

A STUDY ON ROLE OF *VAK-SHUDDHIKAR CHURNA* IN MANAGEMENT OF CHILDHOOD SPEECH DISORDERS WITH SPECIAL REFERENCE TO STUTTERING

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ABSTRACT

Speech development is a critical barometer of both cognitive and emotional development. Language development occurs most rapidly between 2 to 5 years of age. During this period of learning of speech, usually child begins repetition of consonants, often followed by repetition of words. If this condition continues then child suffers from disability of speech. Modern literature classifies stuttering as a dysfluency type of speech disorder can lead into disability in later ages. In modern system of medicine there is no solution for stuttering other than speech therapy. There is no specific drug for the treatment of stuttering. The present study was aimed to see the efficacy of *Vak-shuddhikara Churna* in Management of Stuttering. **Methods**-30 children between 5-12 years age diagnosed as suffering from stuttering were selected randomly. *Vak-shuddhikara Churna* in the dose of 2 gms is applied over tongue with *Madhu* morning and night for period of 2 months. Follow up was taken in interval of 15 days. Assessment is made by Screening, Speech Sampling and improvement in clinical features. The Stuttering Severity Index (SSI) was assessment criteria was taken as it is the international accepted assessment criteria for Stuttering. **Results**-Assessment was done before and after the treatment using statistical tests on different parameters. Incidence was found more in males and 7-9 years age group. School performances were poor in stuttering children. It was noted that positive family history of stuttering. During the study it was found that Repetition and Prolongation were the two major symptoms along with Silent Pauses. **Conclusion**-It is concluded that *Gadgada* and Stuttering are etiologically and symptomatically similar and can be compared for better understanding the disease pattern. *Vakshuddhikara Churna* provided significant relief in the main Assessment i.e stuttering Severity Index and also provided significant relief in the symptoms of Stuttering such as Prolongations, Repetition and Hesitation.

Keywords: *Vakshuddhikara Churna*; *Gadgada*; Stuttering; Repetition, Prolongation.

INTRODUCTION

Speech is the unique characteristic feature of the human being. Speech is the ability to convey thoughts, ideas, or other information by means of articulating sound

into meaningful words. Fluent speech is essential for psychological development of the child and for proper convey of thoughts. It enables one person to convey know-

ledge to a roomful of other people.¹

Any fluent problem in speech will create a disturbance in the emotional and social behavior of the children like stuttering which is the most trouble shooting problem in childhood age group and leading to the disability in the later ages.²

Speech is the essential way of communication which can express the feelings better than any other ways of communication. Dysfluency in speech is the disorder of communication differentiates the individual as well as leads to disability and handicap in future life. Speech is a process where the vocal sounds are used to convey meaning between individuals. In present era speech disorder is one of the burning problems in childhood age. Stuttering is disruption in fluency of verbal expression which is characterized by involuntary, audible or silent, repetitions or prolongation in utterance of short speech element namely sound, syllables & words. Incidence of speech disorders affecting to pre-school children is up to 8 %, and in the mean time nearly 20% old children of 2years are thought to have delayed onset of speech.³

Speech disorders make the child physically, psychologically, emotionally and socially handicapped. Due to communication problem all round development of child will be badly affected. Further this creates low self esteem, less confidence and depression. Considering this challengeable ailment, present study entitled "*The Role of Vak-Shuddhikar Churna in management of Stuttering.*" was carried out.

Aims and objective of study

To assess the effect of *Vak-Shuddhikar Churna* in improvement of speech disorders

Materials and method

Source of Data:

30 Patient of Stuttering was selected from *Kaumarabhritya* outpatient department and In patient department of S D M C A and Hospital Hassan. All the Patients suffering from Stuttering were examined as per the clinical criteria prepared for the study. This is a single group observational study.

Diagnostic Criteria:

1. Any pauses, repetition, prolongation of vowels or words.
2. Slurring of words and distortion of vowels because of lack of strength and muscular control.
3. Dysfluency in speech.

Inclusion Criteria:

1. Patients of the age group of 5 to 12 years were included.
2. Speech related problems in consequence with delayed developmental milestones were included.

Exclusion Criteria:

1. Patient suffering from sensory aphasia or dysphasia.
2. Patient suffering from cleft pallet & cleft lip or the conditions where the surgical intervention is required.
3. Speech disorders secondary to disorders like cerebral palsy are excluded.
4. Speech disorders which are complicated with other systemic disorders.
5. Patient suffering from Dysphonia & Dysarthria.

STUDY DESIGN-

Application of the Drug:

The drug *Vak-Shuddhikara Churna*⁴ in the dose of 2grams was mixed with honey and rubbed over the tongue, twice daily for a period of 2 months. (Dose was fixed as per the guide line of pilot study conducted on speech disorders under the supervision of professor CHS Sastry) Duration of Treatment in the present study was of 2

months. Patients were asked to attend the OPD at the interval of once in 15 days for 2 months for assessment of the improvement.

Assessment Criteria:

1. Screening:

Counting numbers, Reciting days of week, Naming object or colors, for assessing the dysfluency

2. Speech Sampling:

The speech sample was taken by the various reading passages.

Collect the speech sample in more than one session.

3. Stuttering Severity Index (SSI)⁵

SSI = ASER + PMR + PSI + ADS

ASER	- Average syllable emission rate
DSER	- Dysfluent syllable emission rate
FSER	- Fluent syllable emission rate
PMR	- Product of multiple repetitions
PSI	- Product of stuttering instances
ADS	- Average duration speech sample
NMR	- Number of multiple repetition
AI	- Average Iteration

ASER = DSER – FSER

• $DSER = \frac{\text{No. of Dysfluent words}}{\text{Duration of Dysfluent speech}}$

• $FSER = \frac{\text{No. of fluent words}}{\text{Duration of fluent speech}}$

PMR = NMR × AI

• NMR = No. of multiple repetition.

$AI = \frac{NMR \times 100}{\text{No. of stuttering instances}}$

• $PSI = \frac{\text{No. of stuttering instances} \times 100}{\text{No. of words in passage}}$

• $ADS = \frac{\text{Duration of Dysfluent speech} \times 100}{\text{Total duration of speech sample}}$

Grading:-

- 0 to 40 % -- MILD
- 40 to 70 % -- MODERATE
- 70% & above -- SEVERE

Result-

Table-1 Effect of Vak-Shuddhikara Churna on SSI of 30 Patients of Stuttering

Mean score		% of reduction	S.D (±)	S.E (±)	‘t’ Value	P Value
BT	AT					

2.8	1.76	37.14	0.32	0.05	17.76	<0.001
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Table-2 Effect of Vak-Shuddhikara Churna on Reciting Week Days of 30 Patients of Stuttering

Mean score		% of reduction	S.D (±)	S.E (±)	't' Value	P Value
BT	AT					
2.83	1.76	37.80	0.52	0.09	10.94	<0.001

Table-3 Effect of Vak-shuddhikara churna on Counting Numbers of 30 Patients of Stuttering

Mean score		% of reduction	S.D (±)	S.E (±)	't' Value	P Value
BT	AT					
2.9	1.56	46.20	0.55	0.10	10.28	<0.001

Table-4 Effect of Vak-shuddhikara churna on Monosyllables of 30 Patients of Stuttering

Mean score		% of reduction	S.D (±)	S.E (±)	't' Value	P Value
BT	AT					
0.06	0.03	50	1.06	0.19	5.37	<0.001

Table-5 Effect of Vak-shuddhikara churna on Bi-syllables of 30 Patients of Stuttering

Mean score		% of reduction	S.D (±)	S.E (±)	't' Value	P Value
BT	AT					
0.1	0.03	70	1.04	0.19	5.47	<0.001

Table-6 Effect of Vak-shuddhikara churna on Prolongations of 30 Patients of Stuttering

Mean score		% of reduction	S.D (±)	S.E (±)	't' Value	P Value
BT	AT					
3.33	1.93	42.04	0.71	0.13	8.01	<0.001

DISCUSSION

In the present study 30 patients of Stuttering were studied, out of which maximum belonged to 5-7 years (50%), male sex (66.7%), Hindu religion (80%), middle class (56.6%), rural area (53.34%), *Pittaja-Kapha Prakriti* (43.3%), *Madhyama Satva Bala* (66.7%), Psychological problems(10%), Poor School Performances(40%), positive family history of stuttering(30%), delay development of mile stones(6.7%), neonatal Infections(10%), History of respiratory distress and seizures(6.66%) were recorded Stuttering (*Gadgada*) a disorder of human communication prevails 1- 5% of children population. It is defined as disruption of fluency of verbal expression and is by spasmodic repetition and prolongation of vocal sounds by fear, anxiety and struggle

to avoid speech errors. In current system of medicine Speech therapy takes the upper hand in the management of Stuttering.⁶ Present study was conducted to evaluate the role of *Vak-shuddhikar Churna* has been mentioned for same in *Astang Hridaya Uttartantra*⁷. This has been praised for its beneficial effects over speech disorder. All the children in the present study (100%) had Repetitions and Prolongation, 96.67% had Hesitations, 96.67% had silent pause and hard Contacts, 36.66% had physical concomitants. Only 6.67% children had monosyllable and bi-syllable defect. Repetition and prolongation are the main characteristics of stuttering which is spasmodic repetition of syllable or word. This is because of dysfluency and excitement while speaking. Hesitations and

pauses are the next main characteristic found.

Stuttering Severity Index (SSI) was the main assessment criteria adopted and after 2 months of the treatment with *Vak-shuddhikara Churna* there was 37.14% reduction in stuttering severity index which was statistically highly significant improvement. Similarly effect on Prolongations in the present study after 2 months of treatment with *Vak-shuddhikara churna* has shown reduction of (42.04%) reduction i which was statistically highly significant improvement. Mean while, in the present study effect on Repetition of the words after 2 months of treatment shown 43.34% reduction which was statistically highly significant results. Further effect on hesitation on uttering the words has shown 38.13% reduction in hesitation which was statistically highly significant results after 2 months of treatment with *Vakshuddhikara churna*. Further 39.87% reduction in pause after completion of the trial 2 months of treatment with *Vakshuddhikara churna* has been observed with statistically highly significant results. Similarly study on effect on hard contacts at the end of the trial showed 43.73% reduction in hard contacts which was statistically highly significant results. Similarly, significant effects were also found on reciting the days with 37.80% reduction in reciting the days of week which was statistically highly significant results. However on counting numbers 46.20% of reduction has been observed highly significant results. Similarly highly significant results were also found in uttering Monosyllables words and Bi-syllables words after 2 months of treatment. On the basis of the results of this thesis it can be said that local application of *Vak-shuddhikara Churna* on tongue for 2 months can provide

significant relief in the signs and symptoms of Stuttering children.

The *Gadgada* word itself indicates the disease in which fluency of speech is not present. It denotes the *Avyakta Vak* or *shabdha*. Stuttering is the dysfluency type of speech pathology where fluent speech is interrupted by repetition of syllable or word, pause, prolongation, hard contacts and hesitation.⁸ there are normal non fluent speech is observed in children during the speech developmental period and child is unaware of the problem. The child displays no special effort or tension during speaking. The primary behaviors are differentiated from secondary behaviors that gradually develop around the core of the small breaks and pauses in speech. The initial breaks in the timing of speech sometimes indicate the incipient stages of stuttering in young children. These breaks take the form of repetitions and prolongations. As awareness increases and struggle behavior develops, there may be blockages or disruptions in air flow, phonation, or even respiration.⁹

The disease *Gadgada* is caused because of *Avarana* of *Vata* by *Kapha* in *shabdhava-ha dhamani*.¹⁰ The causative factors like *Kapha* and *Vata* vitiating *nidana*, *Shukra* and *Artava dushti*, *Garbhini Vataja Nidana*, *Madhura rasa* excess intake by *Garbhini*, *Abhighata* to *Shiras*, *Adrishta* are contributing their role in manifestation of *Gadgada*.¹¹ Even the *Manasika karanas* like *Shoka*, *Bhaya*, *Udvega* can influence speech in person, because proper functioning of *Manas* is essential for *Indriya* to work physiologically¹². Causative factor of stuttering is mentioned as multifactorial like Genetics influence, familial inheritance learned behavior, psychological causes, CNS injury and primary to secondary as developmental and unknown cause.

Dhatukshaya and *Avarana* being responsible for *Vatavyadhi* and the same principle should be applied in case of *Gadgada*¹³. Prior cause is evident in *Garbhini vataja ahara vihara, Garbhopaghatakara nidana, leading garbha shoshana* leading to *Dhatukshayaja vatavridhi*. *Avarana* of *Vata* as a cause of *Gadgada* is seen in vitiation of *Vata* and *Kapha* as explained *Kaphavrita vata*. Mean while *Abhighata* to *Shiras* leading to *Achaya poorvaka prakopa* of *Vata* also cause *Gadgada*.¹⁴ As per contemporary sciences, Stuttering as it can be continued as secondary from primary dysfluency during developmental age of child generally by 5 or 6 years of age which is also called as Developmental Stuttering, Neurological stuttering, Psychogenic Stuttering. Behavioral Stuttering is certain because oriented types.

As per classics, *Gadgada* has been treated with *Yuktivyapashraya* and *Satvavajaya* treatments and *Dosha* involvement the various *Urdhvajatrugata* treatment procedures like *teekshna dravyana nasya (Avaranajanya)*, *Sneha Madhura dravyas (Dhatukshayajanya Gadgada)* can be adopted. The treatment of *Vatavyadhi*, *Kaphaghna vata avirodhi chikitsa* are quite beneficial. *Katu rasa, Ushna veerya, Katu vipaka dravyas* are helpful in *Kapha* and *Vata* involvement. Further *Rasayana, Swarya* and *Medhya* are also equally useful in reversing the pathology.¹⁵

Vak-shuddhikara Churna which has *Vacha* as main ingredient, which is also *Kapha Vata hara, Swarya, Medhya* hence proving beneficial in removal obstruction of *Vata* by *Kapha* by the virtue of *Ushna Veerya, Katu Vipaka. Medhya* property of the drugs helps to correct the psychological ailment.¹⁶ The other ingredients like *Kushta, Ajamoda, Jeerka*, which are having *Ushna Veerya, Katu Vipaka* also acts

as *Vata Kapha Shamaka*, which is beneficial in *Samprapti Vighatana*. *Pippali, Haritaki* and *Shunthi* are having *Snigdha, Teekshna Ushna* and *Madhura Vipaka* property and acts as *Rasayana* and *Balya* by which is helpful over *Vata* and *Dhatukshaya*. *Jeraka, Shunthi* and *Ajamoda* are having *Deepana, Pachana* properties will act as on *Agni* and help for proper assimilation and pharmacological actions of the drugs.

Drugs of *Vakshuddhikara Churna* were proved for its CNS depressant, muscle relaxant, anxiety relieving, respiratory stimulant, analgesic, sedative and brain nourishing action¹⁷. *Vacha & Kusta* are having spasmolytic & smooth muscle relaxant activity & also used in psychosomatic disorders. These properties are helpful in reducing symptoms, like repetition, block hard contacts, anxiety and stress in speech and thought process.¹⁷ Jaw muscle tension the force of air expelled for speech is corrected because of drug action, resulting in fluent speech.

CONCLUSION

Ayurveda classifies speech problems into three categories *Mooka, Minmina* and *Gadgada*. These are considered as the variety of *Vatavyadhis*. The *Avarana* pathology is especially mentioned for *Gadgada* where *Kapha* does the *avarana* for *Vata* in *Shabdghava Dhamani*. The *Gadgada* and Stuttering can be correlated by observing the causative factors and symptomatology. *Gadgada* is characterized by *Lupta Pada* or *Vyanjana* etc. The word 'adi' i.e., etc has given wide range to understand which can be fulfilled by the definition of Stuttering. The etiopathogenesis of the condition was not explained in detail in classics but it is clear that *Gadgada* is of multi factorial in origin by observing scattered references. From the present study it is clear

that *Gadgada* or Stuttering was found more in Males than Females and Genetic influence was seen in this manifestation of the disease.

1. Several *Yogas* are mentioned in Ayurvedic classics for *Gadgada* which can be used successfully.
2. *Vak-shuddhikara Churna* having *Teekshna guna, Tikta, Katu Rasa, Ushna Veerya, Katu Vipaka, Medhya, Vata Kapha Shamaka* action is highly useful in *Samprapti Vightana* of *Gadgada*. *Vacha* acts on Speech mechanism by which it improves the fluency.

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