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-
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. 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 preschool children is up to 8 %, and in the mean time nearly 20% old children of 2years are thought to have delayed onset of speech.

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 challenging 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 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)
SSI = ASER + PMR + PSI + ADS

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 \times AI

• NMR = \[
\frac{\text{No. of multiple repetition}}{\text{NMR} \times 100}\]

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

• 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

<table>
<thead>
<tr>
<th>Mean score</th>
<th>% of reduction</th>
<th>S.D (±)</th>
<th>S.E (±)</th>
<th>‘t’ Value</th>
<th>P Value</th>
</tr>
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<tbody>
<tr>
<td>BT</td>
<td>AT</td>
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**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 milestones(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. Present study was conducted to evaluate the role of Vak-shuddhikara Churna has been mentioned for same in Astang Hridaya Uttartantra. 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 Vakshuddhikara 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 Vakshuddhikara churna has shown reduction of (42.04%) reduction 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. 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 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. The disease Gadgada is caused because of Avarana of Vata by Kapha in shabdaha dhama. The causative factors like Kapha and Vata vitiating nidana, Shukra and Artava dushti, Garbhini Vataja Nidana, Madhura rasa excess intake by Garbhini, Abhigatha to Shiras, Adrishta are contributing their role in manifestation of Gadgada. Even the Manasika karanas like Shoka, Bhaya, Udvega can influence speech in person, because proper functioning of Manas is essential for Indriya to work physiologically. 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. Prior cause is evident in Garbhini vataja ahara vihara, Garbhospaghatakara 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 Kapahvrita vata. Mean while Abhigata to Shiras leading to Achaya poorvaka prakopa of Vata also cause Gadgada.

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 Yuktiyapashraya and Satavavajaya treatments and Dosha involvement the various Urdhvaatraguta treatment procedures like teekshna dravyana nasya (Avaranajanya), Sneha Madhura dravyas (Dhatukshayajanya Gadgada) can be adopted. The treatment of Vatavyadhi, Kaphaghna vata avirodhi chikitasa 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.

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. 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 action. 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. 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 patholgy is especially mentioned for Gadgada where Kapha does the avarana for Vata in Shabdha 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 factori al 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 Vighatana* of *Gadgada*. Vacha acts on Speech mechanism by which it improves the fluency.

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Source of Support: Nil
Conflict of Interest: None Declared