statistically non-significant from BT to AT ( $W = 2.500$ ,  $p = 0.461$ ). In Group B, statistical test on improvement in *Nidralabha* was found statistically significant difference, strongly rejecting the null hypothesis of no median difference from BT to AT ( $W = 000$ ,  $p = 0.001$ ).

In between the groups, statistical test on improvement in *Nidralabha* was found statistically non-significant at BT ( $W = 133.00$ ,  $p = 0.474$ ) and statistically significant difference, strongly rejecting the null hypothesis of no median difference at AT ( $W = 0000$ ,  $p = 0.001$ ).

### 5. *Sukhena cha pratibhodanam*

In Group A, statistical test on improvement in *Sukhena cha pratibhodanam* was found statistically significant from BT to AT ( $W = 1.000$ ,  $p = 0.001$ ). In Group B, statistical test on improvement in *Sukhena cha pratibhodanam* was found statistically not significant from BT to AT ( $W = 0.001$ ,  $p = 0.001$ ).

In between the groups, statistical test on improvement in *Sukhena cha pratibhodanam* was found statistically non-significant at BT ( $W = 87.000$ ,  $p = 0.170$ ) and statistically significant AT ( $W = 72.00$ ,  $p = 0.038$ ).

### 6. *Vaikarika cha swapnanam*

In Group A, statistical test on improvement in *Vaikarika cha swapnanam* was found statistically significant from BT to AT ( $W = 0.001$ ,  $p = 0.001$ ). In Group B, statistical test on improvement in *Vaikarika cha swapnanam* was found statistically not significant from BT to AT ( $W = 27.000$ ,  $p = 0.090$ ).

In between the groups, statistical test on improvement in *Vaikarika cha swapnanam* was found statistically non-significant at both BT ( $W = 126.000$ ,  $p = 0.786$ ) and AT ( $W = 136.000$ ,  $p = 0.293$ ).

### 7. *Mano buddhi indriya avyapatti*

In Group A, statistical test on improvement in *Mano buddhi indriya avyapatti* was found statistically not significant from BT to AT ( $W = 16.500$ ,  $p = 0.501$ ). In Group B, statistical test on improvement in *Mano buddhi indriya avyapatti* was found statistically significant from BT to AT ( $W = 11.000$ ,  $p = 0.015$ ).

In between the groups, statistical test on improvement in *Mano buddhi indriya avyapatti* was found statistically significant at BT ( $W = 186.500$ ,  $p = 0.005$ ) and statistically not significant AT ( $W = 129.500$ ,  $p = 0.578$ ).

## CONCLUSION

The present study highlights the positive effects of *Swarna Bindu Prashana*, *Medhya Rasayana* on enhancing *Medha* (cognition), *Agni* (digestive strength), and *Bala* (overall vitality) in children from both urban and rural backgrounds.

Among urban children, there was a marked improvement in cognitive abilities, particularly memory (*Smriti*), recall (*Smarana*), retention (*Dhriti*), and intellectual clarity (*Vijnana Vyavasthapana*). Digestive functions also improved, as seen in better appetite (*Ruchi*) and digestion (*Jaranashakthi*). Additionally, physical and mental vitality increased, with children showing greater strength (*Balavridhhi*), more ease in waking (*Sukhena Cha Pratibodhanam*), and reduced incidence of disturbed sleep (*Vaikarika Swapna*).

Rural children also showed significant benefits, especially in grasping ability (*Medha Grahana*) and memory recall (*Smriti Smarana*). Enhancements in digestion (*Jaranashakthi*) and appetite (*Ruchi*) were evident, along with improved coordination and alertness of the mind and senses (*Mano-Buddhi-Indriya Vyapti*).

When comparing the two groups, urban children showed relatively greater improvements in specific areas such as memory recall, food intake capacity (*Abhyavaharana Shakti*), appetite, and ease of waking.

Therefore the above findings suggest that *Swarna Bindu Prashana* contributes meaningfully to the development of cognitive function, digestive health, and overall vitality in children across both urban and rural residences with some areas showing more pronounced improvement in urban residence.

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