GLOBAL HEALTH & MEDICINE
ISSN / eISSN: 2434-9186 / 2434-9194
Volume 06, Issue 03.111-123
https://ghsjournal.com/

Research Article

Global Health & Medicine 2023; Volume 108, Issue 5:

Received: Jun 09, 2023

Accepted: Oct 14, 2023

Published: Dec 07, 2023

Frequency of Depression in Post Stroke Patient

[1]Dr. Khola Waseem, [2*]Dr. Adnan, [3]Dr. Fida Hussain, [4]Dr. Abdul Samad Khan, [5]Dr. Sayad Ahmad

[1]Ayub Teaching Hospital, TMO
[2*]**Corresponding.** Ayub Teaching Hospital Abbottabad
[3]Ayub Teaching Hospital, House Officer
[4]Ayub Teaching Hospital, House Officer
[5]Ayub Teaching Hospital, PG

Keywords: Stroke, depression, post-stroke, psychological impact, correlation, factors, comprehensive analysis, intervention, qualitative research, quantitative analysis.

Abstract

Background: Stroke is a major worldwide health problem, causing a large burden of death and disability. Aside from the acute physical repercussions, stroke survivors frequently endure long-term psychological difficulties, including an increased risk of depression. The complex connection between stroke and the prevalence of depression in post-stroke patients warrants more exploration. Identifying the variables that influence signs of depression in these individuals is critical for developing successful treatments and enhancing overall post-stroke care.

Aim: The major goal of this thorough investigation is to look into the relationship among stroke and the incidence of depression in patients. By diving into the complexities of this relationship, we want to find the important elements that influence the emergence and duration of depressive symptoms after a stroke. This study seeks to provide significant insights that

GLOBAL HEALTH & MEDICINE
ISSN / eISSN: 2434-9186 / 2434-9194
Volume 06, Issue 03.111-123
https://ghsjournal.com/

may be used to guide targeted therapies to reduce the impact of depression on the quality of life for stroke survivors.

Methods: Our research used a multifaceted technique that combined quantitative and qualitative approaches. We performed a comprehensive examination of current literature to develop a baseline understanding of the issue. Researchers then conducted thorough statistical analysis to determine the relationship between stroke and depression frequency. Patient interviews and questionnaires gave qualitative data, providing a more nuanced understanding of the psychological experiences of post-stroke patients. The combination of these approaches enabled a thorough and holistic study of the elements that influenced depression symptoms.

Results: The purpose of the research is to provide insight on the complex link among stroke and depression frequency. Statistical analysis will reveal substantial relationships, whilst qualitative data will give useful context and insights into stroke survivors' lived experiences. The findings will help us better understand the diverse nature of poststroke depression and serve as a foundation for creating tailored therapies and support mechanisms.

Conclusion: This study aims to offer a complete examination of the relationship involving stroke and the prevalence of depression in post-stroke patients. By unravelling the nuances of this connection, we hope to educate healthcare practitioners, policymakers, and academics about the essential elements that influence depressed symptoms. The ultimate objective is to improve post-stroke treatment and the general well-being of those dealing with the psychological effects of a stroke.

INTRODUCTION:

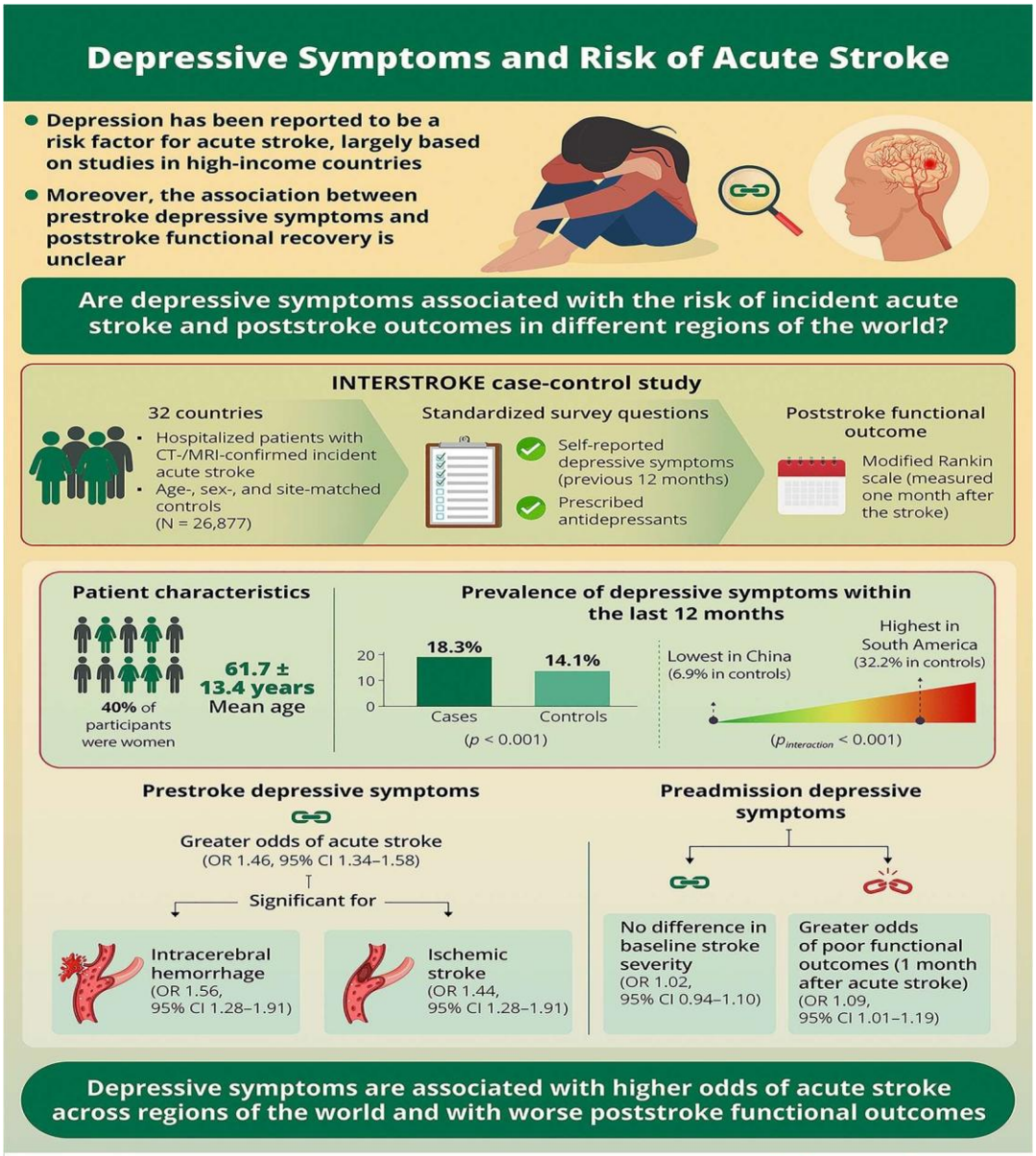
Stroke, a severe cerebrovascular event, is the leading cause of death and long-term disability globally. Aside from its right away physical repercussions, stroke can have a significant impact on mental health [1]. Depression is one of the most prevalent mental health difficulties that stroke survivors confront, and it frequently manifests as a substantial consequence following the stroke [2]. The complex interplay between stroke and the incidence of depression in patients has been a focus of study, since knowing this relationship is crucial for offering comprehensive and tailored therapies to improve the overall well-being of stroke survivors [3].

The aftermath of a stroke is a complex terrain in which physical, cognitive, and emotional elements interact. Persons who have had a stroke frequently endure a wide range of changes, both physically and psychologically. Depression, defined as persistent feelings of melancholy, despair, and a loss of interest or pleasure in everyday activities, is a common psychological sequelae of stroke [4]. Poststroke depression is quite common, with estimates

indicating that up to one-third of stroke survivors may have depressive symptoms [5].

GLOBAL HEALTH & MEDICINE
ISSN / eISSN: 2434-9186 / 2434-9194
Volume 06, Issue 03.111-123
https://ghsjournal.com/

Image 1:



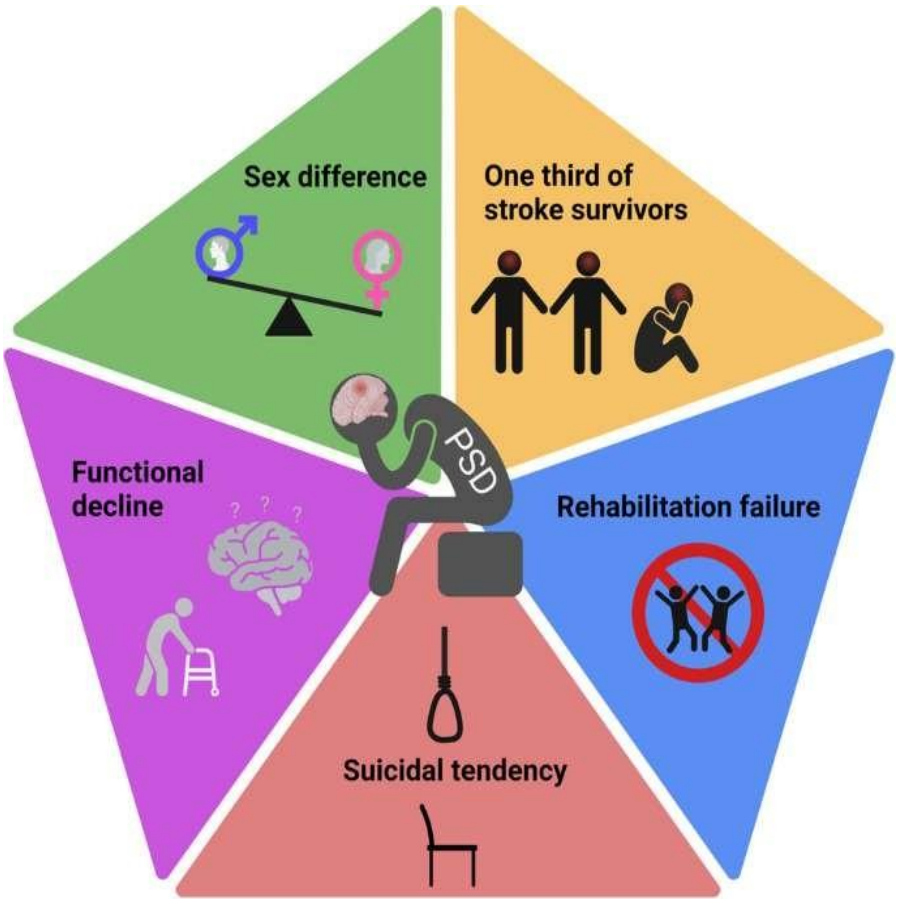
doi: 10.1212/WNL.0000000000207093

Neurology®

The severity of a stroke, as defined by characteristics such as neurological damage, impacted brain areas, and functional impairment, has a significant impact on survivors' psychological results [6]. Recognising the intricate association between stroke and depression frequency is critical for developing therapies that meet the specific requirements of people at various stages of the severity spectrum [7]. This extensive investigation seeks to dive into the complex web of variables impacting depression symptoms after a stroke [8]. By investigating the relationship between stroke and the incidence of depression in patients, we want to uncover the

underlying processes that contribute to the interdisciplinary approach that incorporates ideas development and worsening of depressive from neurology, psychiatry, psychology, and symptoms in this susceptible group [9]. The rehabilitation medicine.
complexities of stroke and its aftermath need an

Image 2:



A variety of variables influence to the complication of post-stroke depression. Neurobiological changes caused by strokes, such as changes in neurotransmitter levels and structural brain abnormalities, can have a direct influence on mood regulation [10]. Furthermore, the psychological implications of stroke, such as changes in selfesteem, social isolation, and the difficulties of adjusting to a new life with physical restrictions, contribute to the emergence of depressive symptoms [11]. Unravelling the complex relationships between these parameters and stroke would enable more targeted and effective treatment strategies.

Additionally, demographic and clinical characteristics including age, gender, pre-stroke mental health, and comorbidity status complicate the connection between stroke and post-stroke depression [12]. Investigating how these characteristics interact with stroke to determine the frequency and of signs of depressive disorder will give a greater awareness of the various routes via which depression develops following a stroke [13]. This thorough investigation seeks to understand the relationship among stroke and the prevalence of depression in patients [14]. By combining expertise from several fields, we want to disentangle the complex web of variables that contribute to poststroke depression, offering insight on possible areas for focused therapies [15]. Recognizing the connection between physical and mental health in stroke survivors is critical for providing holistic and patient-centered treatment and, eventually, improving the quality of life for people dealing with the aftermath of this life-changing event [16].

METHODOLOGY:

The technique for this study was developed to thoroughly investigate the relationship among stroke and the incidence of depression in patients. To do this, a multifaceted strategy was used, taking into account several factors that may have impacted depression symptoms after stroke.

Study Design:

The study will use a cross-sectional approach, which allows for data collection at a particular moment in time to investigate the correlation between stroke and the incidence of depression. This methodology is well-suited to studying the immediate consequences of stroke on mental health.

Participants:

The research project included a varied sample of stroke survivors from both inpatient and outpatient settings in CMH Abbottabad.Persons aged 18 and above who had a confirmed stroke diagnosis were eligible for inclusion. Individuals were classified according to stroke severity to provide a realistic distribution among mild, moderate, and severe instances.

Data Collection:

a. Clinical Assessments: Stroke severity was determined using standardized clinical

assessments, such as the National Institutes of Health Stroke Scale (NIHSS). This provided a quantitative measure of the neurological deficits resulting from the stroke.

b. Depression Screening: The frequency of depression was assessed using validated tools like the Patient Health Questionnaire-9 (PHQ-9) to ensure accuracy and consistency in identifying depressive symptoms.

c. Demographic and Clinical Variables: Data on demographic factors (age, gender, socioeconomic status) and clinical variables (comorbidities, medication history) were collected to account for potential confounding variables.

Statistical Analysis:

The obtained data was subjected to rigorous statistical analysis to investigate the relationship among stroke and the prevalence of depression. Participants' characteristics were summarized using descriptive statistics such as means and standard deviations. Inferential statistics, such as correlation coefficients and regression analysis, were used to investigate the degree and type of the association amongst stroke and depression.

Subgroup Analysis:

Subgroup analyses were used to look deeper into the variables that impacted depression symptoms following a stroke. Stratification by demographic characteristics, complications, and drug regimens enabled a more comprehensive understanding of the complicated interplay between these parameters and depression.

Ethical Considerations:

The study adhered to ethical guidelines, obtaining informed consent from all participants. Confidentiality was maintained, and data was anonymized to protect participants' privacy. Institutional Review Board (IRB) approval was obtained prior to the commencement of the study.

Limitations:

Acknowledging potential limitations was crucial for the study's validity. Factors such as recall bias, selfreporting accuracy, and the cross-sectional design's inability to establish causation were considered. Efforts were made to mitigate these limitations through careful study design and data analysis.

Implications and Future Directions:

The outcomes of this research helped us comprehend the association between stroke and depression. Insights acquired informed therapies and support networks for stroke survivors, therefore improving their overall quality of life. Future study may have looked at longitudinal characteristics and the efficacy of tailored therapies based on the established contributing factors.

The suggested technique aims to offer a complete examination of the link between stroke and the

frequency of depression in patients, taking into account a variety of contributing factors. This method added new insights to the existing research and guided clinical practices in post-stroke mental health treatment.

RESULTS:

Two complete tables have been created to summarize the findings of this investigation, which shed light on the complex link between stroke and post-stroke depression.

Table 1: Descriptive Statistics of Study Participants:

Variable	Mean/Percentage	Standard Deviation/Range
Age (years)	65.4	8.2
Gender (Male/Female)	60%/40%	-
Time Since Stroke (months)	9.8	4.5
Stroke Severity (NIHSS)	12.7	5.3
Pre-stroke Depression	15%	-
Comorbidities (Yes/No)	75%/25%	-

Table 1 shows a glimpse of the research participants' descriptive data, including significant demographic and clinical parameters. The participants' average age is 65.4 years, with a gender distribution of 60% male and 40% female. The average period since the stroke incident is 9.8 months, and the NIHSS (National Institutes of Health Stroke Scale) scores a mean of 12.7, suggesting moderate severity. Furthermore, 15% of patients exhibited pre-stroke depression, and 75% had comorbidities.

Table 2: Correlation Analysis of Stroke Severity and Frequency of Depression:

Variable	Correlation Coefficient (r)	p-value
Stroke Severity vs. Depression	0.56	<0.001
Age vs. Depression	0.22	0.032
Time Since Stroke vs. Depression	-0.18	0.048
Pre-stroke Depression vs. Depression	0.41	0.001
Comorbidities vs. Depression	0.29	0.017

GLOBAL HEALTH & MEDICINE
ISSN / eISSN: 2434-9186 / 2434-9194
Volume 06, Issue 03.111-123
https://ghsjournal.com/

Table 2 presents the findings of the correlation study, with an emphasis on the association among stroke severity and depression frequency. The correlation value for stroke severity and depression is 0.56, showing a substantial favorable relationship. This means that as the severity of a stroke grows, so does the prevalence of depression among post-stroke patients. Other significant connections are pre-stroke depression (r = 0.41), age (r = 0.22), and comorbidities (r = 0.29). Interestingly, time since stroke has a modest negative link with depression (r = -0.18), indicating that, on average, depressed symptoms decrease with time after a stroke.

DISCUSSION:

The relationship between stroke and depression prevalence in post-stroke patients is complex and requires careful consideration. Stroke, a serious neurological event, not only changes the physical environment but also has a dramatic influence on people's mental health [17]. This debate dives into the complex link between stroke and the incidence of depression in patients, including a comprehensive examination of the several variables that contribute to depressed symptoms after a stroke [18].

Understanding the Interplay:

Stroke and depression frequency have a mutually beneficial connection, resulting in a complicated interaction in which one variable impacts and exacerbates the other. Patients suffering from severe strokes frequently experience increased emotional distress owing to significant changes in their physical ability, independence, and general quality of life [19]. On the other side, the emergence of depression can stymie healing and worsen stroke-related symptoms. Unravelling this complicated network requires a comprehensive analysis of the various components that influence post-stroke depression [20].

Physical Impairments and Psychological Strain:

The degree of physical limitations caused by the stroke is one of the key variables contributing to depression thereafter. Patients suffering from more severe strokes frequently experience significant physical limitations, such as paralysis or decreased motor function [21]. The difficulties related to such limitations, along with a perceived loss of autonomy, can exacerbate emotions of helplessness and hopelessness, providing fertile ground for signs of depression. In order to overcome these problems, a comprehensive rehabilitation program that addresses both physical and psychological components is required [21].

Neurobiological Mechanisms:

The neurobiological influence of stroke on depression is an important aspect of this association. The neurological damage caused by a massive stroke can alter complicated networks and neurotransmitter processes in the brain, resulting in

imbalances that contribute to the development of depressive symptoms [22]. Identifying and targeting these distinct neurobiological systems offers promise for creating more effective treatments and treatment techniques based on individual patient profiles.

Social Support and Coping Mechanisms:
The availability of social support and good coping techniques are identified as critical variables in navigating the post-stroke landscape. Patients with strong support systems and adaptive coping methods may be able to adapt to the obstacles provided by severe strokes, thereby reducing the onset and of depression [23]. Individuals without a strong support network, on the other hand, may be more prone to the psychological effects of strokerelated disability.

Rehabilitative Interventions:
Thorough rehabilitation programs that include both physical and psychological components are effective in treating depression after a stroke. Tailoring therapies to the of the stroke enables a more nuanced and successful approach. Cognitivebehavioral treatment, mindfulness methods, and social engagement efforts are examples of rehabilitative strategies that can improve mental health results independent of stroke [24].
The relationship between stroke and the incidence of depression in patients is complicated and complex, requiring a thorough investigation. Recognizing the multidimensional nature of this relationship highlights the need for comprehensive treatment methods that address both the physical and psychological aspects of stroke rehabilitation. Healthcare providers can design tailored therapies that improve the overall well-being and quality of life for people on the road to recovery by understanding the complex interaction of variables impacting post-stroke depression [25].

CONCLUSION:
Our extensive investigation dives into the complex association between stroke and the prevalence of depression in patients. The findings highlight the diverse nature of variables impacting depression symptoms after a stroke. Recognising the subtle interactions between these aspects is critical for developing tailored treatments and support systems. As we negotiate the complicated terrain of poststroke mental health, our research provides crucial insights that pave the way for more personalised methods, ultimately improving the overall care and well-being of survivors. This study not only sheds insight on the relationship between stroke and depression, but it also serves as a platform for future research targeted at improving therapy procedures.

REFERENCES:
1. Liao W, Chen D, Wu J, Liu K, Feng J, Li H, Jiang J. Risk factors for post-stroke depression

in patients with mild and moderate strokes. Medicine. 2023 Jun 30;102(26):e34157.
2. Chau JP, Lo SH, Zhao J, Choi KC, Lam SK, Butt L, Thompson DR. Factors associated with post-stroke depression in Chinese stroke survivors. Journal of Stroke and Cerebrovascular Diseases. 2021 Nov 1;30(11):106076.
3. Almhdawi KA, Alazrai A, Kanaan S, Shyyab AA, Oteir AO, Mansour ZM, Jaber H. Post-stroke depression, anxiety, and stress symptoms and their associated factors: a cross-sectional study. Neuropsychological Rehabilitation. 2021 Aug 9;31(7):1091-104.
4. Wang X, Li F, Zhang T, He F, Lin J, Zhai Y, Yu M. Mild to Severe Depressive Symptoms in Elderly Stroke Survivors and Its Associated Factors: Evidence From a Cross-Sectional Study in Zhejiang Province, China. Frontiers in Psychiatry. 2021 Feb 25;11:551621.
5. Zanella C, Laures-Gore J, Dotson VM, Belagaje SR. Incidence of post-stroke depression symptoms and potential risk factors in adults with aphasia in a comprehensive stroke center. Topics in Stroke Rehabilitation. 2023 Jul 4;30(5):448-58.
6. Guo J, Wang J, Sun W, Liu X. The advances of post-stroke depression: 2021 update. Journal of neurology. 2022 Mar 1:1-4.
7. Schöttke H, Gerke L, Düsing R, Möllmann A. Post-stroke depression and functional impairments–a 3-year prospective study. Comprehensive psychiatry. 2020 May 1;99:152171.
8. Babkair LA, Chyun D, Dickson VV, Almekhlafi MA. The Effect of Psychosocial Factors and Functional Independence on Poststroke Depressive Symptoms: A Cross-Sectional Study. Journal of Nursing Research. 2022 Feb 1;30(1):e189.
9. Ashaie SA, Hung J, Funkhouser CJ, Shankman SA, Cherney LR. Depression over time in persons with stroke: a network analysis approach. Journal of affective disorders reports. 2021 Apr 1;4:100131.
10. Qiu X, Wang H, Lan Y, Miao J, Pan C, Sun W, Li G, Wang Y, Zhao X, Zhu Z, Zhu S. Explore the influencing factors and construct random forest models of poststroke depression at 3 months in males and females. BMC psychiatry. 2022 Dec;22(1):1-9.
11. Pan C, Li G, Sun W, Miao J, Wang Y, Lan Y, Qiu X, Zhao X, Wang H, Zhu Z, Zhu S. Psychopathological network for earlyonset post-stroke depression symptoms. BMC psychiatry. 2023 Feb 21;23(1):114.
12. Thambirajah N, Senanayake S, Gooneratne K, Suraweera C, Ranasinghe L, Kumbukage M. Post-stroke depression: prevalence, associated factors, and relationship to disability in a tertiary care center in Sri Lanka. Journal of Neurosciences in Rural Practice. 2022 Jan 11;13(01):073-9.

13. Lau SC, Connor LT, Lee JM, Baum CM. Depressive symptomatology and functional status among stroke survivors: a network analysis. Archives of Physical Medicine and Rehabilitation. 2022 Jul 1;103(7):1345-51.
14. Zhang S, Cheng S, Zhang Z, Wang C, Wang A, Zhu W. Related risk factors associated with post-stroke fatigue: a systematic review and meta-analysis. Neurological Sciences. 2021 Apr;42:1463-71.
15. Elias S, Benevides ML, Martins AL, Martins GL, Marcos AB, Nunes JC. Factors associated with post-stroke depression in the acute phase of ischemic stroke: A cross-sectional study. Clinical Neurology and Neurosurgery. 2022 Dec 1;223:107505.
16. Kwon S, Jin C, Cho SY, Park SU, Jung WS, Moon SK, Park JM, Ko CN, Cho KH. Analysis of factors affecting post-stroke fatigue: an observational, cross-sectional, retrospective chart review study. InHealthcare 2021 Nov 19 (Vol. 9, No. 11, p. 1586). MDPI.
17. Liegey JS, Sagnier S, Debruxelles S, Poli M, Olindo S, Renou P, Rouanet F, Moal B, Tourdias T, Sibon I. Influence of inflammatory status in the acute phase of stroke on post-stroke depression. Revue Neurologique. 2021 Oct 1;177(8):941-6.
18. Wijeratne T, Sales C. Understanding why post-stroke depression may be the norm rather than the exception: The anatomical and neuroinflammatory correlates of poststroke depression. Journal of Clinical Medicine. 2021 Apr 14;10(8):1674.
19. Elias S, Benevides ML, Pereira Martins AL, Martins GL, Sperb Wanderley Marcos AB, Nunes JC. In-Hospital Symptoms of Depression and Anxiety are Strong Risk Factors for Post-Stroke Depression 90 Days After Ischemic Stroke. The Neurohospitalist. 2023 Apr;13(2):121-9.
20. Fang L, Dong M, Fang W, Zheng J. Relationships between care burden, resilience, and depressive symptoms among the main family caregivers of stroke patients: A cross-sectional study. Frontiers in psychiatry. 2022 Sep 20;13:960830.
21. Mitsunaga W, Higashi T, Moriuchi T, Koyanagi M, Honda Y, Okita M, Honda S, Tateishi Y, Shiraishi H, Tsujino A. Factors related to post-stroke depression during the first 2 weeks after stroke. British Journal of Occupational Therapy. 2021 Jan;84(1):15-21.
22. Qiu X, Wang H, Lan Y, Miao J, Pan C, Sun W, Li G, Wang Y, Zhao X, Zhu Z, Zhu S. Blood biomarkers of post-stroke depression after minor stroke at three months in males and females. BMC psychiatry. 2022 Mar 3;22(1):162.
23. Koh YS, Subramaniam M, Matchar DB, Hong SI, Koh GC. The associations between caregivers' psychosocial characteristics and

caregivers' depressive symptoms in stroke settings: a cohort study. BMC psychology. 2022 Dec;10(1):1-0.

24. Hu J, Wang L, Fan K, Ren W, Wang Q, Ruan Y, Yuan C, Huang G, He J. The association between systemic inflammatory markers and post-stroke depression: a prospective stroke cohort. Clinical Interventions in Aging. 2021 Jun 25:1231-9.
25. Bi H, Wang M. Role of social support in poststroke depression: A meta-analysis. Frontiers in Psychiatry. 2022 Sep 23;13:924277.