

To Evaluate Physiotherapy Intern's Attitude Towards Post-Stroke Rehabilitation Regimen Around Marathwada Region: An Observational Study

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ABSTRACT

Background: Physiotherapy plays an important role in the rehabilitation of stroke patients each year; highly qualified physiotherapists are hired from universities to fulfill the rehabilitation requirements of individuals with strokes. Even though the concept of treatment is the same, the views and assumptions of physiotherapists are different as reported in many studies. Regarding stroke patient rehabilitation, the method or approach employed by physiotherapists is the main finding that warrants attention. For the rehabilitation of stroke victims, numerous strategies are available, such as the Rood's method, PNF, and Motor Relearning. Even within a region, there can be differences in treatment approaches among physiotherapists based on their experience and basic training.

Aim: The present study aimed to assess the attitude of physiotherapy interns regarding post-stroke rehabilitation regimen around Marathwada region.

Methods: 121 physiotherapy interns around Marathwada were surveyed using questionnaires, which were sent using social media; Questionnaires consisted of items related to stroke rehabilitation such as preference for management of stroke patients. Data analysis was done using percentage-wise comparisons

Results: The examination of the results revealed that there was diversity in the attitude held by physiotherapists about the treatment plan for stroke patients.

Conclusion: To acquire a better understanding and practices of stroke rehabilitation, professionals in the field are required to work together to debate the respondents' ideas and assumptions while addressing the challenges that were expressed.

Keywords: Physiotherapy, Stroke, rehabilitation.

INTRODUCTION

Stroke is one of the most common causes of death. It is the primary cause of persistent and acquired disability in adults around the world.¹ There are two types of stroke: 1) Ischemic stroke- Ischemic stroke is most common and seen in 80-85% of population. It occurs due to atherosclerosis, embolism, thrombosis, lacunar infarction etc.² Hemorrhagic stroke- Hemorrhagic stroke occurs in 15% of population. It occurs due to rupture of blood vessels. These are of two types: Intracranial and Sub-arachnoid.³ Stroke causes long-term disability and dysfunction of upper extremity which alters the activities of daily living that is loss of strength and dexterity

which contribute most to disability^{4,5, 6}. While the interdisciplinary character of stroke rehabilitation is paramount, the availability of specific, up-to-date, and professional evidence-based guidelines for the physical therapy profession is crucial for making adequate evidence-based clinical decisions.⁷

Physiotherapy plays an important role in the rehabilitation of stroke patients. Even though the concept of treatment is the same, the views and assumptions of physiotherapists are different as reported in many studies. Even within a region, there can be differences in treatment approaches among physiotherapists based on their experience and basic training. Even though Kerala is a role model state for an efficient health care system in India, comprehensive stroke rehabilitation is still in an early stage. Knowledge about the attitudes and views of physiotherapists regarding current stroke Rehabilitation methods is very important in planning health policies and in conducting continuing education programs in this field.⁸ In view of the tremendous growth in the number of RCTs in this field, it is now necessary to re-establish the “state of the art” concerning the evidence for physical therapy interventions in stroke rehabilitation. Aurelian Hugus jullie Di Marco shams Ribault et.al. conducted a systematic review to update their previous meta-analyses of complex stroke rehabilitation interventions in the domain of physical therapy, based on RCTs with a low risk of bias (i.e. a moderate to good methodological quality) with no restrictions to the comparison group. Primary outcomes, measured post intervention, were defined at the levels of body functions and or activities and participation of the International Classification of Functioning, disability and health model (ICF). The second aim was to explore whether the timing of interventions post stroke effects moderated the main effects.⁹ Therapists' stroke rehabilitation strategies differ greatly based on their prior knowledge, clinical experience, clinical abilities, and personal preferences. The availability of numerous treatment approaches demonstrates that stroke rehabilitation practices are always evolving. While considering the theoretical ideas that underlie treatment, we must also address another critical aspect: treatment delivery.

Given the variety of therapeutic modalities available, educators and researchers must collect information on which stroke rehabilitation strategies are really employed by professionals.¹³ Knowledge about factors associated to the poor efficiency of the neurological rehabilitation after stroke would enable physiotherapist to quickly identify those patients who are at risk of rehabilitation breakdown, in order to provide them with special care and include them in intensive therapeutic treatments¹⁰

In this Review, we focus mainly on the evidence underlying stroke rehabilitation, including the principles of rehabilitation practice, systems of care, and specific interventions¹¹. Clinicians should be familiar with the levels of care of post stroke rehabilitation and services, which include the acute hospital, stay and post-acute continuum of care.¹² Physical and occupational therapists have historically created and implemented a variety of therapy modalities. The stroke rehabilitation treatments used by therapists differ greatly based on their previous knowledge, clinical experience, clinical abilities, and personal preferences.¹³ Evidence clearly supports the use of several types of exercise training for stroke survivors (e.g., aerobic, strength, flexibility, neuromuscular, and traditional Chinese exercise). Aerobic exercise, the most common method of cardiac rehabilitation, may improve aerobic fitness, cardiovascular fitness, cognitive capacities, walking speed and endurance, balance, quality of life, mobility, and other health outcomes in stroke patients. Strength exercise, which is included in national stroke guidelines and suggested for general health promotion for stroke survivors, can enhance post-stroke patients' functionality, psycho-social aspects, and quality of life. Flexibility exercises can help with muscle spasticity, motor function, range of motion, and contracture prevention. Stretching exercises can also help to prevent joint contractures, muscular shortening, spasticity, joint stiffness, and promote post-stroke recovery.¹⁴

Research demonstrates that early, well-coordinated discharge teams or multidisciplinary stroke units are beneficial for patients' rehabilitation.¹⁵ The rehabilitation of stroke patients involves physiotherapy in a significant way. Although the treatment approach is the same, the viewpoints and the presumptions held by physiotherapists varied as numerous researches have reported despite a region, there may be variations in treatment methods based on their experience, among physiotherapists and basic education. Attitudes and views of physiotherapists regarding current stroke rehabilitation methods are very important in planning health policies and in conducting continuing education programs in this field. This study is designed to determine the attitude of physiotherapy Interns related to post-stroke rehabilitation regimen around Marathwada region.

STUDY DESIGN:

An observational study was carried out among physiotherapy interns to evaluate physiotherapy intern's attitude towards post-stroke rehabilitation regimen around Marathwada region. 121 interns around Marathwada region participated in present study. Participants invited through online platform in the survey. The duration study was of 6 months Physiotherapy Interns received a link to the survey and a consent form and responses were automatically uploaded into secure Google spread sheet

OUTCOME MEASURES: QUESTIONNAIRE

First, we spoke with a small number of Neuro-physiotherapy practitioners involving in stroke recovery through discussion. We created questionnaire based on their suggestions and conclusions from earlier research on stroke rehabilitation techniques. There were inquiries regarding the physicians' backgrounds, treatment goals,

methods for treating tone, methods for facilitating movement and function, and a few particular inquiries concerning motor rehabilitation. We had a second session with the researchers to talk about the questionnaire once they had completed a draft version. Changes were implemented based on their recommendations. The Neurophysiotherapy professionals validated the final version of the questionnaire. The research instrument was a questionnaire was developed by using Google Forms which is survey administration application. That sought to elicit demographic data, questionnaire on attitude of stroke rehabilitation among physiotherapy interns. The final version of the questionnaire had multiple choice questions, with the option to write in "other" as necessary. This made the questionnaire easier to complete and more objective. Questionnaires consisted of item related to stroke rehabilitation such as structural and functional impairments and treatment approaches.

DATA ANALYSIS

Since Google survey is as an online platform for data collection, responses were automatically uploaded into secure Google spread sheet. The data were transferred onto spread sheet and were later analyzed. Data analysis was done using percentage wise comparison.

STATISTICAL ANALYSIS:

The statistical analysis is done using SPSS version 24; descriptive analysis is done for qualitative variables. Percentage (%) analysis is done for most of the variables.

RESULTS:

This study aimed at exploring the attitude around Marathwada physiotherapy intern population regarding assumptions about the stroke rehabilitation protocol. Data was gathered based on the information provided by interns who voluntarily participated in filling out the Google form. 121 willingly responded to the survey's questions using the Google form. 121 Questionnaires were sent out of these 91.7% interns were having experience in treating stroke. The examination of the results revealed that there was homogeneity in the attitude held by physiotherapists about the treatment plan for stroke patients. 64.45% interns preferred Brunnstorm to improve flexor / extensor synergy pattern, 41.8% preferred PNF, 18.9% preferred NDT, 17.2% preferred MRP, 0.8% preferred Roods. For improving spasticity, 75.2% interns used stretching, 40.5% preferred active/ passive movement, 26.4% preferred splinting or serial casting. To improve patient's range of motion, 70.2% interns used PNF, 50.4% stretching, 31.4% passive range of movement. 86% interns preferred Roods facilitatory technique, 11.6% NDT, 40.5% Electrical stimulation to improve tone. To inhibit tone, 86.8% interns used Roods inhibitory techniques, 16.5% NDT and 19.8% PNF. To prevent contracture in Stroke Patients, 65.3% used Stretching, 53.7% used Splint, 60.3% Positioning. To improve Voluntary Control of Patient, 56.2% interns used Brunnstorms techniques, 54.5% used MRP, 33.1% used PNF, 0.8% chose other. To improve somatosensory function, 67.2% interns chose Touch discrimination of texture, 32.8% chose recognition of solid object, 58% chose Training of proprioception. 66.9% interns think Arm-sling will prevent GH Joint subluxation, 66.9% think protecting and supporting the arm will prevent GH subluxation, 7.4% think Electrical stimulation will prevent GH Subluxation. 92.6% interns chose Pelvic floor exercise for urinary incontinence, 36.4% biofeedback, 14.9% electrical stimulation. To improve gait pattern 78.5% preferred Partial body weight supported treadmill, 36.4% NDT, 28.9% robot assisted therapy. 27.3% Electromechanical gait training. To Improve balance, 84.2% preferred Trunk training, 22.5% preferred Force platform biofeedback, 40.8% preferred partial body weight supported treadmill training, 0.8% preferred other. To Manage Hemiplegic shoulder pain Syndrome, 73.3% interns chose Strengthening of weak muscles in shoulder girdle, 39.0% preferred active range of motions exercise, 35% preferred gentle stretching, 0.8% preferred other. 28% interns had 30 to 40 days of experience in education about treatment of stroke patients, 26% had 20 to 30 days of experience, 14% had less than 20 days of experience, 37% had 40-50 days of experience. To improve basic ADL of Patient 73.6% interns preferred Task oriented training, 56.2% preferred MRP, 24% preferred NDT. 35.5% interns think Conventional physiotherapy to be most effective treatment measure for improving hand function in stroke patients, 74.4% think CIMT, 24% think Robotics and 3.3% other. To treat facial deviations in stroke patients, 74.4% interns preferred Electrical stimulation, 81% preferred Facial muscle PNF, 57.9% preferred Facial muscle exercises, 0.8% preferred other. 19.8% interns read scientific articles about stroke every week, 36.4% read about once a month, 37.3% read rarely, 6.6% never read the articles.

DISCUSSION

This study analyzes the attitude of physiotherapy interns practicing around Marathwada region regarding stroke rehabilitation regimen. Questions used in this survey covers questions related to management of stroke, responses to the questions gathered and examined to assess assumptions of interns. The key finding that emerges for consideration in the rehabilitation of stroke patients is the strategy or approach adopted by physiotherapists. There are numerous approaches available for stroke rehabilitation, including the Roods approach, PNF, Motor Relearning Program (MRP), Brunnstrom technique, Bobath technique, Constraint-induced movement therapy.

In the current study, for management of synergy pattern, Brunnstorm technique is strongly recommended

than other treatment approaches by the therapists, for spasticity management, about 75.2% interns had significantly chosen stretching. To improve range of motion, about 70.2% participants selected PNF stretching. For management of muscle tone, about 86% interns preferred Roods techniques. Roods facilitatory and inhibitory techniques are more significantly used than other treatment approaches for management of muscle tone. To prevent contracture, stretching, splint and positioning are the techniques which had same percentage of preference. To improve voluntary control Brunnstrom and MRP techniques are more favored than other approaches. To improve somatosensory function, touch, (67.2%) therapists chose discrimination of texture than that of the other techniques, for prevention of glenohumeral joint subluxation, (66.9%) interns preferred arm sling and protecting and supporting arm than electrical stimulation, for management of urinary incontinence including all these various techniques pelvic floor exercises (92.6%) are more significantly preferred by interns. To improve gait, partial body weight supported treadmill training (78.5%) is more significantly favored. To improve balance, (84.2%) preferred trunk training or seated balance training. To manage hemiplegic pain syndrome, strengthening of weak muscles in shoulder girdle was preferred by (73.3%) interns than other approaches. To improve basic ADLs, task oriented training (73.6%) is more recommended by therapist. For improving hand function, CIMT is more significantly preferred than other approaches. For management of facial deviations, facial muscle PNF is more significantly preferred. Depending upon their impairments for repetitions per sets of session every intern has a unique perspective. most of the interns having more than 40-50 days of experience some of them also having more than year of experience, 28 interns were having 30 to 40 days of experience days of experience, 26 interns were having 20 to 30 days of experience and rest of them having less than 20 days of experience.

Fayaz Rahaman Khan et. al. (2012) conducted a study, in which it has been showed that physiotherapists' levels of understanding regarding stroke patients' treatment regimens varied. This highlights the significance of creating a multidisciplinary approach to stroke treatment. While the type and extent of the stroke affect how well stroke therapy works, the physiotherapist's expertise is just as crucial.⁸ Present study also came to same conclusion. This study also shows that the majority of respondents (153, or 76.1%) indicated that they most frequently employed the conventional strategy. Chosen as the main strategy; proprioceptive neuromuscular facilitation (PNF), utilized by 23 (11.4%) respondents, was the second most preferred method. When it came to the practice of adopting a single approach, 89 (44.3%) respondents said they did just that, but on occasion they would employ whatever methods proved to work for the patients.⁸ In current study interns preferred multiple approach like to improve voluntary control, 68 (56.2%) preferred Brunnstrom technique, 66 (54.5%) preferred learning program, 40 (33.1%) preferred proprioceptive neuromuscular facilitation.

In the study of Pradeep Natarajan et.al. (2008) has been shown that Patients may receive both Brunnstrom/PNF and Bobath/ types of treatment from the therapists, but the emphasis will vary based on the specific circumstances. It should be a requirement of the job for doctors to read recent literature in an area that is always changing, such as stroke rehabilitation. By reading recent research, practitioners can stay up to date on the newest and most efficient rehabilitation techniques.¹³ In the present study in order to investigate some of the factors that may have influenced their treatment decisions, the physiotherapists were asked how frequently they read professional literature, every week (19.8%), about once a month (36.4%), rarely (37.3%), never (6.6%). It suggests that percentage of reading scientific articles is increasing.

In Davidson I, Waters K (2000) Study of the data indicated significant variation in the views held by physiotherapists about the treatment of stroke patients, despite the obvious similarities in the reported strategies.¹⁵ In present study to improve range of motion, PNF techniques are more preferred, for management of muscle tone, about 86% interns preferred Roods techniques, means most of the interns preferred same approach for most of the symptoms

CONCLUSION

The present study has explored and interpreted the topic such as stroke rehabilitation protocol shows authentic beliefs and assumptions held by physiotherapy interns practicing in Marathawada region. The selected study highlighted that most of the physiotherapy interns' attitude of the treatment regimen for post-stroke patients are similar. interns preferred Brunnstrom technique for management of synergy patterns, stretching for management of spasticity, PNF stretching to improve range of motion, Roods to improve tone, positioning to prevent contracture, MRP for voluntary control, strengthening for shoulder pain syndrome, CIMT to improve hand function and electrical stimulation techniques for management of facial deviations.

LIMITATIONS

We studied a relatively small number of interns. The sample is taken in one region. Further study can be done on a large scale.

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