

Home Modifications in Chronic Stroke Patients

Bhavika Chawhan¹, Dinesh Chavhan¹, Rachana Dabadghav¹, Savita Rairikar¹, Ashok Shyam², Parag Sancheti²

¹ Sancheti Institute College of Physiotherapy.

² Sancheti Institute of Orthopedics and Rehabilitation.

Institute Where Research Was Conducted: Sancheti Institute Of Orthopedics and Rehabilitation Shivajinagar, Pune.

University Affiliation: Maharashtra University of Health Sciences (MUHS) Nashik.

Year Of Acceptance Of Thesis: 2015.



Dr. Dinesh Chavhan



Dr. Rachana Dabadghav



Dr. Savita Rairikar



Dr. Ashok Shyam



Dr. Parag Sancheti

Address of Correspondence

Dr. Dinesh Chavhan

Sancheti Institute College of Physiotherapy, Thube Park, Shivajinagar, Pune 411005.

Email: drdineshchavhan@gmail.com

Abstract: Stroke is a condition characterized by motor deficits like hemiplegia and hemiparesis. Stroke survivors face a heightened fall rate and an increased risk of getting injured post attack. The various sections of the house limit the stroke patients to different degrees. The aim of this study was to find out the modifications done in the stroke survivors' houses as a part of rehabilitation in various sections of a chronic stroke patient's house. It was concluded after this study that a high level (79%) of stroke patients made home modifications in the bathroom (71%) then in living room (65%), bedroom (51%) and the kitchen (47%).

Hypothesis: It is hypothesized that modifications in the house as a part of rehabilitation reduces the fall risk and aids in independence of the patient.

Clinical importance: Modification of sections reduces the limitation in the house and risk of falls.

Future direction: Various sections of the house can be studied individually to scan the most limiting parameter of the house.

Keywords: Home modifications, chronic stroke, rehabilitation, fall risk.

THESIS SUMMARY

Introduction

A stroke [1] is a medical emergency. The two kinds of stroke, ischemic stroke and hemorrhagic stroke produce clinical deficits like changes in the level of consciousness and impairments of sensory, motor, cognitive, perceptual and language functions. Motor deficits are characterized by paralysis (hemiplegia) or weakness (hemiparesis), typically on the side of the body opposite to the side of the lesion. Balance is affected and there is an increase in risk of getting injury from the surroundings if not taken proper measures to reduce fall rate and risk [2]. Transient ischemic attack [3] survivors recover from the attack almost completely without major impairments.

Modifications [4] to the Home should be done with this in mind:

- Renovating the structure
- Renovating the environment
- Safety

- Assistive devices

There has been a study on the gender affected by stroke [5] which shows that males are more affected than females. The modifications are done keeping this in mind.

Incidences of falls increase post stroke attacks. The literature concerning home modifications post stroke is limited and restricted to certain sections [6] of the house.

A better understanding of home modifications helps design a framework within which modifications [7] that can be used to improve the patient's recovery and give them a better lifestyle [8].

NEED FOR STUDY: The reason was to find out the sections modified post stroke in a house of an Indian setup.

Materials and Methodology

A demographic questionnaire was sent to caretakers of 100 stroke patients all over Maharashtra who were living in their houses post hospitalization by email. The Demographic questionnaire included Name, Age, Gender and Years post stroke. The demographic questionnaire contained components whether changes were made in the house, which sections of the house were modified and how it helped reduce injury with 22 questions in all. All the of stroke survivors' houses post stroke were included in the study and the questionnaire was filled by the caretakers of stroke patients. All the patients with Transient Ischemic Attack[4] and patients not living in a house post hospitalization post stroke were excluded from the study. A written consent was taken from the participants and the study was approved by the Institutional Ethical Committee. The data was analyzed using Microsoft Excel.

Results

A total of 100 subjects completed the questionnaire, providing an overall response of 100%. The mean age was 57.95 years. A total 56% were males and 44% were females. It was concluded after this study that a high level (79%) of stroke patients made home modifications in Maharashtra, India. The most significant changes were made in the bathroom (71%) followed by living room (65%), bedroom (51%) and the kitchen (47%). This may point towards the maximum number of falls and injuries taken place post stroke are in the bathroom[2]. The kitchen not being modified may be due to more number of male[5] patients who don't participate in culinary activities in a house on a regular basis.

Discussion

In this study, 79% of subjects made significant changes in their houses with most significant changes being made in the bathroom (71%) followed by living room (65%), bedroom (51%) and the kitchen (47%).

This showed that the highest risk of falls was in the bathroom which required assistive devices and modifications in the bathroom [2-3] such as addition of railings and increasing the height of commode. This was statistically significant as it suggested that bathrooms require the most amount of modification post stroke.

Living room and bedroom had been modified according to the patient's individual impairments and the statistics suggested that modifications in these rooms made moving around the room easier for the patient and making closet and shelves accessible considering the impairments.

Kitchen had been modified the least. This suggested that the stroke patients were dependent on their caretakers for their diet and nutritional needs and due to more male[5] stroke patients compared to females.

Since, 57% of the subjects did not use stairs post stroke and 76% of the subjects used the help of railings for stair climbing post stroke; it may be due to lower limb involvement caused by stroke and age related changes which restricted the subject from climbing stairs effectively. This was

significant as it pointed out the need to add the railings for staircases[7] in the vicinity of the stroke patients.

Houses of 69% of the subjects had been modified to make their shelves accessible to the patients. This suggested that people were more aware of the impairments in the stroke patients and conducive of their shortcomings.

Furniture at 68% of the subjects' houses had furniture which had sharp edges that were not made blunt post stroke. It was suggestive of increased risk of getting injured while moving around the house. This pointed out the need to make the furniture edges blunt if possible to reduce injuries.

A 72% of patients experienced a reduction in their fall rate and a reduced risk of injuries post modifications in their houses [4]. This was statistically significant as it pointed out the need to modify the house according to the stroke patient's needs and impairments.

Conclusion

As observed from this study:

1. Most people modify their houses post stroke.
2. Maximum modifications are done in the bathroom then living room, bedroom and the kitchen is minimally modified.
3. There is reduction in the rate of falls and injuries post home modifications.

Clinical Importance

Modification of sections reduces the limitation in the house and risk of falls.

References

1. What is a Stroke? [http://www.nhlbi.nih.gov/medlineplus/stroke.html] March 26, 2014. Retrieved: 16 March 2015.
2. Tsur A, Segal Z. Falls in stroke patients: risk factors and risk management. *ISR Med Assoc J*. 2010 Apr;12(4):216-9
3. Transient ischemic attack [http://www.nlm.nih.gov/medlineplus/ency/article/0007370.htm] August 28, 2014. Retrieved: March 16 2015.
4. Hope: The stroke recovery guide. [http://rehab.ucla.edu/workfiles/NRRU-Unit%20stroke.pdf] Retrieved: March 16, 2015
5. Peter Appelros, Birgitta Stegmayr, Andreas Terent. *Stroke*. 2009;40:1082-1090 Published online before print February 10, 2009, doi:10.1161/STROKEAHA.108.540781
6. Schulz CH, Hersch GI, Foust JL, Alicia L Wyatt, Kylar M Godwin, Salimah Virani et al. Identifying Occupational Performance Barriers of Stroke Survivors: Utilization of a Home Assessment. *Physical & occupational therapy in geriatrics*. 2012;30(2):10.3109/02703181.2012.687441.

doi:10.3109/02703181.2012.687441.

7. Sørensen HV, Lendal S, Schultz-Larsen K, Uhrskov T. Stroke rehabilitation: assistive technology devices and environmental modifications following primary rehabilitation in hospital--a therapeutic perspective. *Assist Technol.* 2003 Summer; 15(1):39-48.

8. Huijgen BC, Vollenbroek-Hutten MM, Zampolini M, Opisso E, Bernabeu M, Van Nieuwenhoven et al. Feasibility of a home-based telerehabilitation system compared to usual care: arm/hand function in patients with stroke, traumatic brain injury and multiple sclerosis. *J Telemed Telecare.* 2008;14(5):249-56. doi: 10.1258/jtt.2008.080104.

Conflict of Interest: Nil
Source of Support: None

Full Thesis and Master Chart available on
www.journalmedicalthesis.com

How to Cite this Article:

Chawhan B, Chavhan D, R Dabadghav, Rairikar S, Shyama A, Sancheti P. Home Modifications in Chronic Stroke Patients. *Journal Medical Thesis* 2016 Jan-Apr; 4(1):7-9.