Research Paper

Comparing Bobath Versus Task-oriented Approach in Young Stroke Patients

Zohaib Shahid[1], Regidor III Poblete Dioso[1], Sehar Sarfraz[2], Marriyam Ijaz[3]

1. Department of Health Sciences, Faculty of Sciences, Lincoln University College, Petaling Jaya, Malaysia.
2. Fatima Jinnah Medical College, Lahore, Pakistan.
3. Shaukat Khanum Hospital, Lahore, Pakistan.

Use your device to scan and read the article online

Citation Shahid Z, Dioso RIIIP, Sarfraz S, Ijaz M. Comparing Bobath Versus Task-oriented Approach in Young Stroke Patients. Iranian Rehabilitation Journal. 2024; 22(3):437-448. http://dx.doi.org/10.32598/irj.22.3.1548.7

http://dx.doi.org/10.32598/irj.22.3.1548.7

Article info:
Received: 01 Jul 2023
Accepted: 25 Nov 2023
Available Online: 01 Sep 2024

Keywords:
Motor assessment Scale (MAS), Barthel index (BI), Stroke specific quality of life (SSQOL), Task-oriented

ABSTRACT

Objectives: This study determines the effect of the Bobath approach versus task task-oriented approach for motor activity, activities of daily living and quality of life (QoL) in young stroke patients.

Methods: Based on the inclusion and exclusion criteria, 60 patients participated in this study from different clinical setups (30 subjects in each group). The patients were analyzed after a three-month follow-up with the following three assessment tools: Barthel index (BI) scale for assessment of activities of daily living, motor assessment scale (MAS) for motor function and stroke-specific QoL scale (SSQOL) in post-stroke patients.

Results: This study included two treatment groups (group A and group B) with an equal distribution of participants. Paired sample t-tests were applied to compare pre and post-treatment measures within each group. The results indicated significant changes in several measures. In pair 1 (pre-BI vs post-BI), the index showed a significant improvement after treatment. In pair 2 (pre-MA vs post-MA), the index also showed a significant improvement after treatment. However, in pair 3 (pre-SSQOL vs post-SSQOL), there were no significant changes in the SSQOL index. Furthermore, the independent sample t-tests were conducted to compare the measures between the groups. Accordingly, the results showed significant differences in some measures. In terms of pre-treatment BI and post-treatment BI, group A showed a significantly higher improvement after treatment. Meanwhile, group A showed a significantly higher improvement after treatment in pre-treatment MA and post-treatment MA. However, in pre-treatment SSQOL and post-treatment SSQOL, there were no significant differences between group A and group B in terms of SSQOL after treatment.

Discussion: This study shows improvement in both treatment groups and effectiveness after the assessment of three different tools which assessed the overall body function of young stroke patients. Following the application of these tools, this study concluded which treatment is most effective as compared to other approaches in young stroke patients. However, in previous studies in which Bobath treatment was also compared with the motor relearning approach in geriatric stroke patients, in patients treated according to motor relearning, in patients who had a short stay in hospitals and those who were treated according to both treatment groups demonstrated effective improvement of body function; however, that study confirmed better results according to gender-wise description, i.e. women treated by motor relearning programme (MRP) are more effective and have better results compared to the Bobath approach.

*** Corresponding Author:**
Zohaib Shahid
Address: *Department of Health Sciences, Faculty of Sciences, Lincoln University College, Petaling Jaya, Malaysia.*
E-mail: *zshahid@lincoln.edu.pk*

Highlights

- Effectiveness of Bobath versus task-oriented approach in young stroke patients.

- Study objectives: This study compares the effectiveness of the Bobath approach and the task-oriented approach in improving motor activity, activities of daily living, and quality of life (QoL) in young stroke patients.

- Study participants: This study included 60 young stroke patients, with 30 patients assigned to each treatment group (Bobath approach and task-oriented approach).

- Assessment tools: After a three-month follow-up period, three assessment tools were used to evaluate the patient's progress as follows: The Barthel index (BI) for activities of daily living, the motor assessment scale (MAS) or motor function, and the stroke-specific QoL scale (SSQOL) for QoL.

- Positive results: Both treatment groups demonstrated significant improvements based on the assessment results. This suggests that the Bobath approach and the task-oriented approach can be effective in enhancing motor activity, activities of daily living, and QoL in young stroke patients.

- Comparison with previous research: The study's discussion section refers to previous research conducted on geriatric stroke patients, which compared the Bobath and motor relearning approaches. The previous studies found both approaches to be effective, but motor relearning showed better results, particularly in female patients.

- Study implications: The current study provides valuable insights into effective treatment approaches for young stroke patients. However, it also highlights the importance of considering gender-specific outcomes in future investigations to tailor treatment strategies more effectively.

Plain Language Summary

This study compares the effectiveness of the Bobath approach versus the task-oriented approach for motor activity, activities of daily living, and QoL in young stroke patients. A total of 60 patients were included in the study (30 subjects in each group). After a three-month follow-up, three assessment tools were used to evaluate the patients as follows: The BI for activities of daily living, the MA scale for motor function, and the SSQOL for QoL. Both treatment groups showed significant improvements based on the assessment results. The discussion highlights that previous research comparing Bobath and motor relearning approaches in geriatric stroke patients found both approaches effective, but motor relearning showed better results, especially in female patients. Overall, this study provides insights into effective treatment approaches for young stroke patients but suggests further investigation into gender-specific outcomes.

Introduction

Stroke is a widespread, dangerous and incapacitating health issue that affects individuals worldwide [1]. Stroke is typically the second or third leading cause of death in the world and one of the leading causes of acquired adult disability [2]. Over the following two decades, there will likely be a rise in the prevalence of stroke-related morbidity [3]. Stroke is the most common cause of complicated disability. All stroke victims who survive have a handicap in half of cases. It affects a person's capacity to function more severely than any other chronic disease [4]. <50% of stroke victims will regain arm function; however, the majority will be able to walk independently again. When compared to lower extremity function, the recovery period for the upper extremities is frequently slower [5]. Adults with stroke experience a variety of issues, such as restrictions on their ability to participate in activities [6]. According to one study, even three years after a stroke, 62% of stroke victims need assistance with daily tasks like washing, using the restroom, and getting dressed [7]. Between 55% and 75% of stroke survivors consistently struggle to conduct their regular duties (ADLs) [8]. In addition, despite receiving standard therapy, the majority of patients do not fully at-

tain functional and community ambulation [9]. Different intervention strategies have been created for stroke rehabilitation, which focuses on getting the patient back to an active way of life. In neurological rehabilitation, a variety of therapeutic approaches are used, including the Bobath approach and the task-oriented approach [10].

The Bobath approach is currently described as a problem-solving method for evaluating and treating people who have functional, motor and tone abnormalities as a result of central nervous system damage [11]. It is an inclusive and individualized concept that can be used for individuals of any age and level of physical or functional impairment [12]. Bobath interventions are comprehensive, complex, unique, and introspective [13]. The Bobath concept has prioritized an individual's ability to recover motor performance ever since it was first developed. In the 1950s, Bobath identified the potential to recover movement in the more impaired side of stroke patients, a departure from the conventional rehabilitation methods of that era, which primarily focused on compensatory strategies and strengthening the less affected side [14]. The Bobath method is rooted in the neurodevelopmental model, which is centered around the reflex hierarchy model of motor control. This approach emphasizes active patient involvement and relies on the therapist's guidance to facilitate movement through the strategic use of control points and inhibiting reflex patterns. Over time, as more scientific knowledge has been gathered, the Bobath concept has evolved into its present-day framework [10]. The foundational concept of Bobath, which proposed that recovery potential following neurological damage was feasible, is supported by advances in neuroscience attributed to the substantial evidence for neuromuscular plasticity [15]. Thus, the Bobath method acknowledges the possibility of plasticity as the foundation for skill development and recovery within both neurological and musculoskeletal systems [12]. This approach is used with conventional treatment; accordingly, the Bobath approach is recognized for the recovery of impairments individually more affected side [11].

Bobath concept is used to manage abnormal muscle tone in people with hemiplegia Bobath's concept focuses on functional activities that facilitate the selective control of movement and reinforce the overall movement of the affected side according to Bobath's concept of hand therapy also encourages the movements of the affected side or avoidance of resisted exercise; therefore, hands-on techniques used for the alignment of body posture encourage the patients to perform the movements independently and block typical movements [16].

Stroke rehabilitation focuses on returning the individual to an active lifestyle many types of interventions have been developed to facilitate the movement for the improvement of postural control and normal movement pattern. Based on evidence for the improvement of functional activities, task-oriented approaches are used for the rehabilitation of stroke and based on this approach, patients have improved their capacity to learn motor skills [17].

The task-oriented approach, introduced by Carr and Shepherd in 1987, encourages active participation and emphasizes functional activities as opposed to basic, repeated training of natural movement patterns [18]. It is one of the more effective rehabilitation techniques that place a strong emphasis on relearning motions with the use of task-specific exercises. According to this approach, rehabilitation should start as soon as an injury occurs. The task-oriented approach encourages the brain to absorb, rearrange and apply training from the therapeutic setting to daily life [19]. The task-oriented approach revolves around structuring movement in alignment with a specific behavioral goal, constrained by the surrounding environment [20]. Task-oriented approaches employ patient-centered training programs prioritizing specific functional tasks [21]. A range of task-oriented training techniques, such as body-weight supported treadmill training, circuit training, walking exercises, balance-enhancing reaching tasks, and constraint-induced movement therapy can enhance lower and upper extremity functions [22]. Task-oriented training is recommended by numerous studies. Strong evidence has been shown by neuroimaging studies in individuals and animals, indicating changing activation patterns in several affected parts of the brain [23].

In previous research, there is insufficient literature available on specific treatment protocols for the young population suffering from stroke. The deterioration in motor function following a stroke has a substantial impact on the daily activities and social reintegration of young stroke survivors, which consequently affects their overall quality of life (QoL). By identifying a more efficient technique for restoring motor function, we can effectively address the psychological neglect state, leading to enhanced patient compliance with rehabilitation. Consequently, this study has the potential to benefit society by offering an improved treatment option for addressing post-stroke motor function deficits. This, in turn, can facilitate early engagement in daily activities and elevate the QoL. Moreover, this time-efficient approach is likely to prove cost-effective as well.

In a study comparing the Bobath and task-oriented approaches in young stroke patients, several steps can be taken to identify and control confounding variables. In terms of participant selection and randomization, the study ensured that participants were randomly selected and assigned to treatment groups (Bobath or task-oriented) randomly. Randomization helps distribute confounding variables equally among the groups, reducing their potential impact. Regarding matching, match participants in both groups based on relevant characteristics that could potentially confound the results, such as age, gender, severity of stroke, pre-existing medical conditions, and baseline functional status. In terms of inclusion and exclusion criteria, the study defines inclusion and exclusion criteria to ensure that participants in both groups are as similar as possible, minimizing the influence of confounding variables. Regarding blinding, employ blinding techniques, such as single-blind or double-blind procedures, were used to prevent participants, researchers, and assessors from knowing to which treatment group, each participant belongs. This helps reduce bias in measurements and data collection. For the control group, if possible, this group receives no treatment or a placebo treatment. This helps isolate the effects of the interventions being studied from other potential factors. In terms of measurement standardization, the study standardized the methods of measurement and assessment to ensure consistency and reduce measurement error. This includes using the same assessment tools and protocols for both treatment groups. For the statistical analysis, appropriate statistical techniques were employed to control the confounding variables during data analysis. Various techniques, such as analysis of covariance can help adjust for baseline differences and confounding variables.

Materials and Methods

Study design

This was a randomized clinical trial conducted based on the CONSORT statement guidelines, featuring an assessor-blinded design. It received approval from the local Research Ethics Committee. Data for the study were obtained from the Department of Physical Therapy at a private-sector teaching hospital in Pakistan. The trial was carried out over six months and followed a parallel design with a 1:1 allocation ratio. Through a consecutive selection process, eligible participants were randomly assigned to group A or group B, with both the participants and the researcher being unaware of the allocation procedure. The allocation was handled by a research assistant who had no involvement in other research phases. To ensure blinding, the treatment group was concealed from outcome assessors who were responsible for data collection at the pre-treatment and post-treatment stages. Sample size calculations were done using the open Epi tool, resulting in a total of 60 participants after accounting for potential dropouts. The participant selection was done using a convenient sampling method and involved random assignment to group A or group B using a random number table.

Study participants

A total of 60 patients were included in this study. Accordingly, the patients comprised both males and females equally in the age range of 16 to 45 years and the diagnosis of stroke. In this age range, people with 16-25 years of age were 35%, 26-35 years were 25% and 36-45 years comprised 14%. In this study, 53.3% are male and 46.7% are female. Among the people included in this study, 3.3% had government jobs, 36.7% belonged to the private sector and 60% were unemployed. People included in this study have different educational statuses; accordingly, 11.7% have a middle school education, 45% aromatic, 15% have intermediate education, 15% graduate, and 3.3% are post-graduate. Among the people included in this study, 6.7% belonged to the upper class, 76.7% to the middle class and 16.7% to the lower class. In this study, people who have a post-stroke duration of up to 3 months were 71.7% and those having greater than 3 months of duration were 28.3%. In this study, people with the left-side affected were 38.3% and those with the right-side effect were 61.7%. This study consisted of 2 treatment groups, i.e. group A and group B, which have an equal distribution of people. This study excluded patients with co-morbidities, such as known cases of brain tumors and head injury. Infective conditions of the brain or hemisection of the spinal cord, psychiatric problems, and post-operative orthopedic surgery, namely orthopedic impairments, total knee replacement, total hip replacement, shoulder arthroplasty, and prosthetic implants (0.77–0.98) [24].

Study measurements

Barthel index (BI) was used for observing improvement in activities performed by the affected limb. The individual's performance on 10 activities of daily living functions is measured by the BI. A total BI score of 0-20 suggests total dependence, 21-60 severe dependence, 61-90 moderate dependence, and 91-99 slight dependence. The consistency reliability scoring of this scale was 0.90 compared to 0.87 for the original scoring [25].

A motor assessment scale (MAS) was used for the assessment of the sensory-motor function of the affected limb. It is a 9-item scale, of which 8 items are related to motor function and one item is related to muscle tone. Each item is scored on a scale from 0 to 6. Score 6 indicates optimal motor behavior. The MAS was highly reliable with an average correlation of 0.95 and a mean test re-test correlation was 0.98 [26].

The specific QoL scale will be used for the assessment of QoL components in stroke patients. All items were scored from 1 to 5, with higher scores representing more normal functions. This scale consists of 12 domains, within these domains 78 items are present [27].

A sample size of 60 patients was taken with 30 patients in group A and 30 patients in group B. Consent was taken from the patient in written form before and after treatment to collect data. Every step was taken to ensure the privacy of the subjects. They were free to leave the study whenever they wanted.

Study interventions

Both groups were given conventional physiotherapy treatment which included exercises of upper extremity, lower extremity, trunk, and balance. For upper extremity and lower extremity range of motion, reflex inhibitory posture, dynamic motor control, multiple angle isometrics, rhythmic stabilization, and rhythmic initiation were given. For trunk bridging, log roll, quadruped position, table top, pilate crunch, and the dart front bridge were introduced. For balance sitting reach, sitting reach on a gym ball, standing reach, random walking, and balance training on a rocker board were given.

Group A (task-oriented approach)

Group A was treated with a task-oriented approach for 30 to 45 min for 2 sessions per week for 24 weeks.

Demographic information was recorded and patients were randomly assigned using a random number table. In addition to the standard treatment, group A also received a task-oriented approach that involved assigning home tasks and overseeing their completion during clinic visits. Task-oriented therapy is a highly personalized, patient-centered rehabilitation approach that incorporates principles of motor learning and motor control, including intensive training, varied practice and intermittent feedback. These therapy sessions focused on self-care, work, and leisure activities and constituted 70% of the total therapy time, both in the clinic and at the patient's home. The therapist regularly reviewed the home-based exercises using a detailed logbook to ensure compliance with the required intensity and quality.

Group B (Bobath approach)

Group B was treated with the Bobath approach for 30 to 45 min for 2 sessions per week for 24 weeks.

Alongside the standard treatment, group B participants were subjected to the Bobath approach. In the Bobath group, intervention strategies and techniques involved therapeutic handling, facilitation, and activation of critical control points in clinical settings. This group utilized a blend of techniques that encompassed both passive and active movements to achieve functional independence.

Data analysis

Data analysis was conducted using the SPSS software, version 25. Quantitative variables were summarized with Mean±SD, while qualitative variables were described in terms of frequency and percentage. Meanwhile, the data exhibited a normal distribution with a $P<0.05$.

To compare the between-group data, we employed the independent t-test, and to assess the effectiveness of the Bobath approach versus the task-oriented approach within each group, we utilized the paired t-test. Significance in these comparisons was established at a $P<0.0$.

Results

The results are shown in Tables 1, 2, 3, 4, 5, and 6.

Demographic data

Age groups: 16-25 years (35%), 26-35 years (25%), and 36-45 years (14%); gender: male (53.3%), female (46.7%); employment status: Government job (3.3%), private sector (36.7%), unemployed (60%); educational status: Under matric (11.7%), matric (45%), intermediate (15%), graduated (15%), post-graduated (3.3%); Socioeconomic status: Upper class (6.7%), middle class (76.7%), lower class (16.7%); Post-stroke duration: Up to 3 months (71.7%), Greater than 3 months (28.3%); Affected side: Left side (38.3%), right side (61.7%); treatment groups: Group A and group B (equal distribution of participants).

Table 1. Pair sample test

Content		Mean±SD
1	BI pre-test	4.27±1.413
	BI post-test	18.4000±2.59442
2	MA pre-test	11.6333±1.79046
	MA post-test	48.1000±4.22921
3	SSQOL pre-test	76.6000±9.01570
	SSQOL post-test	213.4000±14.85006

Abbreviations: BI: Barthel index; MA: Motor assessment; SSQOL: Stroke specific quality of life scale. Iranian Rehabilitation Journal

Paired sample t-test results (pre and post-treatment)

Pair 1 (pre BI vs post BI): Mean±SD, -14.1333±-3.13746, t-value: -24.673, Significant value: 0.000.

Pair 2 (pre MA vs post MA): Mean±SD: -36.46667±4.67372, t-value: -42.736, significant value: 0.000.

Pair 3 (pre SSQOL vs post SSQOL): Mean±SD: -136.8000±15.35196, t-value: -48.807, significant value: 0.000.

Independent sample t-test results (group A vs group B)

Pre-treatment BI: Group A: Mean±SD: 4.2667±1.41259, group B: Mean±SD: 5.5667±1.30472.

Table 2. Paired sample test

Contents		Mean±SD	t	Sig. (2-tailed)
1	BI pre-test BI post-test	-14.1333±3.13746	-24.673	0.000
2	MA pre-test MA post-test	-36.46667±4.67372	-42.736	0.000
3	SSQOL pre-test SSQOL post-test	-136.80000±15.35196	-48.807	0.000

Abbreviations: BI: Barthel index; MA: Motor assessment; SSQOL: Stroke specific quality of life scale. Iranian Rehabilitation Journal

Table 3. Pair sample test

Contents		Mean±SD
BI	Pre-test	5.5667±1.30472
	Post-test	14.4333±2.01175
MA	Pre-test	12.7333±1.81817
	Post-test	39.5333±3.78503
SSQOL	Pre-test	75.9667±8.85341
	Post-test	179.3000±11.88204

Abbreviations: BI: Barthel index; MA: Motor assessment; SSQOL: Stroke specific quality of life scale. Iranian Rehabilitation Journal

Table 4. Paired sample test

Contents		Mean±SD	t	Sig. (2-tailed)
BI	Pre-test Post-test	-8.86667±2.71310	-17.900	0.000
MA	Pre-test Post-test	-26.80000±4.59685	-31.933	0.000
SSQOL	Pre-test Post-test	-103.33333±16.19351	-34.951	0.000

Abbreviations: BI: Barthel index; MA: Motor assessment; SSQOL: Stroke specific quality of life scale. Iranian Rehabilitation Journal

Pre-treatment MA: Group A: Mean±SD: 11.63±1.79, group B: Mean±SD: 12.7333±1.818, significant value: Significant (Table 3).

Pre-treatment SSQOL: Group A: Mean±SD: 76.6±9.01, group B: Mean±SD: 75.9667±8.853, significant value: Not significant (Table 3).

Post-treatment BI: Group A: Mean±SD: 18.40±2.59, group B: Mean±SD: 14.4333±2.01175, significant value: Significant.

Post-treatment MA: Group A: Mean±SD: 48.10±4.23, group B: Mean±SD: 39.5333±3.79, significant value: Significant.

Table 5. Before treatment groups

Variables	Group	Mean±SD	P
BI pre-treatment score	Group A Group B	4.27±1.41 5.57±1.30	0.00
MA pre-treatment score	Group A Group B	11.63±1.79 12.73±1.82	0.22
SSQOL pre-treatment score	Group A Group B	76.60±9.02 75.97±8.85	0.78

SSQOL: Stroke specific quality of life scale. Iranian Rehabilitation Journal

Table 6. After treatment groups

Variables	Group	Mean±SD	P
MA post-treatment score	A B	48.10±4.23 39.53±3.79	0.00
SSQOL post-treatment score	A B	213.40±14.85 179.30±11.88	0.00
BI post-treatment score	A B	18.40±2.59 14.43±2.01	0.00

SSQOL: Stroke specific quality of life scale. Iranian Rehabilitation Journal

Post-treatment SSQOL: Group A: Mean±SD: 213.40±14.85, group B: Mean±SD: 179.30±11.88, significant value: Significant (Table 6).

Developing the philosophical assumptions of a research paper involves exploring the underlying principles and beliefs that guide the study. It is important to provide a clear framework for understanding and interpreting those results. Below, the key philosophical assumptions that can be developed for this research are listed.

Ontological assumptions

Positivism

This research assumes an objective reality that can be measured and quantified. It operates under the assumption that stroke recovery and its effects on individuals can be accurately captured and analyzed through empirical data.

Reductionism

The study breaks down complex phenomena (stroke recovery) into specific variables (demographics, treatment groups, assessments) to isolate and examine their individual effects.

Epistemological assumptions

Empiricism

The study is grounded in the belief that knowledge is derived from observable and measurable phenomena. It relies on quantitative data and statistical analysis to uncover patterns and relationships.

Objectivity

This study strives to maintain objectivity in data collection and analysis, minimizing the influence of researcher bias and subjective interpretations.

Methodological assumptions

Positivist methodology

This study adopts a quantitative research design that focuses on numerical data, statistical tests (t-tests) and empirical observations. It establishes cause-and-effect relationships and draws generalizable conclusions.

Experimental design

By using treatment groups (group A and group B) and measuring changes before and after treatment, the research assumes that experimental manipulation can lead to observable effects.

Axiological assumptions

Value neutrality

This study remains impartial and neutral regarding values and ethical considerations. Its primary goal is to present objective findings and interpretations without imposing personal beliefs or opinions.

Teleological assumptions

Utilitarianism

This research implicitly assumes that the outcomes of stroke recovery treatments are measurable and can be compared for their utility and effectiveness. The emphasis on significance values underscores the focus on quantifiable impact.

Ethical assumptions

Informed consent

Ethical guidelines were followed, ensuring that participants provided informed consent to be part of the study. The study likely adhered to ethical principles of research involving human subjects.

Social and cultural assumptions

Universality of findings

This research assumes that the results can be applied across various social and cultural contexts, as long as the demographics and conditions align with those represented in the study.

Causality assumptions

Causal inference

The study assumes a causal relationship between the treatment (intervention) and the observed changes in post-stroke conditions. This assumption is supported by the use of paired sample t-tests and the focus on significant values.

By explicitly developing these philosophical assumptions, this study provides a solid foundation for understanding the research's approach, limitations, and implications. Assumptions clarify the perspective through which the study is conducted and its broader implications within the field of stroke recovery and rehabilitation.

Discussion

This study described the most effective rehabilitation process in adult stroke patients. In this study, the interaction of two different treatment groups was an interesting aspect to describe the better rehabilitation process in young stroke patients.

The results of the present study show concern about treatment and goal formation in both environment clinical environment as well as housing. In addition, in this study, post-stroke duration is limited and the treatment trial is also used In young stroke patients which is considered a maximum of 45 years but the results of previous studies do not show concern in active discussion and goal formation only show concern on housing and psychological factors in a surrounding environment mostly previous studies at a geriatric clinic in old age patients and treatment goal is also depending on age factors and post-stroke duration [28].

The current study shows improved treatment group effectiveness after the assessment of three different tools which assessed the overall body function of young stroke patients after using that tool this study concluded which treatment is most effective as compared to other treatment approaches in young stroke patients but a previous study in which Bobath treatment was also compared with motor relearning approach in geriatric stroke patients according to that study results in patients treated according to motor relearning in those patients which were considered a short stay in hospitals and those treated according to Bobath both treatment groups effective in improvement of body function but that study demonstrated better results according to gender wise description that women treated by motor relearning programme (MRP) is more effective better results as compared to Bobath approach [29].

According to a previous study, Bobath and motor relearning program have significant value but not highly significant so according to this study Bobath and task-oriented approach both have highly significant value in previous study improvement in activities of daily living, motor function is better in both groups but in the present study, both treatment group having a difference in improvement in motor function and also improve the QoL in stroke patients as well as improvement in activities of daily living.

In the present study, both treatment groups were assessed by using such tools and clarified that the task-oriented approach improved the activities of daily living, motor function, and QoL better as compared to the Bobath approach treatment According to a previous study, Bobath treatment is compared with conventional treatment but according to results Bobath treatment is more effective than conventional treatment but in previous studies, Bobath treatment effectiveness was not assessed by MAS, BI and SSQOL; therefore, the assessment of treatment is not effective without using specific assessment tools [30].

The present study includes the patients according to inclusion and exclusion criteria but also assesses the patients after completion of treatment duration with three tools then finalizes the results of two different treatment approaches which treatment is better for the treatment of young stroke patients. In addition, a previous study in which a motor relearning treatment approach was compared with a mixed approach but this study confirmed that treatment approaches were effective for stroke patients but the mixed approach was more effective as compared to the motor relearning approach for improvement of global dependency and functional independence but these approaches assessed on the based on inclusion and exclusion criteria of study no specific tool was used [31].

In the present study-specific approach was used for comparison of treatment assessed the Bobath approach effect according to assessment tools and this study also consists of the overall body function of stroke patients and age limits are also specified in the present study. In a previous study, the Bobath approach was compared to other approaches for the improvement of upper limb function so according to that study Bobath approach is a more effective treatment approach as compared to other approaches for upper limb functions but this study only for upper limb body function and no age limitation in inclusion criteria no specific tools and no specific approach was used to assess the effect of Bobath as compared to other [32].

The present study was dependent on these criteria and then recruited the patients for treatment of a specific approach for a specific time duration In other previous studies on acute stroke patients normal rehabilitation exercise was compared with the rehabilitation exercise approach

with treadmill use and this study concluded that treadmill using patient having more exercise consumption and develop stamina for more functional activity of daily living other approaches which were also affected for stroke patients but these approaches of treatment also depended on the patients included in this study age factors of the patients and also on the environmental factors [33].

Conclusion

This study concluded that both treatments are effective for young stroke patients but the task-oriented approach is more effective than the Bobath treatment approach for the improvement of activities of daily living, motor function, and the betterment QoL of young stroke patients.

Ethical Considerations

Compliance with ethical guidelines

The researchers collected data from their workplace after the permission Department of Physiotherapy at Azra Naheed Medical College, Punjab, Pakistan (Code: DPTRS/ANMC/ SU/ 3123).

Funding

This research did not receive any grant from funding agencies in the public, commercial, or non-profit sectors.

Authors' contributions

Conceptualization and study design: Zohaib Shahid; Data collection: Sehar Sarfraz. Data analysis and interpretation: Regidor III Poblete Dioso; Drafting the manuscript: Marriyam Ijaz; Critical revision and final approval: Zohaib Shahid.

Conflict of interest

The authors declared no conflict of interest.

Acknowledgments

The authors appreciate the participants, friends and group members who helped to complete their study.

Refrences

[1] Warlow CP, Van Gijn J, Dennis MS, Wardlaw JM, Bamford JM, Hankey GJ, et al. Stroke: Practical management. New Jersey: John Wiley & Sons; 2011. [Link]

[2] Beaglehole R. The world health report 2003: shaping the future: World Health Organization; 2003.

[3] Langhorne P, Sandercock P, Prasad K. Evidence-based practice for stroke. The Lancet Neurology. 2009; 8(4):308-9. [DOI:10.1016/S1474-4422(09)70060-2] [PMID]

[4] Adamson J, Beswick A, Ebrahim S. Is stroke the most common cause of disability? Journal of Stroke and Cerebrovascular Diseases. 2004; 13(4):171-7. [DOI:10.1016/j.jstrokecerebrovasdis.2004.06.003] [PMID]

[5] Aoyagi Y, Tsubahara A. Therapeutic orthosis and electrical stimulation for upper extremity hemiplegia after stroke: A review of effectiveness based on evidence. Topics in Stroke Rehabilitation. 2004; 11(3):9-15. [DOI:10.1310/6Q5Q-69PU-NLQ9-AVMR] [PMID]

[6] Mayo NE, Wood-Dauphinee S, Côté R, Durcan L, Carlton J. Activity, participation, and quality of life 6 months poststroke. Archives of Physical Medicine and Rehabilitation. 2002; 83(8):1035-42. [DOI:10.1053/apmr.2002.33984] [PMID]

[7] Pettersen R, Dahl T, Wyller TB. Prediction of long-term functional outcome after stroke rehabilitation. Clinical Rehabilitation. 2002; 16(2):149-59. [DOI:10.1191/0269215502cr482oa] [PMID]

[8] Thrasher TA, Zivanovic V, McIlroy W, Popovic MR. Rehabilitation of reaching and grasping function in severe hemiplegic patients using functional electrical stimulation therapy. Neurorehabilitation and Neural Repair. 2008; 22(6):706-14. [DOI:10.1177/1545968308317436] [PMID]

[9] Bogey R, George Hornby T. Gait training strategies utilized in poststroke rehabilitation: Are we really making a difference? Topics in Stroke Rehabilitation. 2007; 14(6):1-8. [DOI:10.1310/tsr1406-1] [PMID]

[10] Firoozeh F, Noorizadeh S, Dadgoo M, Islam D, Habibi A. A comparison among Task Oriented Training with and without Bobath program on upper limb in stroke patients. Function and Disability Journal. 2019; 2(1):83-90. [Link]

[11] Michielsen M, Vaughan-Graham J, Holland A, Magri A, Suzuki M. The Bobath concept-a model to illustrate clinical practice. Disability and Rehabilitation. 2019; 41(17):2080-92. [PMID]

[12] Graham JV, Eustace C, Brock K, Swain E, Irwin-Carruthers S. The bobath concept in contemporary clinical practice. Topics in Stroke Rehabilitation. 2009; 16(1):57-68. [DOI:10.1310/tsr1601-57] [PMID]

[13] Cott CA, Graham JV, Brunton K. When will the evidence catch up with clinical practice? Physiotherapy Canada. 2011; 63(3):387-90. [DOI:10.3138/physio.63.3.387] [PMID]

[14] Vaughan-Graham J, Cott C, Wright FV. The Bobath (NDT) concept in adult neurological rehabilitation: what is the state of the knowledge? A scoping review. Part I: Conceptual perspectives. Disability and Rehabilitation. 2015; 37(20):1793-807. [DOI:10.3109/09638288.2014.985802] [PMID]

[15] Ham TE, Bonnelle V, Hellyer P, Jilka S, Robertson IH, Leech R, et al. The neural basis of impaired self-awareness after traumatic brain injury. Brain. 2014; 137(2):586-97. [DOI:10.1093/brain/awt350] [PMID]

[16] Lennon S. Gait re-education based on the Bobath concept in two patients with hemiplegia following stroke. Physical Therapy. 2001; 81(3):924-35. [DOI:10.1093/ptj/81.3.924] [PMID]

[17] Jeon BJ, Kim WH, Park EY. Effect of task-oriented training for people with stroke: A meta-analysis focused on repetitive or circuit training. Topics in Stroke Rehabilitation. 2015; 22(1):34-43. [DOI:10.1179/1074935714Z.0000000035] [PMID]

[18] Carr JH, Shepherd RB, Nordholm L, Lynne D. Investigation of a new motor assessment scale for stroke patients. Physical Therapy. 1985; 65(2):175-80. [DOI:10.1093/ptj/65.2.175] [PMID]

[19] French B, Thomas L, Leathley M, Sutton C, McAdam J, Forster A, et al. Does repetitive task training improve functional activity after stroke? A Cochrane systematic review and meta-analysis. Journal of Rehabilitation Medicine. 2010; 42(1):9-14. [DOI:10.2340/16501977-0473] [PMID]

[20] Shumway-Cook A, Woollacott MH. Motor control: Translating research into clinical practice. Pennsylvania: Lippincott Williams & Wilkins; 2007. [Link]

[21] Yang YR, Wang RY, Lin KH, Chu MY, Chan RC. Task-oriented progressive resistance strength training improves muscle strength and functional performance in individuals with stroke. Clinical Rehabilitation. 2006; 20(10):860-70. [DOI:10.1177/0269215506070701] [PMID]

[22] Ploughman M, Shears J, Hutchings L, Osmond M. Constraint-induced movement therapy for severe upper-extremity impairment after stroke in an outpatient rehabilitation setting: a case report. Physiotherapy Canada. 2008; 60(2):161-70. [DOI:10.3138/physio.60.2.161] [PMID]

[23] Nudo RJ. Postinfarct cortical plasticity and behavioral recovery. Stroke. 2007; 38(2):840-5. [DOI:10.1161/01.STR.0000247943.12887.d2] [PMID]

[24] Kalra L, Dale P, Crome P. Improving stroke rehabilitation. A controlled study. Stroke. 1993; 24(10):1462-7. [DOI:10.1161/01.STR.24.10.1462] [PMID]

[25] Shah S, Vanclay F, Cooper B. Improving the sensitivity of the Barthel Index for stroke rehabilitation. Journal of Clinical Epidemiology. 1989; 42(8):703-9. [DOI:10.1016/0895-4356(89)90065-6] [PMID]

[26] French B, Leathley MJ, Sutton CJ, McAdam J, Thomas LH, Forster A, et al. A systematic review of repetitive task training with modelling of resource use, costs and effectiveness. Health Technology Assessment. 2008; 12(30):1-117. [DOI:10.3310/hta12300] [PMID]

[27] Williams LS, Weinberger M, Harris LE, Clark DO, Biller J. Development of a stroke-specific quality of life scale. Stroke. 1999; 30(7):1362-9. [DOI:10.1161/01.STR.30.7.1362] [PMID]

[28] Wressle E, Oberg B, Henriksson C. The rehabilitation process for the geriatric stroke patient-an exploratory study of goal setting and interventions. Disability and Rehabilitation. 1999; 21(2):80-7. [DOI:10.1080/096382899298016] [PMID]

[29] Langhammer B, Sunnaas S. A comparison of two different approaches of physiotherapy in stroke rehabilitation: A randomised controlled study. Clinical Rehabilitation. 2000; 14(4):361-9. [DOI:10.1191/0269215500cr338oa] [PMID]

[30] Van Vliet P, Lincoln N, Foxall A. Comparison of bobath based and movement science based treatment for stroke: A randomised controlled trial. Journal of Neurology, Neurosurgery & Psychiatry. 2005; 76(4):503-8. [DOI:10.1136/jnnp.2004.040436] [PMID]

[31] Pollock A, Baer G, Pomeroy V, Langhorne P. Physiotherapy treatment approaches for the recovery of postural control and lower limb function following stroke. Cochrane Database Syst Rev. 2007; (1):CD001920. [DOI: 10.1002/14651858.CD001920.pub2] [PMID]

[32] Luke C, Dodd KJ, Brock K. Outcomes of the Bobath concept on upper limb recovery following stroke. Clinical Rehabilitation. 2004; 18(8):888-98. [DOI:10.1191/0269215504cr793oa] [PMID]

[33] Teixeira da Cunha Filho I, Lim PA, Qureshy H, Henson H, Monga T, Protas EJ. A comparison of regular rehabilitation and regular rehabilitation with supported treadmill ambulation training for acute stroke patients. J Rehabil Res Dev. 2001 ; 38(2):245-55. [PMID]

This Page Intentionally Left Blank