AUCTORES
Globalize your Research

Journal of Clinical and Laboratory Research
Md Tashiqul Islam*

Open Access

Research Article

Physical Rehabilitation after Stroke: Epidemiological Observational Study

Md Tashiqul Islam

PhD Fellow, Begum Rokeya University.

***Corresponding Author:** Tashiqul Islam, PhD Fellow, Begum Rokeya University.

Received Date: 31 March 2026 | **Accepted Date:** 3 April 2026 | **Published Date:** 9 April 2026

Citation: Md Tashiqul Islam, (2026), Physical Rehabilitation after Stroke: Epidemiological Observational Study, *Journal of Clinical and Laboratory Research*, 9(2); **DOI:**10.31579/2768-0487/205

Abstract

Hypertension is a major public health problem all over the world. In Bangladesh it is in increasing trend. No part (urban or rural) is immune. This survey based epidemiological work was carried out at rural areas of northern part of Bangladesh irrespective of gender and race. The study subjects were selected conveniently from health camp. The mean SBP and DBP were 125.89±18.17 mmHg and 76.29±13.31 mmHg, respectively. Prevalence of hypertension was 39.75%. The average SBP was 126.48±18.11 mmHg in men and 122.07±14.61 mmHg in women. The average DBP was 82.34±13.42 mmHg in men and 76.0±11.24 mmHg in women. Holistic preventive measurement is necessary to stop high blood pressure.

Key words: socio-demographic; infertility; overweight; polycystic ovary syndrome; lifestyle habits

Introduction

The primary goals of stroke rehabilitation are to regain independence and improve quality of life by minimizing the limitations of activities of daily living.1 Structured stroke care should consider the early timing of rehabilitation, a qualified rehabilitation team, and duration of rehabilitation, which are important elements that have been distinguished as advancing better general outcomes for patients with stroke.2 Evidence from systematic reviews support that organized stroke rehabilitation units, and more prominent intensities of rehabilitation are associated with enhanced improved functional outcomes compared with mixed rehabilitation units, general units, and mobile stroke units.3 This suggests that neurological rehabilitation alone does not represent the level of useful changes observed in stroke rehabilitation. Rehabilitation services regardless of the setting are found to be associated with better functional outcomes. There is strong evidence supporting the beneficial effects of early admission to stroke rehabilitation units within 24-48 hours after stroke, to enhance functional outcomes. In Bangladesh no such study was done yet.

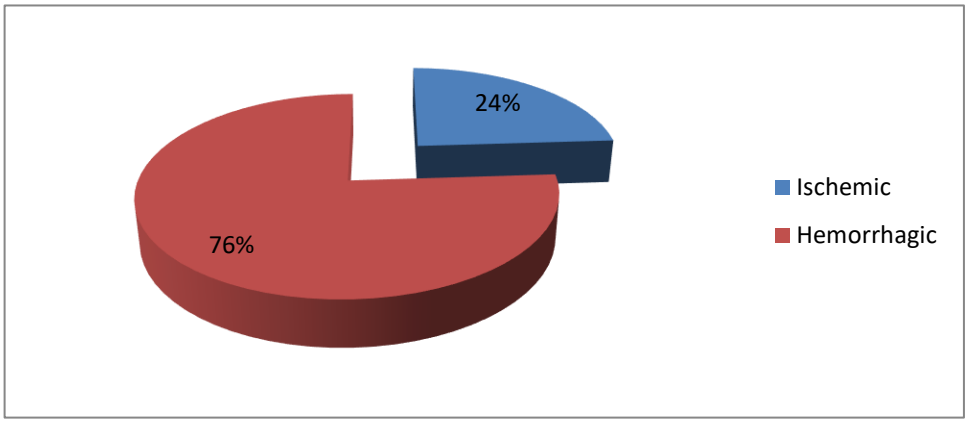
Methodology

A cross-cut study was conducted to identify the status of physical rehabilitation among the post-stroke patients. Considering time period and resource availability, cross-sectional analytical study design was most feasible for this study. As no sampling frame is available in the community level, non-probability convenient sampling was used to collect study subjects. After administering questionnaire, data were checked for consistency. Individual sheet was checked and cleaned to avoid any error. Data were categorized and coded during entry into the SPSS software. Collected data were analyzed by computer technology SPSS version 22.0. Collected information was presented in the form of tables and graphs. Descriptive statistics (mean, SD, frequency, percentage) and inferential statistics (Chi-square) were used.

Results

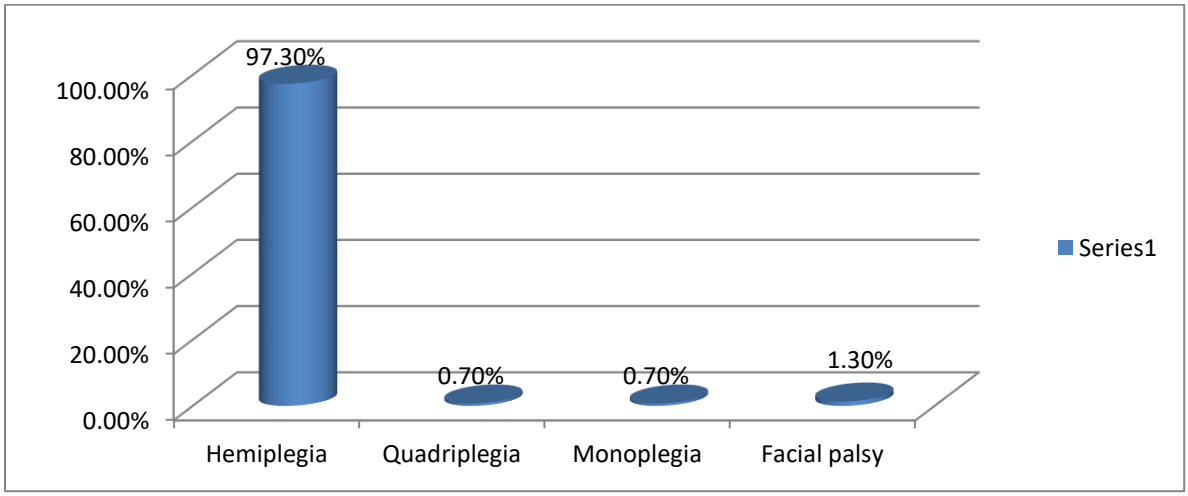
Type of stroke

Three-fourth of the respondents (76%) suffered from hemorrhagic stroke and one-fourth (24%) ischemic stroke.



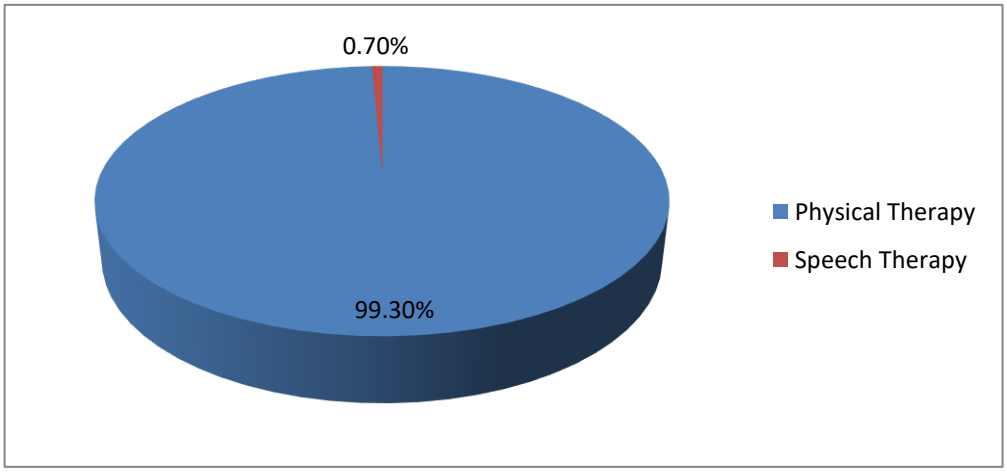
Type of disability

About 97.30% of the patients suffered from hemiplegia.



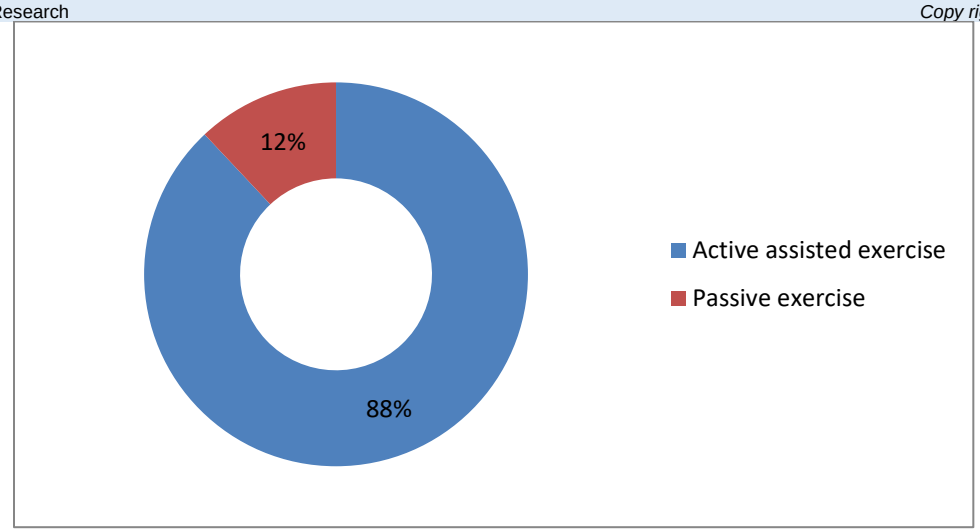
Type of rehabilitation receiving

Almost all of the patients were receiving physiotherapy.



Means of rehabilitation

Active assisted exercise as means of rehabilitation was prominent (88%) and passive exercise was provided among 12% patients.



Association between age group and type of stroke

No statistical significant association was found between age group and type of stroke (p=0.079>0.05).

Age group	Type of stroke		Total	χ2	p-value
	Ischemic	Hemorrhagic			
21-35	7(4.7)	11(7.3)	18(12.0)	6.789	0.079
36-50	7(4.7)	35(23.3)	42(28.0)		
51-65	12(8.0)	51(34.0)	63(42.0)		
66-85	10(6.7)	17(11.3)	27(18.0)		
Total	36(24.0)	114(76.0)	150(100.0)		

*Results were published as number **(%)**, χ2 test was performed and p<0.05 was level of significance*

Association between gender and type of stroke

Statistical significant association was found between gender and type of stroke (p=0.001<0.05).

Gender	Type of stroke		Total	χ2	p-value
	Ischemic	Hemorrhagic			
Male	9(6.0)	89(59.3)	98(65.3)	34.023	0.001
Female	27(18.0)	25(16.7)	52(34.7)		
Total	36(24.0)	114(76.0)	150(100.0)		

*Results were published as number **(%)**, χ2 test was performed and p<0.05 was level of significance*

Association between family type and type of stroke

Statistical significant association was found between family type and type of stroke (p=0.004<0.05).

Family type	Type of stroke		Total	χ2	p-value
	Ischemic	Hemorrhagic			
Joint	18(12.0)	28(18.7)	46(30.7)	8.327	0.004
Nuclear	18(12.0)	86(57.3)	104(69.3)		
Total	36(24.0)	114(76.0)	150(100.0)		

*Results were published as number **(%)**, χ2 test was performed and p<0.05 was level of significance*

Association between income and type of stroke

Statistical significant association was found between income group and type of stroke (p=0.001<0.05).

Income group	Type of stroke		Total	χ2	p-value
	Ischemic	Hemorrhagic			
≤5360	0(0.0)	3(2.0)	3(2.00	26.844	0.001
5361-21270	0(0.0)	49(32.7)	49(32.7)		
21271-65761	34(22.7)	54(36.0)	88(58.7)		
>65761	2(1.3)	8(5.3)	10(6.7)		
Total	36(24.0)	114(76.0)	150(100.0)		

Results were published as number (%), $\chi 2$ test was performed and $p<0.05$ was level of significance

Discussion

Stroke is the third commonest cause of death worldwide and fourth leading causes of disease burden. It's an unfortunate reality that the majority of strokes occurring in the world are in developing countries, projections over the next 30-years, clearly place increases in incidence and mortality from the burden of stroke in the developing, rather than the developed world. In many regions, some of the most formidable enemies of health are joining forces with the allies of poverty to impose a double burden of disease, disability and premature death in many millions of people. As because of several factors like demographical transition, urbanization, unplanned industrialization, epidemiological transition takes place in the developing countries of the world which causes double burden. This is happening in South Asia, which has one quarter of the global population but where about half of the population live below the poverty line and have limited access to health care. Although infectious diseases remain a formidable enemy, the population is ageing, non-communicable and lifestyle-related diseases are rising. There are bundles of research works done around the globe including developed and developing countries but there have been lack of in-depth study for identification of rehabilitation measures. Data generated through this study might be helpful for the hospital managers to equip themselves to provide better services to stroke patients in different categories of disability. It will also help us create awareness among general population about the risk factors of stroke in Bangladesh. The planners and policy-makers will also be benefited with findings of the study. The present study found that three-fourth of the respondents suffered from hemorrhagic stroke and one-fourth ischemic stroke. About 97.30% of the patients suffered from hemiplegia. About 96.70% patients received both medication and rehabilitation. Almost all of the patients were receiving physiotherapy. Active assisted exercise as means of rehabilitation was prominent and passive exercise was provided among 12% patients. Statistical significant association was found between gender and type of stroke. Statistical significant association was found between family type and type of stroke. Statistical significant association was found between income group and type of stroke. The greater prevalence of stroke in men is well known.4 Age is the single most important risk factor for stroke. Frequency of stroke rises exponentially with increasing age. The risk of stroke doubles for each successive decade after age 55 years.5-6 It estimates that almost 73% stroke occurs in age 45-64 age group in Bangladesh which affect the golden years of active population. If stroke occurs among working force of our society, definitely it will bring a serious impact on the families of the sufferers. Chapman et al7 which showed the incidence of stroke was high among the high-income group. This results also differ with the study by Hart-CL et al8 which concluded that poor socio-economic circumstances was associated with greater risk of stroke, which was also found in other studies.9-10 Findings of this study may reflect the recent trend of socioeconomic status of Bangladesh. Ischemic stroke account for 50%–85% of all strokes worldwide.11 Haque MM et al12 found that 51% and 88.24% hemiplegic in their study. Data also shows that, 47.8% respondents were right sided hemiplegic and 52.2% were left sided hemiplegia among the hemiplegic respondents. They also develop 65.7% disarthria, 17.7% motor aphasia, and 16.6% were normal due to post stroke complication. Speech problem have found significantly higher among hemorrhagic stroke compared to ischemic stroke. Most patients with stroke will need some kind of ongoing physical rehabilitation to assist them in achieving best outcomes possible (with respect to the severity of the stroke but also with respect to the resource available). Perhaps there is a persuasive argument for delivering evidence-based stroke rehabilitation with appropriate levels of quality and intensity as it is considered a human right in many societies. Evidence for physical interventions relating to walking and physical rehabilitation after stroke is becoming increasingly available in the form of high quality systematic reviews that can inform clinical guidelines as well as high level government strategy with respect to stroke. We tend to find it mostly relating to physical therapy and exercise/fitness interventions. Physiotherapy, using a mix of components from different approaches, is effective for the recovery of function and mobility after stroke. Treatment sessions of 30-60 minutes, 5-7 days a week may provide a significant beneficial effect. No one approach to physical treatment is any more (or less) effective in promoting recovery of function and mobility after stroke. Physiotherapists should use their expert clinical reasoning to select individualized, patient-centred, evidence-based physical treatment, with consideration of all available treatment components, and should not limit their practice to a single "named" approach.

Conclusion

Disability is common after stroke. Reducing disability through rehabilitation programme is demanded. The objective of this study was to assess the physical rehabilitation status among post-stroke patients. Three-fourth of the respondents suffered from hemorrhagic stroke and one-fourth ischemic stroke. Active assisted exercise as means of rehabilitation was prominent and passive exercise was provided among 12% patients. Statistical significant association was found between gender and type of stroke. Statistical significant association was found between family type and type of stroke. Statistical significant association was found between income group and type of stroke. Effective and comprehensive rehabilitation programme specifically designed for individual patients should be implemented comprehensively and thoroughly. More sample based study can be conducted to get more precise and accurate result which can be both qualitative and quantitative in nature.

References

1. Burn J, Dennis M, Bamford J, Sandercock P, Wade D, and Warlow C, (1994). Long-term risk of recurrent stroke after a first-ever stroke. Stroke;25:333-337
2. O'Sullivan SB, Schmitz TJ, Fulk GD, editors, (2014). Physical rehabilitation. 6th ed. Philadelphia (PA): F.A. Davis Co;
3. Fjærtoft H, Rohweder G, Indredavik B. Stroke unit care combined with early supported discharge improves 5-year outcome: a randomized controlled trial. Stroke 2011;42:1707-1711
4. Bousser MG, (1999).Stroke in women. Circulation;99:463–467
5. Brown RD, Whisnant JP, Sicks JD, O'Fallon WM, Wiebers DO, (1996). Stroke incidence, prevalence, and survival: secular trends in Rochester, Minnesota, through 1989. Stroke;27:373-380
6. Wolf PA, D'Agostino RB, O'Neal MA, Sytkowski P, Kase CS, Belanger AJ, Kannel WB, (1992). Secular trends in stroke incidence and mortality: the Framingham Study. Stroke; 23:1551-1555
7. Chapman J, (1966). Epidemiology of vascular lesions affecting the central nervous system: The occurrence of stroke in a sample population under observation for cardiovascular disease. Am J Public Health; 55:191-201
8. Shaper AG. Risk factors for stroke in middle age British men. BMJ 1991; 302:1111-1116
9. Uddin MJ, Alam B, Jabbar MA, Mohammad QD, Ahmed S, (2009). Association of lipid profile with ischemic stroke, Mymensingh Med J;18(2):131-135
10. Casper M, Wing S, Strogatz D, (199).Variation in the magnitude of black- white differences in stroke mortality by community occupational structure. J Epidemiol Community Health;45:302-307
11. Feigin VL, (2007). Stroke in developing countries: can the epidemic be stopped and outcomes improved? The lancet Neurology; 6(2):94-97
12. Strong K, Mathers C, Bonita R, (2007). Preventing stroke: saving lives around the world. Lancet Neurol; 6:182-718

DOI:10.31579/2768-0487/205