



Research Article

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Perception about *Suvarna Prashana* in parents– A multi centric cross-sectional study

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ABSTRACT

Background: *Suvarna Prashana* (SP) word comes in Kashyapa Samhita only, but use of *Suvarna* (gold) is mentioned by every Acharya starting from neonatal age. SP increase the intelligence and immunity, and hence used in paediatric age group since long back. Due to competitive nature of education in current days, parents want their child to be bright in education. At the same time, COVID 19 pandemic has revealed the importance of immunity to everyone and parents are in search of immune-modulatory medicine for their children. Vidyabharti in collaboration with Kamdhenu Divya Aushadhi Mahila Sahkari Mandali, Jamnagar are doing work in this field with SP and hence to document the perception of parents for this formulation (SP), this cross sectional study was planned. Material and method: Google forms were provided to 1523 parents of 37 centers, whose child had received this SP at least for 1 year (13 doses) on every Pushya constellation, out of whom 1348 parents had responded. Data were analysed to get the idea about perception of parents for this formulation. Results: Response failure was 11.5%. 94.8% parents found this practice beneficial. 98.52% parents would like to recommend this to other parents. 92.80% and 97.77% parents found their child's memory and growth and development improved after SP respectively. Family member of 34.64% children were infected with COVID 19 out of which, only 3.41 % children got infected during this study period. Conclusion: Survey study found that most parents believed/perceived that SP provided during every Pushya constellation at least for one year, is beneficial in regards to improvement in memory, general health, immunity of their children. Hence this preliminary data from observational study pave the way to establish the effectiveness of this drug in children through future randomized control trial.

Keywords: Ayaskruti, COVID 19, General Health, Immunity, Memory, Survey Study.

INTRODUCTION

Suvarna Prashana (SP) word comes in Kashyapa Samhita, according to which *Suvarna Prashana* is helpful in attaining normal growth and development, improves digestion, improves intelligence and helpful to get generalized immunity [1]. Though the word SP is not mentioned by any Ayurveda classics other than Kashyapa Samhita, therapeutic use of *Suvarna* (gold) is mentioned by almost every Acharya. In Charaka Samhita [2], the properties of gold and its compound formulations such as *Lauha Rasayana* are mentioned. Sushruta Samhita [3], has mentioned the properties of gold as *Tridosahara* (pacify all three *Dosha*), *Vishapaham* (antitoxin), *Brumhaniya* (nutritive), *Chakshushya* (good for eye), *Rasayana* (rejuvenating), *Hrudya* (good for heart), *Madhura Rasa* (sweet in taste) and *Shita Virya* (cool in potency). In *Astanga Hridaya*, *Suvarna* is including under *Madhura Gana* [4]. *Rasaratna Sammucchaya* grouped gold under *Shuddha Loha* (pure metals) [5].

According to Acharya Kashyapa, gold should be "rubbed on a stone" (pure gold in metallic form) in *Suvarna Prashana*. Other Acharya have mentioned the usage of gold in the form of *Churna* (powder) [6-9], *Patala / Mandala* (leaf/foil) [10], *Bhasma* (ash), *Lavana* (gold salt) or *Ayaskruti* (gold soaked water) [11]. Because of unavailability of pharmaceutical standards of SP, practitioners and institutions have fortified this *Kashyapokta Suvarna Prashana* with immune-modulator and nootropic herbal drugs to enhance the efficacy. As a result, currently there are many gold containing herbo-mineral formulations available in market as *Suvarna Prashana* with different name, different ingredients and with different method of preparation.

There are many previous research works available which validate the efficacy of various SP as immune-modulator, growth and development, memory and intelligence enhancer with promising results [12,13]. It is also important to notice that, since many years it is in practice in Indian traditional system of medicine to provide SP to healthy baby on every *Pushya* constellation.

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The same practice has been adopted by Kamdhenu Divya Aushadhi Mahila Sahkari Mandali since many years for preschool and school going children. Response of parents towards this initiative was very encouraging and hence this study was aimed to document the perception of parents for this *Suvarna Prashana*, through the cross-sectional observational survey study.

MATERIAL AND METHOD

Study Design: A multi-center cross-sectional observational study.

Setting: A Google form questionnaire was developed to find out the perception of parents towards the efficacy of SP for their children. Parents of children who had received SP at least for one year (13 doses) were included in this study. Google forms were distributed to eligible parents of 37 centers through Whatsapp during April 2021. Responses were received till 30th April 2021.

In the Google form, respondents were first shown a description of this cross sectional observational survey study. At the end of the description, respondents were asked for their willingness to participate in this survey study. Then after dichotomous outcome questions were kept to assess the perception of parents on this procedure.

Suvarna Prashana used in this study was prepared by ISO certified pharmacy, Kamdhenu Divya Aushadhi Mahila Sahkari Mandali, Jamnagar. Each 1 ml of this *Suvarna Prashana* contains *Bala Ghrita* 18%, *Ashtamangala Ghrita* 22%, honey 60%, saffron quantity sufficient and *Panchamrutika Sodhita Suvarna Yoga (Ayaskruti)* 0.001%.

SP was given in the dose of 2 drops in 1 year old baby; 3 drops in 1 to 3 years of toddlers; 4, 5 and 6 drops in 3 to 6, 6 to 10 and 10 to 13 years of child respectively.

Participants: Children between the age 1 to 13 years attending the Shishu Mandir school of various centres or their siblings; and not suffering from any major systemic disease or infection and who were not on any medications were provided SP on every *Pushya* constellation (once in 28 days) irrespective of their gender, socioeconomic status, and religion.

Variables: Perceptions of parents related with beneficial effect of SP and any adverse reaction of this SP were asked. To know the impact of SP on status of immunization, vaccination history was asked. To get the idea about improvement in immunity, hospitalization required for any ailment during the use of SP was asked. Perception of parents regarding improvement in general health, memory, growth and development was also asked in questionnaire. To know that the parents were satisfied or not with this procedure, it was asked that will you recommend this to other parents? To get the idea about SP's

benefit in prevention of COVID, question related with the ratio of COVID infection to the family members and baby was also asked. Some questions were used from the previous observational study carried out on this subject by Rao NP *et al*, 2012.

Bias: For getting the idea about the effect of SP, there might be chances that confounders like variation in dietary habit, exposure to the microorganism, general constitution (*Sahaja Bala*), level of parental interest in study of children could be there. To minimize the same we took survey from various centers with same school atmosphere (Sarasvati Shishu mandir). By keeping same school, we tried to keep same socioeconomic status among the participants.

Sample size and sampling: Sample size was calculated on Survey Monkey [14]. Confidence level of 95% and margin of error at 3% on more than 10,000 children who took SP at least for 1 year at various centers. Sample size obtained was 1000 (considering 50% response failure 1500 sample size was kept and for that responses received till 30 April 2021 was assessed).

Since the population is scattered at multiple sites, constructing a probability sampling frame was not possible and hence convenience sampling was done.

RESULTS

A total of 1348 parents were responded (out of 1523) with 11.5% response failure rate. Total 37 centres were involved in SP distribution and responses were received from various centres are as shown in table 1. Children were aged from 1–13 years (table 2). Male children were 791 (58.68%) and girl children were 557 (41.32%).

As per table 2, out of 1348 children, 5 infants had taken SP since birth, 22 children were of 2 years of age. Maximum children (25.07%) were from 5 to 6 year age group.

As per table no 3, majority of parents had a perception that this SP is beneficial (94.8%), improved memory of their child (92.80%), improved G&D (97.77%) and improved general health (96.22%). 98.07% parents reported that there was no any ADR noticed even after 1 year of its use. Rest of 1.93% reported the ADR, but still they are using the formula, indicates ADR was mild in the nature and while comparing the risk benefit ration, parents might find more beneficial in comparison to its side effect.

4.30% children required hospitalization after starting this SP. 98.52% parents replied with yes when asked to recommend this to other. Though 34.64% children's family member were affected with COVID during this pandemic from May 2020 till April 2021, only 3.41% children were got affected despite of their close contact. (Fig 1).

Table 1: Distribution of response received from parents as per various centres

Sr.No.	Center	No. of response received	Sr.No.	Center	No. of response received
1	Althan	12	20	Mandvi	8
2	Amareli	11	21	Manjipura	3
3	Bamroli	1	22	Morbi	183
4	Barwala	18	23	Mundra	7

5	Bhuj	12	24	Nadiad	12
6	Bidada	32	25	Nani Khakhr	2
7	Dakor	14	26	Navagadh	1
8	Dared	21	27	Navasari	50
9	Deesa	30	28	Patan	64
10	Gadhshisa	10	29	Rajapipada	1
11	Gandhidham	15	30	Wanakbori Thermal	21
12	Gulab nagar	12	31	Theba	13
13	Jamnagar	14	32	Udhana, Surat	75
14	Jetpur	9	33	Unja	149
15	Kakadkoi	6	34	Vadodara	10
16	Kalol	9	35	Vapi	4
17	Karjan	42	36	Varacha, Surat	420
18	Kila Pardi	18	37	Vibhapar	36
19	Lalwadi	3			
Total					1348

Table 2: Age wise classification

Age group	Number of children	Percentage
1 year	15	1.11
1 to 2 years	22	1.63
2 to 3 years	32	2.37
3 to 4 years	55	4.08
4 to 5 years	266	19.73
5 to 6 years	338	25.07
6 to 7 years	202	14.98
7 to 8 years	122	9.05
8 to 9 years	118	8.75
9 to 10 years	90	6.68
10 to 11 years	56	4.15
11 to 12 years	16	1.19
12 to 13 years	16	1.19
Total	1348	100

Table 3: Dichotomous responses of parents (n=1348)

Sr.No.	Questionnaire	Answer	
		Yes Number, (%)	No Number, (%)
1	Did you find it beneficial?	1278 (94.80)	70 (5.20)
2	Did you find any adverse reaction after this SP?	26, 1.93	1322, 98.07
3	Baby is being vaccinated properly?	1002, 94.33	346, 5.67
4	After SP, hospitalization required?	58, 4.30	1290, 95.70
5	Memory increased?	1251, 92.80	97, 7.20
6	Helpful in growth and development?	1318, 97.77	30, 2.23
7	Will you recommend this to other parents?	1328, 98.52	20, 1.48
8	Did you find improvement in general health of baby?	1297, 96.22	51, 3.78
9	Baby got infected with COVID after getting this SP?	46, 3.41	1302, 96.59
10	Family member got COVID infection during this study period?	467, 34.64	881, 65.36

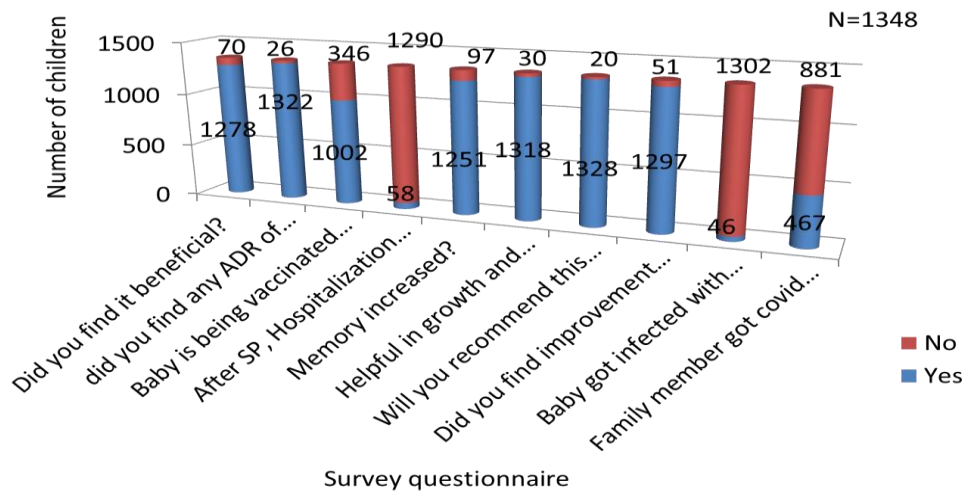


Figure 1: Survey outcomes

DISCUSSION

This cross sectional survey study is first of its kind. This study shows that majority of parents (1278, 94.80%) found this procedure beneficial. This indicates the overall perception for this procedure.

This positive perception might be developed because of different essential trace elements present in the SP which serves many critical roles in living body at a molecular level. They participate as catalysts or cofactors in a wide range of enzymatic processes, with roles ranging from relatively weak, non-specific ion effects (metal-ion activated enzymes) to highly specific associations (metalloenzymes) in which the metals are potentially bound to protein (apoenzyme) to complete the function.

Majority of parents (1322, 98.07%) did not observed any adverse reaction for this preparation, which indicates the safety of the preparation. (figure 1) This safety along with efficacy is because of the method of the preparation of this particular SP. This specific *Suvarna Prashana* is formulated to enhance *Balya* (strength enhancer) and *Medhya* (nootropic) property of SP in a single dosage form. Classical SP as per *Kashyapa Samhita* contains honey, ghee and gold only. But here additional *Balya* effect might be obtained due to addition of *Bala Ghrita* as an ingredient in this SP. In given SP, *Ashtamanagal Ghrita* is also an ingredient, which is known to possess properties like memory enhancer, and neuro-generation [15]. In present SP *Suvarna* is added in the form of *Ayaskruti* form. This form of gold in children is safe and at the same time effective. As per the pharmaceutical finding of this SP, presence of gold particles in 156 ppm is evident that, doing *Ayaskruti* for 1600 time in a same water leads to addition of gold particle in that water.

92.80% parents had perception that SP has helped their child to increase the memory. This might be possible due to pharmacological effect of SP as well as time of administration. According to *Jyotisha Shastra*, *Pushya* constellation is good to imbibe learning qualities and strength. Hence this constellation is being widely used in India to administer this *Suvarna Prashana* despite unavailability of direct reference for this. In *Samhita* many drugs like *Nagabala* (*Sida veronaecifolia* Lam.) [16], *Shunah Pitta* (dog's bile) [17] are mentioned to be collected, *Anjanvarti* (specific local application for eye) are

mentioned to be prepared [18] and *Phalaghrita* (a traditional herbal ghee) was mentioned to be used [19] on *Pushya* constellation.

1290 (95.70%) parents had perceived that, hospitalization of their child was not required after starting the SP. This is very important finding, as earlier statistical data shows that 6.9 million child deaths occur during first 5 years of life. According to UNICEF, most child deaths (and 70% in developing countries) result from one of the following five causes or a combination i.e. acute respiratory infection, diarrhea, measles, malaria, and malnutrition [6].

According to a "Save the Children" paper, children from the poorest households in India are three times more likely to die before their fifth birthday than those from the richest households [7]. In this survey we found that, majority of 5 to 6 year children (25.07%) were benefited with this *Suvarna Prashana*, which is a good indicator for the purpose of preventive medication. Previous clinical study on SP also indicated that immunomodulatory effect was apparent in infants when given for continuous 28 days [20].

It is also important to notice that children are taking SP since more than 1 year. Parents are bringing their children for longer period is also a marker of efficacy and safety of that drug.

Out of total 1348 children, 46 (3.41%) children were infected with COVID 19 despite of having 55.7% of seroprevalence <18 years age group in India [21]. It was also found that 34.64% children's family members got affected with COVID 19 during 1st and 2nd waves but majority of participant children were spared. This data is providing an important lead in the field of preventive medicine. Further RCT should be carried out to validate this finding.

1328 (98.52%) parents replied yes, when asked for recommending to others. This indicates that the treatment is effective and without any side effect.

It was also important to notice that, in place of expected 50 % of response failure, there was 11.5% response failure only. This shows the enthusiasm of parents to share the perception related to SP given to their children.

Limitations: While this cross-sectional study is providing a useful background for further research, causal relationship cannot be determined. Possibility of interference of other variables in the relationship between the inferred cause and outcomes cannot be denied. This study also has possibility to have report biases, as questionnaires about certain aspects may not always result in accurate reporting, and there is usually not a mechanism for verifying this information.

CONCLUSION

Survey study found that most parents believed/perceived that SP provided during every *Pushya* constellation at least for 1 year in children from 1 to 13 years, is beneficial in regards to improvement in memory, general health, immunity of their children. Hence this preliminary data from observational study pave the way to establish the effectiveness of this drug in children through future randomized control trial.

Conflict of Interest

None declared.

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None declared.

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