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Effectiveness of Video Assisted Teaching Module (VATM) on Knowledge Regarding Dual Task Exercise (DTE) among Patients with Cerebrovascular Accidents (CVA) Attending Tertiary Care Hospitals of Maharashtra State

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Abstract: ***Aim of the study: The study aims to find the level of depression among alcoholic by using beck depression inventory in order to develop an information booklet in certain de-addiction center Bhopal [mp]" Primary objective-1.*** **To assess the level of depression among alcohol dependence 2. To identify the association between selected demographic variable with BDI scale score 3. To develop an information booklet on management of depression.** ***Method: a pre-experimental one group pretest posttest design and quantitative approach was carried out on 80 staff nurses selected by convenient sampling technique to test effectiveness of structured teaching programme. The data was collected by using structured questionnaire consists of 30 items. Results: The presents study evaluates and found that demographic variables, majority 62.5% of them were in the age group of 21-30 years, majority of staff nurses 75% of them were females, majority 72.5% of the staff nurses were educated up to GNM, majority (46.3%) of the staff nurses had working experience of 0-5 years, majority (17.5) % of the staff nurses had information from mass media. Interpretation and conclusion: The data were analysed by applying descriptive and inferential statistics. The result of the study indicated that after intervention there was an improvement in the knowledge and they gain good knowledge about stroke rehabilitation. Analysis data shows that highly significance difference found between the pre-test and post-test knowledge scores at the level of (P<0.05). The hypothesis is proved and accepted.***

1. Introduction

Now-a-days alcohol plays a very Stroke is the leading cause of acquired adult disability worldwide and the fourth most common cause of death in developed countries. Primary stroke subtypes include ischemic stroke, intracerebral hemorrhage (ICH), and subarachnoid hemorrhage (SAH). Each stroke subtype has differing etiologies, outcomes, and management strategies. The past 20 years has seen considerable advances in diagnosis (emergence of widely available neuroimaging) and treatment of acute stroke. In addition, there is an increased awareness of the importance of covert stroke (stroke on neuroimaging without a history of acute clinical stroke). In this chapter we provide an overview of stroke, with a primary focus on ischemic stroke, which is the most common cause of stroke worldwide.

Cerebrovascular accident is the sudden death of some brain cells due to lack of oxygen when the blood flow to the brain is impaired by blockage or rupture of an artery to the brain. It is also referred to as a stroke. The common symptoms of stroke are weakness or paralysis of one side of the body with partial or complete loss of voluntary movement or sensation in a leg or arm, speech problems, weak face muscles causing drooling and numbness. A stroke involving the base of the brain can affect balance, vision, swallowing, breathing and even unconsciousness[2]

2. Need for the study

Balance is ability to maintain center of mass within a proximal area and keep stable posture when moving the body. CVA limits mobility over a long period of time by causing physical and functional disorders. Balance is disturbed following CVA with impairment in steadiness, symmetry and dynamic stability. CVA patient's loose functions of the motor, sensory and higher brain cognitive faculties to various degrees which lead to diminished balance.

In India, the cumulative incidence of stroke ranged from 105 to 152/1, 00, 000 persons per year, and the crude prevalence of stroke ranged from 44.29 to 559/1, 00, 000 persons in different parts of the country during the past decade. These values were higher than those of high-income countries

Therefore, the investigator is based on reviews and observations is interested to conduct study on video assisted teaching module on knowledge of dual task exercise among CVA patients

3. Review of Literature

Review of literature was carried out on recent and ongoing research relevant to the present study. Normal function of the brain's control centers is dependent upon adequate supply of oxygen and nutrients through a dense network of blood vessels. Blood is supplied to the brain, face, and scalp via two major sets of vessels: the right and left common

carotid arteries and the right and left vertebral arteries. The common carotid arteries have two divisions. The external carotid arteries supply the face and scalp with blood. The internal carotid arteries supply blood to most of the anterior portion of the cerebrum. Any decrease in the flow of blood through one of the internal carotid arteries brings about some impairment in the function of the frontal lobes. Occlusion of one of the vertebral arteries can cause many serious consequences, ranging from blindness to paralysis. An ischemic stroke or transient ischemic attack (TIA) occurs if an artery that supplies oxygen-rich blood to the brain becomes blocked. Many medical conditions can increase the risk of ischemic stroke or TIA. For example, atherosclerosis. Plaque in an artery can crack and these clots can partly or fully block an artery. Plaque can build up in any artery in the body, including arteries in the heart, brain, and neck. The clot or plaque can travel through the bloodstream and get stuck in one of the brain's arteries. This stops blood flow through the artery and damages brain cells. Heart conditions and blood disorders also can cause blood clots that can lead to a stroke or TIA. A dual task is the concurrent performance of two tasks with distinct and separate goals. In the daily mobility of an older adult, the need to hurry to get to a phone, a door, or the bathroom is a complex single task merely adding the element of time as pressure. Finally, by way of definition for clarity, walking and speaking on a cell phone is a dual task, but merely carrying a phone that is turned off, is not. The relative success of dual tasking-how well a person can tolerate the addition of a second (or third) task can be expressed using terms such as Dual Task Tolerance (DTT) or dual task capacity.

Assumptions

CVA patients may have some knowledge on Dual Task Exercise The demographic variables may patients influence on knowledge of CVA patients with regard to know the Dual Task Exercise. VATM on Dual Task Exercise may enhance the knowledge of CVA

Delimitation s:

The study was limited to-

- Assessment of knowledge
- 60 CVA patients
- Selected hospital of Maharashtra state

Hypothesis:

- H_1: There is a significant difference between the pre-test and post-test knowledge scores on DTE among patients with CVA.
- H_2: There is a significant association between the post-test knowledge

Methodology

Research approach: An experimental research approach was used for the study

Research design: Quantitative, pre-experimental one group pretest posttest design

Variables under study:

- Independent variable: VATM on DTE
- Dependent variable: knowledge on DTE

Accessible population CVA patients available for the research study were accessible population.

Sample and sampling technique

Sample: CVA patients attending 04 tertiary care hospitals of Maharashtra state were the samples for present study.

Sample size: Sample's size was 60 calculated based on sample size determination formula

Sampling technique: The convenient sampling technique was used to select the CVA patients from 04 selected tertiary care hospitals of Maharashtra state. As per the tentative schedule of data collection, the investigator has selected the CVA patients conveniently on first come first basis after informed consent. The employees of OPD registration counter was consulted for expected visits of CVA patients.

Inclusion criteria:

The CVA patients who;

- Gave consent to participate in the study
- We're be available at the time of data collection
- Who were able to read and understand Marathi language

Exclusion criteria:

The CVA patients;

- Who were critically ill
- With cognitive impairment like disorientation, mental confusion and irritations
- With hypotonic activity

Tool preparation

Development of tool: The tools were constructed based on objectives and conceptual frame work. However, the investigator has adopted following steps prior to development of tool for data collection from CVA patients attending tertiary care hospitals of Maharashtra state. Extensive review of literature from various resources like books, journals, periodicals, magazines, med-line searches etc. Consultation and discussion with experts from nursing, research and biostatistics. Personal and professional experience of investigator with CVA patients attending tertiary care hospitals of Maharashtra state. After such deliberations, the investigator has prepared the blue print on SAQ and VATM. Self-Administered Questionnaire
And (SAQ) Video Assisted Teaching Module (VATM)

Description of Tools

1) **Self-Administered Questionnaire:** on DTE was used in the form of Multiple-Choice Questions (MCQ) to assess the knowledge of CVA patients. The SAQ

contains Part A & B. The Part A is related demographic variable, and the Part B is related to MCQ on DTE.

Part A: is related to seeking information on demographic variables of CVA patients attending tertiary care hospitals of Maharashtra state.

Part B: is related to knowledge items on DTE in the form of MCQ. It has a total of 30 questions with a total score of 30. Each question/ item had four options and the score for each right answer was 1 mark and for wrong answer 0 mark was awarded. However, they are categorized as; general information stroke, prevention and management of stroke and information regarding DTE. For wrong answer 0 marks was awarded.

Validation of the tool: The Content validity of SAQ and VATM were established in consultationwith10 experts from the field of Medical Surgical Nursing (n=7), physician (n=1) statistician (n=1), language expert (n=1). The suggestions of subject experts were taken into consideration and reframed the same.

Reliability: Data was collected from 06 CVA patients attending hospitals (other than the main study area) to test reliability of SAQ. The Test re-test method was used where Karl Pearson's correlation coefficient was calculated and found to be reliable (r = 0.88).

Feasibility of the study: The investigator conducted a Pilot study.

Pilot study: The pilot study was conducted from 18/10/2019 to 25/10/2019 after prior permission from concerned authority. Six (06) CVA patients were selected using convenient sampling technique from selected tertiary care hospital of Maharashtra state. To assess the feasibility of the study and to decide the plan for analysis

Data collection procedure:
The investigator has obtained formal permission from consent authorities in selected hospital, Maharashtra for the conduct research study. The inform consent was obtained from each CVA patients for their willingness to participate in the study and data will be kept confidential.

Pre-test: The investigator visited to each CVA patient and handed over the SAQ with instructions. They were requested to read the questions one by one, and put (√) mark on right option mentioned against each question. The doubts were clarified during administration of pre-test and collected backfilled in SAQ immediately after 30 minutes. However, the pre-test data was collected from 16th to20th December. Around, 12-15 CVA patients were chosen daily for pre-test.

Intervention
On the same day of pre-test, the CVA patients (around 12-15 daily) were requested to assemble in conference hall. The investigator made the patients comfortable with good seating arrangement, calm atmosphere, etc. And, the health teaching on DTE was provided by the investigator using LCD around 20-25 minutes. During presentation, the doubts of CVA patients were clarified. And further, they were informed with regard to date and time of posttest. However, the address and contact numbers were collected from the CVA patients.

Post test
The post test was conducted using same tool used for pre-test after 7 days of intervention i. e.23rd to 29th December. The CVA patients those who were unable to visit the respective hospital, the investigator visited their place of residence for post–test data collection. However, after data collection, the researcher thanked all patients' as well concerned authorities for their cooperation.

Plan for data analysis:-The data collected was plan to organized, tabulated analyzed, by using descriptive statistics such as; percentage, mean, and standard deviation and the inferential statistics such as; One-way ANNOVA and paired 't' test to test the hypothesis with SPSS software. .

Scoring mode: Score 1 was given to every correct answer.0 was given to every wrong answer. Based on the percentage of scores, level of knowledge was graded as **Poor**-6 to below **Average**-7 to 12**, Good**-13 to 18. **Very good**-19 to 24, **Excellent** – 25 to 30

4. Results

Organization of the data: The collected data is tabulated, analyzed, organized and presented under the following sections:

Table 1.1: Distribution of patients according to their demographic characteristics, n=60

Demographic Variables	*No. of patients*	*Percentage (%)*
Age (yrs)		
≤50 yrs	14	23.3
51-60 yrs	22	36.7
>60 yrs	24	40.0
Gender		
Male	42	70.0
Female	18	30.0
Marital Status		
Married	41	68.3
Unmarried	6	10.0
Divorced/Separated	5	8.3
Widow	8	13.3
Educational Status		
SSC and below	12	20.0
HSC	13	21.7
Graduate	31	51.7
PG and above	4	6.7
Occupation		
Self Employed	18	30.0
Govt. Employee	15	25.0
Private Employee	19	31.7
Other	8	13.3
Monthly Family Income (Rs)		
≤5000 Rs	3	5.0
5001-10000 Rs	4	6.7
10001-20000 Rs	20	33.3
≥20001 Rs	33	55.0
Place of residence		
Rural	6	10.0
Urban	54	90.0

a) Percentage distribution of knowledge on DTE among CVA patients before intervention

Table 4.1: Distribution of knowledge among CVA patients before intervention, *n=60*

No.	Level of knowledge	frequency of CVA patients	Percentage of knowledge
1	Excellent	-	-
2	Very good	3	5%
3	Good	22	36.67%
4	Average	29	48.3%
5	Poor	6	10%
Overall		60	40.8%

b) Mean and standard deviation of knowledge on DTE among CVA patients before intervention

Table 4.2: Mean and standard deviation of knowledge among CVA patients before intervention, *n=60*

No	Level of knowledge	Frequency of CVA patients	Mean	SD
1	Excellent	-	-	-
2	Very good	3	19.33	0.57
3	Good	22	15.77	1.97
4	Average	29	10.34	1.65
5	Poor	6	5.16	1.32
Overall		60	12.26	4.11

Before intervention, the highest mean knowledge (19.33+0.57) score was for very good level of knowledge whereas none of them had excellent knowledge.

c) Area wise distribution of Knowledge on DTE among CVA patients before intervention

Table 4.3: Area wise distribution of Knowledge among CVA patients before intervention, *n=60*

Sr. No	Area	Item	Percentage of knowledge
1	General information on stroke	6	43.6%
2	Management of stroke	6	34.7%
3	Knowledge on DTE	18	42%
Overall		30	40.8%

d) Area wise Mean and standard deviation of knowledge on DTE among CVA patients before intervention

Table 4.4: Area wise Mean and standard deviation of knowledge among CVA patients before intervention, *n=60*

Sr. No	Area	Item	Mean	Standard Deviation
1	General information on stroke	6	2.61	1.43
2	Management of stroke	6	2.08	1.35
3	Knowledge on DTE	18	7.56	2.45
Overall		30	12.26	4.11

e) Percentage wise distribution of knowledge on DTE among CVA patients after intervention

Table 4.5: Distribution of knowledge on DTE among CVA patients after intervention, *n=60*

Sr. No	Level of knowledge	Pre-test		post-test		Difference in percentage
		Frequency	Percentage	Frequency	Percentage	
1	Excellent	-	-	2	3.3%	+3.3%
2	Very good	3	5%	21	35%	+30%
3	Good	22	36.67%	30	50%	+13. %
4	Average	29	48.3%	7	11.6%	+36.7%
5	Poor	6	10%	0	-	-10%
Overall		60	40.8%	60	57.1%	+16.3%

f) Mean, SD and mean percentage of knowledge on DTE among CVA patients after intervention

Table 4.6: Mean, SD, mean percentage of knowledge on DTE among CVA patients after intervention, *n=60*

Sr. No	Level of knowledge	Pre-test		Post-test		Difference in mean %	
		Mean± SD	Mean%	Mean± SD	Mean%	Mean± SD	Mean%
1	Excellent	-	-	-	-	-	-
2	Very good	19.33±1.97	64.44%	26±1.41	86.66%	6.67±0.56	+22.22%
3	Good	15.77±1.97	52.57%	19.95±1.20	66.50%	4.18±0.77	+13.93%
4	Average	10.34±1.56	34.48%	16.03±1.60	53.44%	5.69±0.04	+18.96%
5	Poor	5.16±1.33	17.22%	11±0.81	36.66%	5.84±0.52	+19.44%
Overall		12.26±4.11	40.86%	17.15±3.52	57.16%	4.89±0.59	+16.3%

g) Area wise percentage distribution of knowledge on DTE among CVA patients after intervention

Table 4.7: Area wise percentage distribution of knowledge on DTE among CVA patients after intervention, *n=60*

Sr. No	Area	Item	Pre test	Post test	Difference in %
1	General information on stroke	6	43.61%	68.33%	+24.72%
2	Management of stroke	6	34.72%	51.38%	+16.66%
3	Knowledge on DTE	18	42.03%	55.37%	+13.34%
Overall		30	40.88%	57.16%	+16.28%

i) Area wise Mean, SD, mean % of knowledge on DTE among CVA patients

Table 4.8: Area wise Mean, SD, mean % of knowledge on DTE among CVA patients, *n=60*

Sr. No	Area	Pre-test		Post-test		Difference in mean %	
		Mean ± SD	Mean%	Mean ± SD	Mean%	Mean± SD	Mean%
1	General information on stroke	2.61±1.43	43.6%	4.10±1.11	68.3%	1.49±0.32	24.7%
2	Management of stroke	2.08±1.35	34.7%	3.08±1.13	51.3%	1±0.22	16.6%
3	Knowledge of DTE	7.56±2.45	42%	9.96±2.44	55.3%	2.4±0.01	13.3%
Overall		12.26±4.11	40.8%	17.15±3.52	57.1%	4.89±0.59	16.3%

j) Effectiveness of VATM on DTE among CVA patients based on areas

Table 4.9: Area wise effect of VATM on DTE among CVA patients, *n=60*

Sr. No.	Area of knowledge	Pre test	Post test	t value	p value
		Mean ±SD	Mean ±SD		
1.	General information on stroke	2.61±1.43	4.10±1.11	9.05	0.0001 S. p<0.05
2.	Management of stroke	2.08±1.35	3.08±1.13	6.01	0.0001 S. p<0.05
3.	Knowledge on DTE	7.56±2.45	9.96±2.44	7.69	0.0001 S. p<0.05
Overall		12.26+4.11	17.15+3.52	11.68	0.003 S. p<0.05

k) Overall effect of VATM on DTE among CVA patients according to the level of knowledge

Table 4.10: Overall effect of VATM on DTE among CVA patients, *n=60*

Overall	Mean	Standard deviation	Mean difference	t value	P value
Pre test	12.26	4.11	4.88+ 3.23	11.68	0.003***
Post test	17.15	3.52			

*df; 2.00 p < 0.05 ***=Highly significant*

With Student's paired 't' test applied at 5% level of significance, overall 't' value was found to be 11.68 whereas the corresponding p value was 0.003 which is statistically highly significant. Hence, it is interpreted that the VATM was effective in improving the knowledge of CVA patients regarding DTE and the Research Hypothesis H_1 is accepted.

Testing of hypothesis

Section V: Association between posttest knowledge score DTE and demographic variables of CVA Patients.

Table 1.9: Association of posttest knowledge score on DTE among CVA Patients with their demographic variables *n*=60

		No. of patients	Mean posttest knowledge score	F-value	p-value
Age (yrs)	≤50 yrs	14	17.14±2.93	2.84	0.066 NS, p>0.05
	51-60 yrs	22	18.40±3.54		
	>60 yrs	24	16±3.56		
Gender	42	17.52±3.57	1.26	0.21 NS, p>0.05	0.87 NS, p>0.05
	18	16.27±3.33	23.85±3.34		
Marital Status					
	Married	41	16.70±3.90	0.87	0.56 NS, p>0.05
	Unmarried	6	18±1.41		
	Divorced/Separated	5	17.20±3.03		
	Widow	8	18.75±2.49		
Educational Status					
	SSC and below	12	18.25±2.37	2.03	0.12 NS, p>0.05
	HSC	13	18.53±4.57		
	Graduate	31	16.38±3.11		
	PG and above	4	15.25±4.34		
Occupation					
	Self Employed	18	17.44±2.28	1.15	0.33 NS, p>0.05
	Govt. Employee	15	15.73±4.04		
	Private Employee	19	17.89±4.25		
	Other	8	17.37±2.61		
Monthly family income (Rs)					

	≤5000 Rs	3	18.33±2.88	1.08	0.36 NS, p>0.05
	5001-10000 Rs	4	17±1.82		
	10001-20000 Rs	20	18.15±3.49		
	≥20001 Rs	33	16.45±3.68		
Area of residence	Rural	6	17.33±2.50	0.13	0.89 NS, p>0.05
	Urban	54	17.12±3.63		

Testing of Hypothesis

H_1: There is a significant difference between pre-test and post-test knowledge score on DTE among patients with CVA

In the present study, a significant difference (t=11.68; p=0.003 at 0.05level of significance) between pretest and post test knowledge score among CVA patients was observed and hence, it is inferred that the VATM was effective in improving the knowledge of CVA patients regarding DTE and the Research Hypothesis H_1: There is a significant difference between pre-test and post-test knowledge score on DTE among patients with CVA is accepted. The study findings are supported with a similar study conducted by Jae-Il Kim (2013) among CVA patients where the study findings showed that there was a significant gain in knowledge (t=13.52; p=0.001) by patients after a health teaching and research hypothesis was accepted.

5. Summary

The study was undertaken to assess the effectiveness of VATM on DET among CVA patients. An experimental approach with one group pre-test post-test design was used to collect data among 60 CVA patients drawn conveniently using inclusion and exclusion criteria.

The following hypothesis were made by the investigator-

- H_1: There is a significant difference between the pre-test and post-test knowledge scores on DTE among patients with CVA.
- H_2: There is a significant association between the post-test knowledge scores on DTE among patients with CVA and selected demographic variables

The study was conducted in 4 selected tertiary care hospitals of Maharashtra state. The SAQ and VATM were used to collect the data among CVA patients. Accordingly, collected data were analyzed using descriptive and inferential statistics. The data collected was organized, tabulated and analyzed using descriptive statistics such as; percentage, mean, and standard deviation and the inferential statistics such as; One-way ANNOVA and paired 't' test to test the hypothesis with SPSS software.

There was a significant difference between mean pre test and post test scores of knowledge among CVA patients (t=11.68, p<0.05). Hence, Hypothesis H_1: There is a significant difference between the pre-test and post-test knowledge scores on DTE among patients with CVA was accepted. There was no significant association between knowledge scores and selected demographic variables of CVA patients. Hence, Hypothesis H_2: There is a significant association between the post-test knowledge scores on DTE among patients with CVA and selected demographic variables were rejected.

6. Conclusion

A video assisted teaching module on Dual Task Exercise was used among conveniently selected 60 patients with Cerebrovascular Accidents attending tertiary care hospitals of Maharashtra state. The post-test knowledge scores on Dual Task Exercise has shown highly significant difference in "t" value (t=11.6, p<0.05) among Cerebrovascular Accidents patients attending tertiary care hospitals. Therefore, the video assisted teaching module on Dual Task Exercise was effective among patients with Cerebrovascular Accidents.

7. Recommendations

The present study recommendations the following in different areas –

- A similar study can be done on large scale
- comparative study can be undertaken to find out the difference in knowledge among patients attending urban and rural hospitals
- A similar study can be undertaken with a control group.
- A similar study can be undertaken on domains of attitude
- Same study can be conducted in rural hospital and government multi-specialty hospitals.
- A similar study can be conducted among patients those who are not literate
- A similar study can be conducted by using self-instructional module

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