



RESEARCH ARTICLE

EFFECTIVENESS OF SINGLE TASK EXERCISE ON IMPROVING PHYSICAL BALANCE AMONG CEREBRO VASCULAR ACCIDENT (CVA) PATIENTS

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ARTICLE INFO

Article History:

Received 24th June, 2018
Received in revised form
27th July, 2018
Accepted 20th August, 2018
Published online 30th September, 2018

Keywords:

Physical balance,
Single task exercise,
Physical exercise,
Stroke patients and rehabilitation.

ABSTRACT

Objective: The main purpose of the study is to assess the existing level and post test level of physical balance among cerebro vascular accident patients, to evaluate the effectiveness of single task exercise on physical balance among cerebro vascular accident patients and to associate the effectiveness of single task exercise among cerebro vascular accident patients with their demographic variables. **Material and Methods:** A pre experimental one group pre test post test design was adopted for the study. A total number of 50 subjects were selected for this study by using purposive sampling technique. All subjects were evaluated by mini mental status examination, modified rankin scale and Tinetti Assessment tool followed by intervention was administered for another 4 weeks consecutively. At the end of 4th week, the post test was conducted for the subjects to assess the level of physical balance by tinetti assessment tool. **Results and conclusion:** The results of the study revealed that, In pre test, 48(96%) subjects had high risk of fall and only 1 (2%) subject had moderate and low risk of fall in each respectively but, in the post test, most of the subjects were 34 (68%) had low risk of fall, 10(20%) subjects had high risk for fall and only minimum number of subjects 6(12%) had moderate risk of falls, which shows the intervention are effective. Hence this study results prove that the intervention which are administered to improve the physical balance was effective for the subjects with cerebro vascular accident

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INTRODUCTION

Stroke is the most prevalent cause of ambulatory disability and impaired activities of daily living. Although many neurological symptoms after stroke vary according to the location and extent of the brain lesion, motor weakness and sensory cognition impairments and these are the symptoms reported most frequently. Balance control is the ability to maintain body movement within the base of support without falling. It requires integrating sensory input with movement straggles, appropriate latencies of postural responses and the ability to plan and execute movement patterns necessary for controlling the centre of body mass these such balance control is influenced by cognition factors, such as attention motivation and intent impaired postural control and is caused by a complex interplay a motor sensory and cognition impairments and it is considered as one of the key characteristics of mobility problems in patients with stroke (O' Sullivan Schmitz, Brunner and Suddarth). The world health organization (WHO) described that stroke is the third leading cause of death. According to United States statistics, each year approximately 795000 people suffer a stroke among which 600000 of these

are first attacks and 187000 are recessed attacks. According to the Global and Regional Burden For Stroke Estimate From Indian council of medical research indicated that in 2004 there were 930985 cases of stroke in India with 639455 death and remaining with disability.

MATERIALS AND METHODS

Quantitative research approach and pre experimental one group pre test and post test design was selected for this study. A total number of 50 samples who full fills the inclusion criteria were selected from outpatient department of Indira Gandhi Government General Hospital and Post Graduate Institute (IGGGH &PGI) by using purposive sampling technique. The study was conducted for the period of 4 weeks from 20th December to 20th January. The tool consists of demographic variables which has 10 sub variables (section A), Mini mental status examination (section B) consists of 7 items, Modified Rankin Scale (section c) consists of 6 items, tinetti Assessment Tool (section D) consists of 9 items.

The specific inclusion criteria of the study as follows

- The score of 24 and above in mini mental status examination,

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- 3 months to 3 years of stroke,
- Male and female between the age group of 30 to 70 years ,
- Ischemic stroke.

The following samples are excluded for the study such as

- Critically ill and unconscious,
- Undergone physiotherapy,
- Hemorrhagic stroke,
- Visual and vestibular problems,
- Degenerative, fracture, cardiac and respiratory conditions.

Ethical consideration: The ethical clearance was obtained from my own institution (MTPG and RIHS) and the hospital which was selected as my setting. The investigator collected data for a period of 4 weeks after getting formal permission from the concerned authorities. Pre test was done during the first week of data collection followed by interventions were administered for the period of 4 weeks consecutively. Finally post test was conducted at the end of 4th week of data collection.

RESULTS AND DISCUSSION

The investigator assessed the subjects before and after the administration of intervention in order to find out the effectiveness of such interventions. The results of the study showed there were 10(20%) subjects found to have high risk of falls, 6(12%) subjects had moderate risk of fall and 34 (68%) subjects had low risk of falls where as, in the pretest, 48(96%) subjects had high risk of fall and 1 (2%) subject in each moderate and mild risk of fall respectively (Table 1 and Figure 1). The results of the study is consistent with the another. The post test mean level of physical balance had increased to 23.68 with SD of 3.46 from the pretest mean of 13.60. For their paired ‘t’ value also calculated and it revealed that there is significant 18.676 at ‘p’ value 0.0001 (Table 2 and Fig. 2).

Table 1. Pre and post test level of physical balance among subjects with cerebro vascular accident

Physical balance	High (≤18)		Moderate (19 – 23)		Low (≥24)	
	No.	%	No.	%	No.	%
Pretest	48	96.0	1	2.0	1	2.0
Post Test	10	20.0	6	12.0	34	68.0

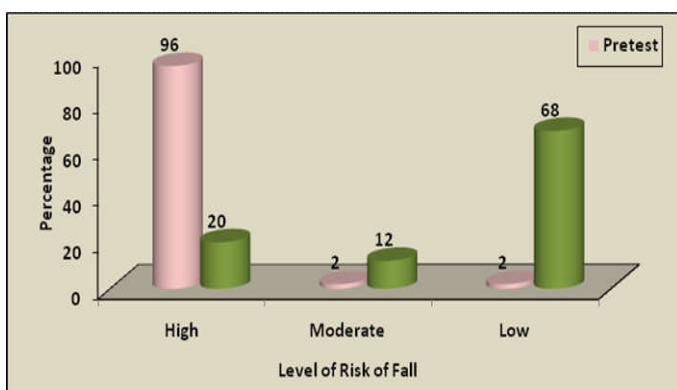


Fig.1. Pre and post test level of physical balance among subjects with cerebro vascular accident

Table 2. Effectiveness of intervention on physical balance among subjects with cerebro vascular accident

Physical balance	Mean	S.D	Paired ‘t’ Value
Pretest	13.60	4.26	t = 18.676
Post Test	23.68	3.46	p = 0.0001, S***

***p<0.001, S – Significant

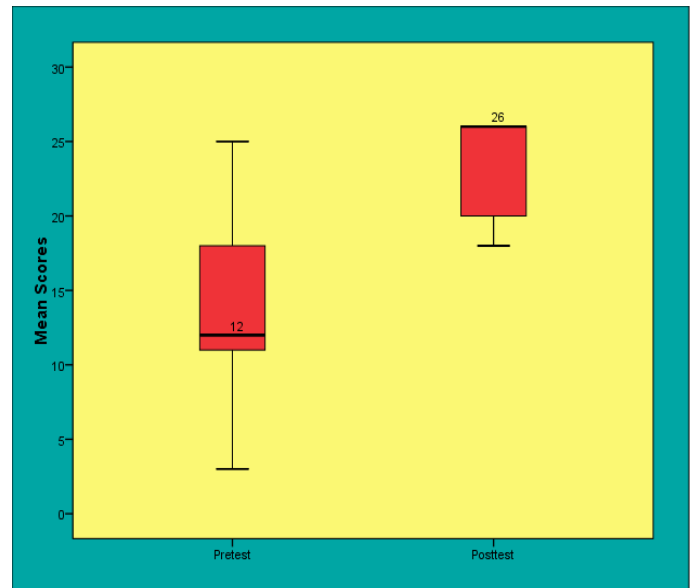


Figure 2. Effectiveness of intervention on physical balance among subjects with cerebro vascular accident

Hence study proves that the interventions are effective. The results of the study is consistent with the another study results conducted by Yea-Ru Yang on 2007. The association between the selected demographic variable with the existing level of physical balance among cerebro vascular accident patients. It was statically found that selected variable such as age gender, religion, highest level of educational qualification income place of living dietary history, history of co- morbid disease duration of illness are not significantly associate. It has highly significantly associated with dual task exercise at the level of P < 0.0001.

Conclusion

Hence this study results proves that the intervention which are administered to improve the physical balance was effective for the subjects with cerebro vascular accident.

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