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Research Article

FACILITATION AND BARRIERS FOR ADHERENCE TO HOME EXERCISE PLAN IN PATIENTS WITH POST ISCHEMIC STROKE

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Abstract:

Background: Stroke is a serious medical condition and Physical therapists are essential for rehabilitation of stroke patients with commonly suggested home-based exercise program (HEP). HEP is advised at the discharge from hospital or physical therapy OPD clinic with an aim that it may help the patient to enhance or maintain the functional status towards independence.

Objective: To recognize barriers and facilitations for adherence to home exercise plan in patients with post ischemic stroke.

Methodology: This was a cross sectional study with sample size of 100 patients and carried out in Niazi hospital, Lahore. The study was approved by ethical committee and there were no ethical issues found to conduct this study. Data was collected by using a questionnaire given as handouts and analyzed by using Statistical Package of Social Sciences i.e. SPSS 21.0 version.

Results: The results showed that there were 96 (96%) patients expressed the importance of exercise. There were 83 (83%) patients mentioned fatigue as major barrier, while those of 71 (71%), 22 (22%) and 44 (44%) mentioned depression, post-exercise stiffness and less role of exercise as barriers to exercise.

Conclusions: It is concluded from the results that fatigue and depression are the moost important barriers to HEP while physiotherapist's recommendation and motivation is the most important and common facilitation for the stroke patients.

Keywords: Barriers, Exercise Adherence, Facilitators, Home-Based Exercise, Stroke

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INTRODUCTION:

Stroke is one of the most serious medical conditions worldwide. It is among the leading cause of disability all over the world. In USA and Australia, it affects almost 70,000 people per year.[1] There have been found about 200000 repeated cases of stroke in the USA and Australia. There are 50% chances of functional disability in survivors of stroke. Ischemic stroke is recognized for a good survival rate but also with functional disability in its survivors. A large number of patients get hospitalized due to stroke every year. Stroke is thought to be the third most cause of death worldwide. The transient ischemic attack is one of the types of stroke in which there are full chances of recovery. However, in the patients of transit ischemic attack or other types of which patients survive, there always be chances of its another episode.[2, 3]

There are many risk factors of stroke. These risk factors include but not limited to physical activity, high body mass index, diabetes mellitus, cardiac disease, hypertension, high cholesterol, smoking history or history of alcohol consumption, poor diet, and sedentary lifestyle. One of the aims of stroke management includes the management of risks related to stroke. All of these factors can be managed through medication and lifestyle changes. The patients who have developed stroke are transient ischemic stroke must be treated against the risk factors so that the second episode do not occur.[4, 5]

Treatment of stroke is a multidisciplinary work. There are number of stakeholders to effectively launch rehabilitation plans. Physiotherapists are one of the key members of the multidisciplinary rehabilitation team for stroke. Physiotherapy rehabilitation is started at the hospital, rehabilitation center, and later as home-based physical therapy. Immediately after the stroke, the patient is attended at the hospital are rehabilitation facility where proper monitoring is possible for items and other fatal factors. Home-based physical therapy is essential for managing chronic disability.[6, 7]

Literature show that there have been conducted many studies regarding home-based exercise program after stroke. A variety of studies are available on this topic. There are studies that show that there is a marked effect of home exercise program after stroke. There are research studies that highlight barriers and facilitators for home-based exercise after stroke. There is limited literature regarding compliance to a home exercise program in Pakistan. The following studies shape current picture about barriers facilitator and a difference to the home-based exercise program.

Shaughnessy et al. has conclude from their study in 2006 that showed that the patients that recovered and improved from stroke commonly encountered two type of things: firstly, barriers or difficulties and secondly, there are also some facilitations. They are practically similar for general public. There are likewise some particular and special variables that are similar for all the stroke survivors apart of the fact where are they living whether poor or rich. Frequent problems and obstacle include lack of motivation, fatigue, least amount of energy to maintain activeness and freshness and the extreme noteworthy are unavailability and lack of exercises set plan for spinal cord injured patients and travelling, it's difficult to progress, advance and transfer the stroke and spinal cord rehabilitation patients. These problems and difficulties are often stated by the adulthood age of patients globally. Patients with spinal cord injury and the stroke have very difficult survival rates since their vital signs are not that much stable due to injured cord and normal brain function deficits. Third most common barrier following survival of stroke is diminished amount of energy which may result the patient to fatigue easily. They continuously feel of deprived energies and fatigue.[10]

This study was conducted to identify the barriers and facilitators in following HEP program after stroke. Although a home-based exercise program is as old as the physiotherapy itself. However, the reasons for non-compliance to HEP are not well known. These factors could include reasons which might contradict which social norms; due to which these were usually not reported. However, when the home-based exercise program is terminated in the middle of the rehabilitation program, it results in massive disability and loss of resources at the patient end.[8, 9] Therefore, the objective of study was to determine barriers and facilitations for adherence to home exercise plan in patients with post ischemic stroke.

MATERIALS AND METHODS:

It was Descriptive study the cross-sectional study. The study was conducted with help of questionnaire from Niazi Hospital Lahore in 100 patients using sample of convenience. It lasted for six months after synopsis approval.

The inclusion criterial was the Patients who suffered from the stroke but currently not engaged in any physiotherapy clinic, Participants who got discharged in last six months and exercise plan was given at time of discharge, Both male and female and Age 55-75 years. While the patients with Any previous Neuromuscular problem in lower limb and Any other Surgery of lower limb, were excluded.

Non-probability convenient sampling was employed to include respondents in study. The study objectives and scope were explained to respondents with an informed consent for the collection of data. All participants mentioned three utmost problems like handicap from the stroke, absence of inspiration social aid and already designed physical activities in the timetable just to perform the exercises after recovering from the stroke. Data was collected in a professionally trained way with the help of questionnaire.

The data was analyzed using SPSS 21.0 which is widely used software for analysis of data. The frequency and percentages were analyzed against the qualitative categorical data and mean with standard deviation was measured for continuous quantitative

variables. Data was presented graphically through pie charts and bar charts.

RESULTS:

The results showed that Mean age: 62.5 ± 12.5 . Furthermore, 68% mentioned they exercise 1-2 time per week, $n=28$, 28% mentioned that they workout 3-4 times per week and only 4 replied that exercise 5-6 times per week. Moreover, 44% thinks that there is a mild role of exercise in stroke. $n=53$, 53% thinks that there is moderate role and 3% thinks that there is no role of exercise in stroke.. The results showed that there were 96 (96%) patients expressed the importance of exercise. There were 83 (83%) patients mentioned fatigue as major barrier, while those of 71 (71%), 22 (22%) and 44 (44%) mentioned depression, post-exercise stiffness and less role of exercise as barriers to exercise.

Table 1: Patients Characteristics

	Number	Percent
Gender		
Male	63	63.0
Female	37	37.0
Importance of exercise for stroke patient		
Yes	96	96.0
No	4	4.0
Fatigue influence on Daily Activities		
Yes	83	83.0
No	17	17.0
Perception regarding Depression		
Yes	71	71.0
No	29	29.0
Perception regarding Physical Activity		
Yes	11	11.0
No	89	89.0

Table 2 Perception Regarding Exercise

	Number	Percent
Importance of exercise for stroke patient		
Yes	96	96.0
No	4	4.0
Fatigue influence on Daily Activities		
Yes	83	83.0
No	17	17.0
Perception regarding Depression		
Yes	71	71.0
No	29	29.0
Perception regarding Physical Activity		
Yes	11	11.0
No	89	89.0

Table 3: Facilitators and Barriers

Facilitators	Yes%	No%
Knowledge about exercise importance after stroke	96	4
Exercise history	18	82
Understanding of instructions or recommendation regarding physiotherapy	86	14
Instruction from physiotherapist for HEP	98	2
Follow home exercise program	100	0
Frequency of doing exercise per week		
Times 68%		
3-4 times 28%		
Times 4%		
B. Knowledge of modification about exercise		
Yes 36%		
No 64%		
How long exercise in a session		
15-30 mins 92%		
31-45 mins 4%		
Greater than 45 mins 4%		
Barriers		
Low Physical activity (ADL's)	89	11
Fatigue	83	17
Depression	71	29
Post exercise stiffness	22	78
Opinion about the role of exercise in stroke		
Mild 44%		
Moderate 53%		
No role 3%		

DISCUSSION:

This was an important study in terms of its impact on community rehabilitation with home-based exercise program. It highlighted the reasons for non-compliance which results in long-term disability in stroke patients. This was novel study in terms of its nature and problem investigated.

This study highlighted some issues which are not spoken about usually. In Pakistan, the patient-therapist relationship is entirely different from other countries. It is much formal and non-materialistic, where usually patients do not ask to terminate services directly and hide the reason so that the respect of therapist may not hurt. It was found that sometimes patients' family members who do not understand the exact prognosis of disease and get disappointed with the treatment results. Sometimes they do not actually withdraw from program but they only change physiotherapists in a hope that other physiotherapists may get good results. With the help of this study healthcare professionals will be able to know better about facilitators and barriers in our society to home exercise plan and adherence of patients can be improved.

There has been other research-based opinion that there is lack of balance in progression of exercises. When the stroke patients are admitted in hospital, they receive a very gentle and initial exercise plan. When they shift home and receive HEP, the plan is usually very aggressive and therapist may not consider that there should be balanced progression in exercise difficulty, duration and load. Otherwise, this study shows that the patients are aware of the importance of physical therapy exercises. However, a very smaller number of them told that they were used to exercise before stroke, in our study n=96% of patients said that the stroke person should do exercise on daily basis but 11% of patients were used to of doing exercises before they had stroke.[20]

Sometimes family member gets to know about exercise protocols and want to try themselves instead of the physiotherapist. Sometimes the patients get the required level of recovery what they have in their minds and think that they cannot get better than this which they have already perceived. On the other hand, sometimes the physiotherapist is doing extra visits which are not indicated in a particular case. For example, if the required frequency for a patient should

be 2-3 days per week, but they continue to attend patients throughout the week, which results in total termination of Physiotherapy services. Some times the non-compliance comes from the opinion of other healthcare professionals. Whatsoever the reasons for non-compliance, usually these are not reported.[21]

In short, the patient survived from the stroke had both barriers and facilitations which play role in the recovery. The important common barriers are lack of motivation and they remain inactive, second-lack of structured exercise programs and difficulty in transportation to treatment centers for consultation.

Low energy and motivation at patients end and the non-availability of community centers were reported to be big barriers for participation in exercise programs. Other barriers were nature of neurological damage such as spinal cord injury in which patients cannot carry a program which is based on rehab centers.

In this study it was also well noted that about 92% of patients only do exercises for about 15-minutes. About 68% patients only perform exercise once or twice in a week only because of diminished amount of energy and early fatigue. In a previous study conducted with similar objectives highlight similar findings. It was seen that majority patients were not attending rehabilitation centers for neurological injuries due to feeling of hopelessness, anxiety and depression related disorders. They were not physical active and believed that their damage is permanent. This led to demotivation for doing exercise and visiting rehab centers. In such patients, however, home exercise plan was found to give better results.[22, 23]

CONCLUSION:

It is concluded from the results that fatigue and depression are the most important barriers to HEP while physiotherapist's recommendation and motivation is the most important and common facilitation for the stroke patients.

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