



# EVALUATE THE EFFECTIVENESS OF VATM ON DYSPHAGIA EXERCISES TO IMPROVE THE SWALLOWING ABILITY AMONG CVA PATIENTS IN SELECTED MEDICAL COLLEGE AND HOSPITAL, ODISHA.

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*Abstract:* Cerebrovascular accident (CVA) is one of the foremost reasons leading to mortality and morbidity throughout the world. It is the third biggest killer in India after a heart attack and cancer. Dysphagia is one of the most frequent symptoms in patients with stroke which is paralysis of throat muscles. A Quasi Experimental one group Pre-Test Post Test design used to evaluate the effectiveness of video assisted teaching module (VATM) on dysphagia exercises to improve the swallowing ability among CVA patient, admitted in a selected medical college and Hospital, Odisha with the objectives to assess the CVA patient for dysphagia, to assess the pre-test level of swallowing ability among CVA patient, to evaluate the effectiveness of VATM on dysphagia exercises and to find out the association between the post-test score with the selected demographic variables. The data were collected from 30 CVA patients using convenient sampling technique by using GUSS scale. For data analysis 't' test and chi-square test has done for descriptive and inferential statistics which shows highly significant difference scores of pre-test and post-test in selected group. The mean Post- Test score  $18.66 \pm 2.30$  (93.3%) was apparently higher than mean score of Pre-Test  $13.33 \pm 2.07$  (66.65%) showing that the VATM was effective on improving the swallowing ability among CVA patients.

*Index Terms* – Assess, Effectiveness, Video Assisted Teaching Module, Dysphagia, CVA Patient, Dysphagia Exercises

## I. BACKGROUND OF STUDY:

Dysphagia is a symptom so common and diverse that is often considered as a disease in its own right. Its severity can range from a trivial problem to a lethal condition. It can seriously compromise the quality of life of affected patient, therefore it required a prompt management. Cerebrovascular accident (CVA) is one of the preeminent reasons leading to mortality and morbidity throughout the world. Every year nearly 20 million people are diagnosed with CVA. Out of them, 5 million deaths occur due to consequences and 15 million survive; among those who survive, 5 million are disabled because of CVA. Dysphagia is one of the most common disabilities in patients with acute CVA. A study conducted by Blackwell (2007) identified Oro-pharyngeal dysphagia prevailing in 56% of CVA patients which can lead to serious and life-threatening complications, such as nutritional deficiency, aspiration pneumonia and immune-compromised health. These statistical data emphasize the importance of rehabilitation among CVA survivors with dysphagia. Initially, rehabilitative interventions for dysphagia were mostly insisting on instructions regarding safe swallowing rather than their improvement in swallowing ability. Dysphagia is one of the most frequent symptoms in patient with stroke paralysis of throat muscles. This condition can disrupt the swallowing process and make eating, drinking, taking medicine and breathing difficulty. Cerebrovascular disorder is an umbrella term that refers to a functional

abnormality of the central nervous system that occurs when the normal blood supply to the brain is disrupted. The mechanism of swallowing is coordinated by operation of the mouth, pharynx, and esophagus. Human beings swallow 600 times per day. Under normal circumstances, swallowing is performed without thought or effort. Dysphagia is the health profession's term used to describe difficulty swallowing both solid and liquid foods. Exercise rehabilitation has long been a treatment for patients with dysphagia. A variety of exercises exist, ranging from direct to indirect, isolated to combined and those incorporating swallowing or non-swallowing exercises. Rehabilitative exercises are those meant to change and improve the swallowing physiology in force, speed or timing, with the goal being to produce a long-term effect, as compared to compensatory interventions used for a short-term effect. Exercising swallowing muscles is the best way to improve ability to swallow. Here, some different exercises developed by dysphagia rehabilitation experts that include: such exercises for the jaw such as open jaw stretch, sideway jaw stretch, jaw circle, exercises for the lip, exercises for tongue & swallowing exercises such as shaker exercise, effortful swallow, mask maneuver.

## II NEED OF THE STUDY

According to WHO, stroke kills 17 million people a year, which is almost one third of all deaths globally. By 2020 stroke will become the leading cause of both death and disability in the world wide, with the number of fatalities projected to increase to over 20 million a year and by 2030 to over 24 million a year. Stroke is the third leading cause of death in the world. The prevalence of stroke in 2008 was 6,500,000. On average every 40 sec someone in the world has stroke. Stroke is the third leading cause of death in the United States. Over 143,579 people die each year from stroke in the United States. Each year, about 795,000 people suffer a stroke. About 600,000 of these are first attacks, and 185,000 are recurrent attacks<sup>3</sup>. In 2008, stroke accounts for 7% of all deaths -15,409 Canadians. Every 7 minutes a Canadian dies of stroke or cardiovascular disease. Stroke is Australia's second greatest killer disease and a leading cause of disability. In 2010, Australians will suffer around 60,000 new and recurrent strokes. That is one stroke in every 10 minutes.

## III OBJECTIVES

The study conducted with the objectives of to assess the CVA patient for dysphagia, to assess the pre-test level of swallowing ability, to evaluate the effectiveness of VATM on dysphagia exercises and to find out the association between the post-test score with the selected demographic variables.

## IV. RESEARCH METHODOLOGY

The methodology section outline the plan and method that how the study is conducted. For present study we have applied quantitative approach, Quasi Experimental One Group Pre-Test Post-Test design. This study carried out at SCB Medical College and Hospital, Cuttack, Odisha .

### 4.1 Population and Sample

Convenient sampling technique used by researcher. Total number of participants for the study was 30. Inclusion criteria were those willing to participate in the study, having mild & moderate swallowing ability and having normal blood pressure.

### 4.2 Data and Sources of Data

For this study primary data has been collected. A video assisted teaching module on dysphagia exercises was used to assess the swallowing ability among CVA. Tools consisting up Part- A with Socio-demographic variables followed by Part-B Gugging swallowing screen consists of two sections. They were Indirect swallowing test and direct swallowing test. Validation and reliability of tools checked and obtained clearance from authority to use the tools.

### 4.3 Theoretical framework

Variables of the study contains dependent and independent variable. In this study dependent variable is level of dysphagia among CVA patient while the independent variable is Video assisted teaching module on dysphagia exercises. A conceptual framework includes one or more formal theories as well as other concepts and empirical findings from the literature. It is used to show relationships among these ideas and how they relate to the research study. The conceptual framework of the study is based on General systems theory with Input, Throughput, Output and Feedback. This theory was first introduced by Ludwig Von Bertalanffy (1968).

## V. DATA ANALYSIS

### 5.1 Descriptive Statistics

Descriptive Statics has been used to find the mean, standard deviation, mean and normally distribution of the data of all the variables of the study. Here it is used for Frequency and percentage wise distribution of data on demographic variables of CVA patient.

### 5.2 Inferential Statistics

Inferential statics used for to evaluate the effectiveness of VATM on dysphagia exercises and to find out the association between the post test score with the selected demographic variables.

## VI. RESULTS AND DISCUSSION

### 6.1 Results of Descriptive Statics of Study Variables

#### Frequency and Percentage distribution of Pre-Test level of Dysphagia

Sl no	LEVEL OF DYSPHAGIA	Frequency	Percentage
1	MODERATE	26	86.6%
2	SLIGHT	4	13.3%
3	NO DYSPHAGIA	-	-

**Table -1:** Frequency, Percentage, Mean Pre-Test level of Dysphagia

During Pre-Test 26 (86.6%) participants were having moderate, 04(13.3%) were having slight whereas none of them were having no dysphagia.

#### Frequency and Percentage distribution of Post-Test level of Dysphagia

Sl no	LEVEL OF DYSPHAGIA	Frequency	Percentage
1	MODERATE	0	0
2	SLIGHT	22	73.3%
3	NO DYSPHAGIA	8	26.6%

**Table -2:** Frequency, Percentage, Mean Post-Test level of Dysphagia

During post-Test none of participants having moderate dysphagia. 22 (73.3%) were having slight and 8 (26.6%) were having no dysphagia.

### 6.1 Results of Inferential Statics of Study Variables

#### For evaluation of effectiveness of VATM

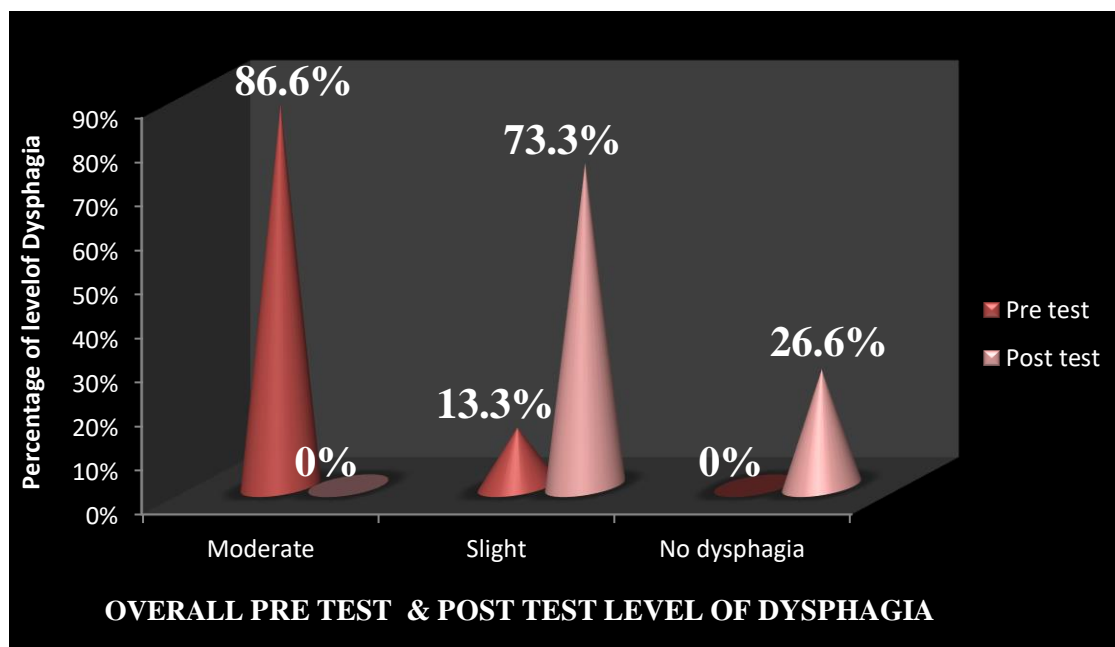
Area	' t ' value	Level of significance
Swallowing ability	17.14	Highly significant

(DF=29), (Table Value= 2.05), ( $P \leq 0.05$ )

**Table -3:** t –Value for evaluate the effectiveness of VATM on Level of Dysphagia among CVA Patients

Above table -3 revealed that Video Assisted Teaching Module was effective and there was a difference between pre & post test scores of level of dysphagia among CVA patient regarding implementation of dysphagia exercises

## Comparison of Pre-Test and Post-Test level of Dysphagia on administration of VATM among Participants



**Fig -1:** percentage wise distribution of pre-Test and Post-Test level of Dysphagia.

Fig-1 shows that in pre-test majority 86.6% of the CVA patient had moderate level of dysphagia, 13.3% of the CVA patient had slight level of dysphagia and in other side in post -test the level of joint pain reduced whereas the data shows that 73.3% of them had slight dysphagia and 26.6% of them had no dysphagia.

#### Association of Post-Test e score with selected socio-demography variables

Demographic Variables	Chi Square ( $\chi^2$ ) Value	DF	Table Value	Level Of Significance
Age (in years)	0.22	2	5.991	Not significant
Sex	0.62	1	0.003	Significant
Educational qualification	0.7	4	9.488	Not significant
Occupation	0.20	3	0.35	Not significant
Risk factors	0.01	3	0.35	Not significant
Previous history of CVA	0.03	1	0.003	Significant

**Table -4:- Association of Post-Test score with selected socio-demography variables (P= ≤ 0.05)**

## VII. RECOMMENDATION

Based on the findings of the study the following recommendations were made:

- A similar study can replicates with different demographic variables.
- A similar study may be replicated with a control group.
- Comparative study can be done between different medical college and hospital across the state.
- A similar study can be done with a larger population to generalize the findings.

## VIII. CONCLUSIONS

This study conducted to evaluate the effectiveness of VATM on Dysphagia exercise to improve the swallowing abilities among the CVA patients at selected medical college and Hospital at Odisha. Findings of the study reveal that the VATM was effective in improving the swallowing abilities of the participants.

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