



Impact of Cognitive Impairment and Impostor Syndrome on Mental Health Issues among Hemiplegic Stroke Survivors

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Article Info

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Date Received: Nov 19, 2023
Date Revised: April 01, 2023
Date Accepted: Aug 23, 2024

Abstract

Objective: To determine the impact of cognitive impairment and impostor syndrome on mental health issues among hemiplegic stroke survivors.

Methods: A Correlational research design along with a purposive sampling technique was employed on 100 participants to find out the relationship. Data collection was done through the questionnaires i.e., Cognitive Assessment Scale, Clance IP, and DASS-21.

Results: Results indicated that 53% of participants were males and 47% were females. 67% of participants were suffering from left hemiplegic while 33% with right hemiplegic. Pearson product-moment correlation analysis revealed that cognitive impairment was significantly positively correlated with impostor syndrome (.42^{***}) and mental health issues (.44^{***}) among hemiplegic stroke survivors. Results also revealed that cognitive impairment and impostor syndrome are both positive predictors of mental health issues (.44^{***}, .54^{***}) among hemiplegic stroke survivors. Independent sample t-test analysis results showed that female survivors had more mental health issues compared to the male participants.

Conclusion: This study concluded that cognitive impairment and impostor syndrome have a large effect on mental health issues, i.e., depression, anxiety, and stress. In order to give complete care to hemiplegic stroke survivors, healthcare practitioners, and support networks must fully comprehend these relationships. Mental health problems can be lessened by addressing cognitive deficits and impostor syndrome, offering psychological support, and encouraging self-esteem and resilience.

Keywords: cognitive impairment, impostor syndrome, depression, anxiety and stress



This article may be cited as:
Sadaf A, Iqbal MN, Javed F, Rose S. Impact of cognitive impairment and impostor syndrome on mental health issues among hemiplegic stroke survivors. *J Postgrad Med Inst* 2024;38(3):198-202. <http://doi.org/10.54079/jpmi.38.3.3361>

Introduction

A stroke is a type of brain damage caused by a clot or a rupture in a blood vessel that is brought on by a disruption in the blood flow to the cerebral cortex.¹ In terms of mortality and disability among the elderly, strokes rank second worldwide.² A major contributor to stroke is the unexpected death of certain brain cells brought on by an inadequate supply of oxygen in the event that either a complete or partial interruption of brain blood flow results in death.³ The prevalence of the major psychiatric disorders after a stroke and their long-term impact on morbidity and mortality are currently poorly understood. A study was conducted with the aim to investigate the occurrence rate of initial mental health disorders among stroke patients and the mortality rate over a decade following the emergence of post-stroke mental health disorders. About one-third of stroke patients develop a mental health disorder afterward, though the frequency is comparatively low. Notably, post-stroke psychosis is linked to higher mortality over ten years.⁴

The prevalence of stroke in Pakistan, with a fixed incidence of 95 percent of the population, about 100 000 people per year from people aged 75 and up made up the largest age group affected (584,000 out of 650,000) between the years 2000 and 2016, occurs at any age when blood flow is cut off, leaving neurons with less oxygen, but increases after 55 years.⁵

Studies demonstrated that as a result of cognitive damage, stroke sufferers often have poor long-term outcomes.⁶ Even with moderate cognitive abnormalities following a result of the damage it causes, a stroke can compromise a person's independence, productivity, and enjoyment of life.⁷ Domain-specific cognitive impairments can be found in 35 to 92 percent of the population based on neuropsychological examinations. Still, studies utilizing quick assessments of global mental health often give low prevalence rates of less than 25%.⁸ According to the Cognitive Vulnerability-Stress Model, those who have cognitive impairments may be more prone to having negative emotions and experiencing mental health problems when under stress.⁹ Stroke survivors may experience significant psychological effects, such as changes to their sense of self-worth and self-concept.¹⁰ Stroke survivors may struggle to adjust to changes in their physical capabilities and everyday functioning and may feel a sense of loss or frustration.¹¹ These psychological alterations may make someone more susceptible to impostor syndrome.¹²

Irrespective of one's abilities, some people feel like they've been thrust into prestigious positions due to misfortune. This is known as Impostor Syndrome. As a result, people in this situation may feel like they are "impostors".¹³ Prior literature showed that impostor syndrome is associated with mental health. Impostor syndrome may cause mental health issues such as

anxiety and depression. A persistent sense of being a fraud and fear of failing in life leads to a mood problem and chronic tension as well.¹⁴ The cognitive impairment caused by strokes impacts a person's perception of themselves, as the person with this condition finds it difficult to absorb new information. In hemiplegic stroke survivors, cognitive challenges and negative perspectives about oneself could contribute to the onset of mental health issues.¹⁵

Previous literature suggested that hemiplegic stroke survivors frequently face significant cognitive impairment, which could impact their mental health. Similarly, impostor syndrome is a phenomenon in which a person fears being exposed as a fraud due to doubt about their ability, which might intensify these mental health issues. So, the present study aimed to identify the impact of cognitive impairment and impostor syndrome on mental health issues among hemiplegic stroke survivors. This study would help to develop effective interventions and support systems for hemiplegic stroke survivors to enhance their mental health.

Methodology

The present study was approved by the Ethical Review Committee (ERC) of the Lahore School of Behavioural Sciences, The University of Lahore with the ERC number (LSBS-ERC-23/060). Permission was sought from the hospital authorities, and informed consent was taken from the participants in which they were assured that their information would only be used for research purposes and they could withdraw themselves at any stage of research.

A correlational research design was used to evaluate the relationship among study variables. Data was collected from Rehabilitation Centers, Private Hospitals, Clinics, etc. The purposive sampling technique was used to collect data from different settings. Purposive sampling employed in research when the researcher wants to target specific individuals or groups that possess certain characteristics or experiences relevant to the study's objectives. The sample size was selected according to the guidelines of Cohen (1988) (that is, 5 or 7 cases per predictor variable 16. There are 15 items of the current study's predictor. So, $5 \times 15 = 75$. So, 100 sample size was good enough for the current study). Hemiplegic stroke survivors in the age range of 20 to 60 years were included, whereas individuals with other neurological disorders, physically injured and handicapped patients were excluded.

Assessment measures included the Cognitive Assessment Scale for Stroke Survivors 17, consisting of 15 items with 4 4-point Likert scale related to different domains of cognition, which were based on the cognitive abilities of stroke survivors with reliability of 0.88, A scale developed in 1985 called the Clance Impostor Phenomenon Scale 18 was used for measuring the idea that people are successful according to external

standards but have an illusion of incompetence. The CIPS measures three aspects of IP on a 5-point scale, with responses ranging from 5 (strongly agree) to 1 (strongly disagree). The reliability of the CIPS ranged from 0.84 to 0.96. The Depression, Anxiety, and Stress Scale (DASS-21) was used to assess the mental health issues of hemiplegic stroke patients developed by Lovibond and Lovibond in 1995. This scale consisted of 21 items on a 4-point Likert scale ranging from 0-3. Cronbach's alphas of this scale was .80.

The collected data was analyzed by using Statistical Package for Social Sciences (SPSS) version 24. Cronbach's alpha reliability of the scales was checked. Pearson product-moment correlation analysis was used to check the correlation between the variables. Linear regression analysis was used to determine the predicted role of impostor syndrome and cognitive impairment on mental health issues. Along with this, an independent sample t-test was used to investigate mental health issues on the basis of gender.

Results

Table shows Cronbach's Alpha for three scales, i.e., Cognitive Assessment Scale for Stroke Survivors with three factors (Social et al. and Attention, and Orientation) includes 15 items with .62 Cronbach's Alpha. The Clance IP Scale includes 20 items with .82 Cronbach's Alpha and DASS-21, with three factors (Stress, Anxiety and Depression), and 21 items with .95 Cronbach's Alpha. All the scale represents acceptable reliability.

Table 2 indicates correlations, mean, and standard deviations between impostor syndrome (IS), stress, anxiety,

depression, and mental health issues (MHI). The r value indicates the relationship between variables. CI's moderately correlate with IS (r=.42), stress (r=.43), anxiety (r=.52), depression (r=.37), and MHI (r=.44). IS shows significant positive relationships with stress (r=.57), anxiety (r=.61), depression (r=.62), and MHI (r=.65).

Table 3 shows the impact of cognitive impairment and impostor syndrome on mental health issues in hemiplegic stroke survivors. The R2 value at Step I is 0.19, indicating that cognitive impairment explains 19% of the variance in the dependent variable. When Imposter Syndrome was added in Step II, the R2 increases to 0.23, suggesting that the model with both cognitive impairment and impostor syndrome explains 23% of the variance in the dependent variable. With an adjusted R-squared value of 0.4, it suggests that the model, after accounting for the number of predictors, explains 40% of the variance in the dependent variable.

Table 4 revealed a significant mean difference in participants on the basis of gender that female survivors showed more mental health issues as compared to the male hemiplegic stroke survivors. The value of Cohen's d .9 revealed a large effect size.

Discussion

The present study aimed to find the relationship among cognitive impairment, impostor syndrome, and mental health issues among hemiplegic stroke survivors. Adults who have survived a stroke in their twenties or thirties, cognitive impairment, depressive symptoms, and exhaustion continue to hinder daily life perfor-

Table 1. Cronbach's Alpha Reliability of the Scales

Scale	No. of items	a
Cognitive Assessment Scale	15	.62
Clance IP Scale	20	.82
Depression, Anxiety, Stress Scale	21	.95

Note. = Cronbach's Alpha

Table 2. Pearson Correlation, Mean and Standard Deviation of Cognitive Impairment, Impostor Syndrome and Mental Health Issues among Hemiplegic Stroke Survivors

Variables	n	M	SD	1	2	3	4	5	6
1. CI	100	21.91	5.49	---	.42***	.43***	.52***	.37***	.44***
2. IS	100	29.48	10.41	---	---	.57***	.61***	.62***	.65***
3. Stress	100	8.53	4.31	---	---	---	.89***	.94***	.97***
4. Anxiety	100	10.38	3.02	---	---	---	---	.94***	.96***
5. Depression	100	9.25	5.38	---	---	---	---	---	.99***
6. MHI	100	28.16	12.42	---	---	---	---	---	---

Note. ***p<.001, M=Mean, SD= Standard Deviation, CI= Cognitive Impairment, IS= Impostor Syndrome, MHI= Mental Health Issues.

Table 3. Linear Regression Analysis of Cognitive Impairment, Impostor Syndrome and Mental Health Issues among Hemiplegic Stroke Survivors (N=100)

Variables	B	Std. Error	β	t	P	R2	$\Delta R2$
Step I Cognitive Impairment	.98	.21	.44	4.80	.000**	.19	.4
Step II Imposter Syndrome	.63	.10	.53	6.15	.000***	.23	

Note. *** $p < 0.001$, β =beta, $\Delta R2$ = Delta R Square

Table 4. Independent Sample t-test for DASS-21 (N=100)

Variables	Male (n=52)		Female (n=47)		t	p	Cohen's d
	M	SD	M	SD			
DASS	23.20	9.35	33.74	13.16	4.560	.001***	0.9

Note. *** $p < 0.001$, M=Mean, SD= Standard Deviation, DASS = Depression, Anxiety and Stress Scale.

mance seven years after the initial event 20. Stroke survivors often experience cognitive impairment, which manifests as memory loss and mental slowness 21.

It was hypothesized that there would likely be a significant positive correlation between cognitive impairment, impostor syndrome, and mental health issues among hemiplegic stroke survivors. The results indicated that cognitive impairment has a significant positive correlation with stress, anxiety and depression. The findings were as per the proposed hypothesis. Along with this, results match the existing literature 22. Mental health issues and imposter syndrome frequently coexist. A continual feeling of unease and worry can be brought on by the ongoing worry of being exposed as a phony or not living up to expectations. Imposter syndrome patients may feel increased worry, agitation, low self-esteem, and a heightened sense of self-doubt, all of which are factors in anxiety disorders 14.

It was hypothesized that cognitive impairment and impostor syndrome would be a positive predictor of mental health issues in hemiplegic stroke survivors. Results showed that both cognitive impairment and imposter syndrome were the positive predictors of mental health issues. These findings are supported by the results of the present study. The Cognitive Vulnerability-Stress Model suggests that individuals with cognitive deficits may be more vulnerable to negative emotions and mental health issues while under stress 9. The study's result also showed that imposter syndrome is a significant positive predictor of mental health issues. Previous research also supports these findings 23.

In this study, the impact of gender on hemiplegic stroke survivors was examined. The hypothesis proposed a notable gender disparity in these variables. The findings of the present study matched with the existing literature. The results indicate a noteworthy trend i.e.; female survivors of hemiplegic stroke tend to experi-

ence more mental health challenges. Prior research supports this observation, suggesting that emotional difficulties are frequently observed in women 24. Another study reported the similar findings that female survivors experience more mental health issues as compared to the male survivors 25.

Conclusion:

It is concluded that cognitive impairment and imposter syndrome have significantly positively correlated with mental health issues, i.e., depression, anxiety, and stress. Moreover, female hemiplegic stroke survivors have experienced more mental health issues.

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