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Research Article

THE COMBINE EFFECT OF *SUARNAPRASHAN* WITH SPEECH-LANGUAGE THERAPY IN CHILDREN WITH DELAYED SPEECH AND LANGUAGE DISORDER

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ABSTRACT

Suvarnaprashan is ancient oral vaccination technique describe Ayurvedic texts. Delayed in acquiring language are most common symptoms of childhood developmental disability affecting around 5 to 10% of all children. The effectiveness of *Suvarnaprashan* in various developmental disabilities in children was reported earlier studies. However, its effectiveness for children with pure delayed speech and language disorder without any associated developmental difficulties was not studied previously. Hence, the study taken with aim of the combine outcome of *Suvarnaprashan* with speech-language therapy in children with delayed speech and language disorder. Total no. of 50 participants with early diagnosed delayed speech and language disorder with age range from 02 to 05 were included for this study. The participants were divided in two subgroups in which group A underwent for speech language therapy only and group B underwent for both speech-language therapy and *Suvarnayaprashan sanskara*. Children with delayed speech and language disorder showed significant improvement with Speech language therapy plus *Suvarnayaprashan* intervention compare to speech and language therapy alone. *Suvarnaprashan* can be utilized effectively as a therapeutic tool for children with delayed speech and language disorder. It is very simple, cost effective, infrastructure compatible, safe and prevention-centric approach. Hence, it should be adopted globally as immunization program also for preventive measure of delayed speech and language disorders and disability. The present study opened new dimensions and need of further research in different area of disability with large sample and long term follow up.

INTRODUCTION

The process in which *Swarna Bhasma* (gold ash), cow ghee, honey and *Medhya* (brain stimulant) herbs taken in the form of semi-liquid and given to the children through orally is called as *Suvarnaprashan*^[1]. It is one of the 16 essential *Samskara*, in which administration of processed gold during childhood is a unique practice described in Ayurveda^[2].

Under *Jatakarma Samskara* (neonatal care) it is described as unique ancient method of boosting immunity (*Vyadhikshamtva*), improving intelligence, retention power, memory and cognition of newborn, infants and children.^[1-2] In *Kashyapa Samhita*, one of the oldest textbooks of *Kaumarbhritya* (Ayurveda dealing with mother and child health care), gives the first reference about *Suvarnaprashan* as a therapy for infants and intended to boost memory, concentration, intelligence and immunity (*Medha Agni Bala Vardhanam*) in pediatric population^[2]. *Suvarnaprashan* also have healing properties which has immunestimulant, adaptogenic, memory booster, anti-inflammatory, antibacterial, anticancer antiviral, antimutagenic antiarthritic and antioxidant properties^[2]. The another benefits of *Suvarnaprashan sanskara* are *Varnyam* (enhancement of color and

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complexion) *Grahapaham* (protection from evil spirits and microorganisms), digestive power and *Ayushyam* (promoting lifespan) also mentioned in Ayurvedic texts.^[3] Previous studies also reported that regular doses of *Suvarnaprashan* improves child's intellect, grasping power, sharpness, analysis power, memory recalling in an unique manner and nurture early developmental milestones^[4]. It was also reported that it reduces aggressiveness, irritability, anxiety and attention seeking behaviour hence it is also provide benefit for children with various developmental disability such as learning disability, autism, attention deficits with or without hyperactivity disorder, cerebral palsy and many other disorders related to CNS^[3-5]. Delayed in acquiring language is most common symptoms of childhood developmental disability affecting around 5 to 10% of all children^[6] and majority of not have any other significant developmental difficulties^[7] In previous case study, *Suvarnaprashan* interventions were implemented along with holistic approach in autism spectrum disorder and promising results in all developmental milestones was reported^[5]. Another study also reported that *Suvarnaprashan* along with other Ayurveda medicines are most effective in treating all types of learning and mental disabilities in children^[8]. The effectiveness of *Suvarnaprashan* in various developmental disabilities in children was reported earlier studies ^[5-8]. However, its effectiveness for children with pure delayed speech and language disorder without any associated developmental difficulties was not studied previously. Hence, the combine outcome of *Suvarnaprashan* with speech-language therapy in children with delayed speech and language disorder was carried out.

MATERIALS AND METHODS

Participants

To fulfill the objective of this study, total no. of 50 participants with equally gender distributed with early diagnosed delayed speech and language disorder with age range from 02 to 05 (mean 3.4 Years, SD-1.07) were included for this study.

Inclusion Criteria

1. Early diagnosed delayed speech and language disorder with age range from 02 to 05 years children were included in this study.
2. These early diagnosed children were not enrolled prior speech and language therapy.
3. Child who has language delay without any associated factor like mental retardation, autism, learning disability, cerebral palsy etc was included for this study.

4. Child who history of no high risk factor such as premature delivery, low birth weight and delayed birth cry was included in this study.
5. Child who has who have bilateral hearing sensitivity within normal limits, age appropriate psychological development and normal motor milestone were included in this study.

Exclusion Criteria

1. Children with delayed speech and language, below 2 years and above 5 years were excluded in this study.
2. Children who had enrolled prior speech and language therapy were excluded.
3. Children who have associated risk factors for speech- language delay such as autism, mental retardation, hearing impairment, cerebral palsy etc were excluded.
4. Child who history of high risk factor such as premature delivery, low birth weight and delayed birth cry was excluded.
5. Children who have family history of speech-language disorder was excluded from this study.
6. Children with organ transplants, liver disorder, kidney disorders, any other significant developmental disability and those on immunosuppressive therapy were excluded from this study.

Procedure

Total no. of 50 children with delayed speech and language disorder were equally divided in two subgroups in which each group containing 25 participants i.e. group A included children with delayed speech and language disorder who underwent for speech language therapy only and group B included children with delayed speech language development underwent for both Speech and language therapy along with *Suvarnaprashan*. For Group B, daily dose of *Suvarnaprashan* drops 2.5 ml (empty stomach) with minimum duration of at least 6 months was recommended. The details case history, audiological evaluation, speech language assessment; psychological evaluation was done for each child before diagnosing the patient. Details case history regarding prenatal, natal and postnatal high risk factors were obtained. Under audiological evaluation, immittance audiometry, oto-acoustic emission (OAE) test and auditory brainstem response audiometry (ABR) etc was done. Under speech and language assessment speech and language milestone and motor milestone development were examined. Speech and language assessment was done using appropriate standard test battery i.e. REELS (Receptive Expressive Emergent Language Scale) ^[9] by speech language pathologist.

Psychological evaluation was done for differential diagnosis among different disability like autism, intellectual disability, ADHD etc. All the information recorded in data collection sheet.

Subjective Parameters

REELS test battery for 0 -7 Years

Receptive Expressive Emergent Language Scale is reliable standardized test [9] which was designed to identify infants and toddlers who have language impairments. It is checklist (questionnaire) which is used to collect observational information reported by parents/ guardians for assess speech and language ability of child.

Gradation: This test scale has two subtest i.e. receptive language skill and expressive language skill[9].

1. Receptive language (understanding) describes ability of child to receive information presented through speech.
2. Expressive language (talking) means child’s ability to tell their needs, feelings, ideas and thoughts their own speech [9].

The overall improvement of speech and language development was recorded using this standardized test before and after the intervention for each group. Each participant was registered and diagnosis was done using standardized test battery tools. They were not paid for participation. Written informed consent was obtained from the parents /guardians prior to enrolment of the children.

RESULTS

SPSS (statistical program for social science version 17.0) software was used for statistical analysis of data. Descriptive statistics i.e. mean and standard deviations were used. Paired –test use for the purpose of test of significance before and after the treatment.

The findings of current study suggested that there are significant improvements receptive and expressive skills of speech and language milestone in children with delayed speech and language disorder before and after the intervention for both the groups (Figure 1). However, more improvement was seen for group B compared to group A (Figure 1).

Table 1: Indicated Mean, SD and significance level of language skills for both the groups

SN	Symptoms	Group A				Group B			
		RLB	RLA	ELB	ELA	RLB	RLA	ELB	ELA
1	Mean	24.6	28.3	11	19	25.6	33.9	11.4	27
2	SD	5	4.3	4.24	5.3	3.5	4.3	4.71	5.2
3	t-value	5.13*	3.85*	4.33*	3.47*	4.28*	5.29*	4.56*	6.23*

Note: RB-RLB;RA-RLA

EB-ELB; EA-ELA

* indicate P<.05

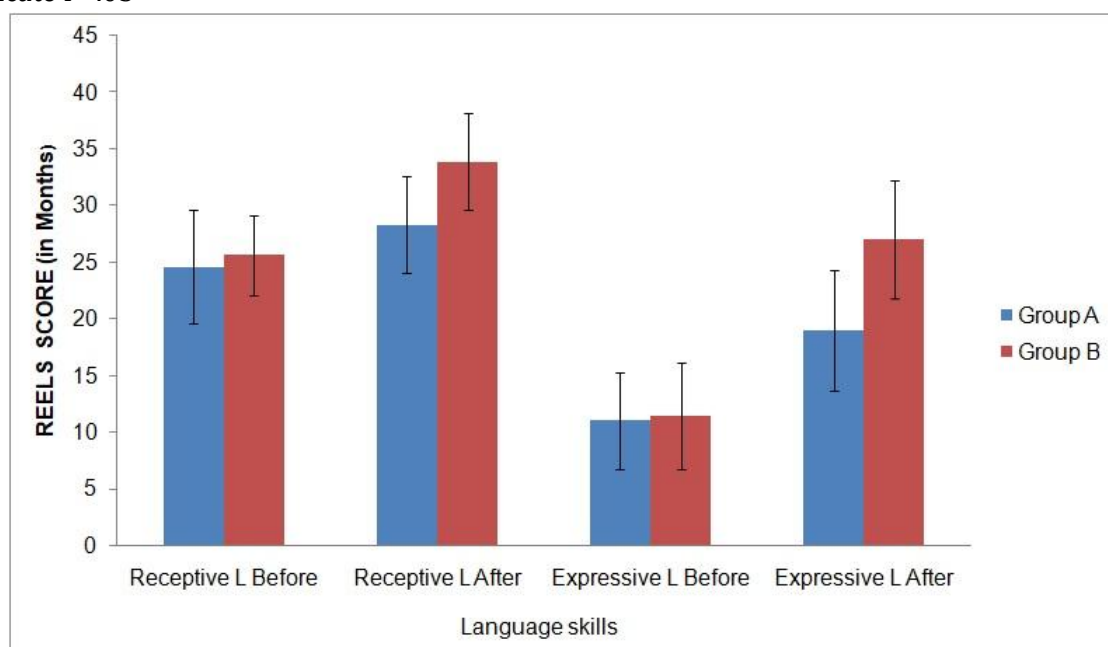


Figure 1: Indicated receptive and expressive language skills before and after the intervention for both the groups

DISCUSSION

The combine outcome of *Suvarnaprashan* with speech-language therapy in children with delayed speech and language disorder was the aim of current study. Delayed speech and language development in children are most common developmental problem and also have long-lasting impacts on behavior, education, social skills and employment [10]. Speech and language therapy (SLT) is most important part of rehabilitation services for children with delayed speech and language disorder [10].

The findings of recent study suggested that there were significant improvement before and after the intervention for both group A and B in receptive and expressive language skills (Table 1). However, Group B showed more significant improvement in both receptive and expressive language skills compared to Group A (Figure 1). It may be due to group B had undergone for both speech-language therapy along with *Suvarnaprashan*. In this study, minimum 6 months duration of *Suvarnaprashan Sanskara* was recommended. Previous studies also suggested that administration of *Suvarnaprashan* just on the day of *Pushya Nakshatra* (once in a month) not provide significant considerable outcome. Hence, it should be administered continuously to get the optimum therapeutic effects of children.[2] *Suvarnaprashana* is a *Rasayana Chikitsa*, which is not only immunity enhancer but also boost growth and early developmental milestone of children and reduces disability [2]. *Suvarnaprashan* is oral vaccine, advocated by the Ayurvedic paediatricians for promotion of health and intellect in children as reported[1-2]. It is mixture of *Suvarnaya bhasma* ghee, honey and *Medhya* and *Rasayana* herbs like *Brahmi* (*Bacopa monnieri*), *Yashtimadhu* (*Glycerrhiza glabra*), *Mandookaparni* (*Centella asiatica*), *Vacha* (*Acorus calamus*), *Guduchi* (*Tinospora cordifolia*) and *Shankhpushpi* (*Convolvulus pluricaulis*) [2]. Previous studies reveal that *Brahmi* is essential plant in traditional Ayurvedic medicine and it is also called as herb of grace[11]. It was also reported that the biological activities of Ayurvedic plant preliminary enhance mental ability, learning, concentration and neuro-cognitive function[11]. Although speech and language development are absolutely central to the cognitive development and the phonological loop is play a critical role in learning a language [12]. Hence it may assume that using *Suvarnaprashan* during critical development period may strengthen the phonological loop of language development in children. In this study, the duration of *Suvarnaprashan sanskara* for at least 6 months was recommended as previous studies reported that daily

dose of *Suvarnaprashan sanskara* for the duration of 1 month boost intelligence and if it is continue for at least 6 months then child have excellent in grasping (*Shrutadhara*) capacity [2-3]. Hence, continue uses of *Suvarnaprashan* improve the state of growth and nourishment of early speech and language milestone development of children.

CONCLUSION

Children with delayed speech and language disorder require long term intervention and Ayurveda opens a door for the management of children with delayed speech and language disorder shows the spark of expectations and optimism with the help of *Suvarnaprashan*. It is a need of time that researchers, physicians and scientists should concentrate on this area for further studies so that *Suvarnaprashan* can be utilized effectively as a therapeutic tool for children with delayed speech and language disorder. *Suvarnaprashan* is very simple, cost effective, infrastructure compatible, safe and prevention-centric approach. Hence, it should also be adopted globally as immunization program also for preventive measure of delayed speech and language and disability. *Suvarnaprashan* is an ancient oral immunization technique and its implications on practice and policy making, particularly, in integrating the principles of Ayurvedic care of children with delayed speech and language disorder with modern neonatology. The present study opened new dimensions and need of further research in different area of disability with large sample and long term follow up.

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