PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

# Stroke Severity Scale to Palliative Screening, *Activity Daily Living* (ADL) Impairment, and Quality of Life

**Arlies Zenitha Victoria[a]* | Sri Puguh Kristiyawati[a] | Anna Jumatul Lely[b]**
[a] Bachelor of Nursing Study Program, STIKES Telogorejo, Semarang, Indonesia
[b] Dr. Kariadi Central General Hospital, Semarang, Indonesia
*Corresponding Author: arlies@stikestelogorejo.ac.id

***ARTICLE INFORMATION***

***Article history***
*Received (29 May 2024)*
*Revised (10 June 2024)*
*Accepted (20 June 2024)*

***Keywords***
*Keywords must contain at least three to five keywords representing the article's main content.*

**ABSTRACT**

***Introduction:*** *Palliative care is needed for various diseases; stroke is one of the neurological diseases that requires palliative care. Stroke is one of the leading causes of disability and decreased quality of life due to neurological deficits. The National Institute of Health Stroke Scale (NIHSS) assesses stroke severity. Stroke can also cause paralysis, resulting in decreased independence in self-care; patients will experience difficulty carrying out daily activities or activities of daily living (ADL) such as walking, dressing, eating, or controlling defecation or urination. Disability due to stroke can affect the patient's quality of life.* ***Objectives:*** *This study aimed to analyze the relationship between stroke severity scale with palliative screening, activities of daily living impairment (ADL), and quality of life.* ***Methods:*** *This cross-sectional study involved sixty stroke patients selected by accidental sampling. The data were analyzed using Pearson Product Moment and Spearman Rank Test.* ***Results:*** *This study resulted in 53,3% of respondents suffering from a moderate stroke, 90,0% needing palliative intervention, 56,7% total dependency, and 66,7% can not assess quality of life. Significance level between stroke severity scale with palliative screening ware (p=0,000), ADL impairment (p=0,008), and quality of life (p=0,000).* ***Conclusions:*** *There was a relationship between the stroke severity scale and palliative screening, activities of daily living (ADL) impairment, and quality of life. Further research should simultaneously analyze the risk factors for stroke, the stroke severity scale, and things that are influenced by the severity of the stroke so that it can be seen which variable is more dominant.*

## Introduction

Palliative care is an approach to improving the quality of life of patients and families in the face of critical, chronic, and life-threatening illnesses (Shatri et al., 2020). Palliative care is aimed at patients and families in dealing with issues related to life-threatening conditions through prevention with early identification, correct assessment, and treatment of pain and psychological, spiritual, and physical symptoms (Amalia & Listia, 2020). In 2014, more than 29 million patients died requiring palliative care. As many as 94% were adult patients. Worldwide, 20 million people who need palliative care do not receive it (Nugroho, 2021). The definition of palliative care above is very relevant to stroke. However, palliative care is often defined as end-of-life care (end-of-life care) even though caring for stroke patients includes various aspects of palliative care (Cowey et al., 2021).

Stroke can occur when the brain does not get a blood supply that carries oxygen due to blockage or rupture of brain blood vessels, resulting in cell or tissue death. Stroke is a non-communicable disease that is a concern for many people. (Wardhani & Martini, 2014). In 2018,

PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

Basic Health Research recorded the number of strokes in Indonesia was 713,783 cases. (Riskesdas, 2018). The Central Java Health Service reported the number of strokes in Central Java in 2020 was 42,376 cases. Data from 2020 has increased in 2021 to 55,412 (Dinkes Jawa Tengah, 2021).

Stroke is one of the leading causes of disability and decreased quality of life due to neurological deficits around the world. (Maharani et al., 2021). The National Institute of Health Stroke Scale (NIHSS) can be used to assess the level of stroke damage. Research by Prayitno, Kristiyawati, and Yono (2023) stated that 50.8% of stroke patients were severe, 18.5% were moderate, and 30.8% were mild. (Prayitno et al., 2023). Stroke can also cause paralysis, resulting in decreased independence in self-care; patients will experience difficulty carrying out daily activities or activities of daily living (ADL) such as walking, dressing, eating, or controlling defecation or urination. Diantari (2021) stated that as many as 30% of stroke patients experience a decrease in ADL scores (total dependency), so they need to be given total care during treatment.

The impact of stroke is a decrease in body function, so the patient experiences a reduction in fulfilling ADLs. There is not much research on palliative needs in stroke patients. (Creutzfeldt et al., 2015). In previous studies, researchers only looked for a relationship between the severity of stroke and impaired ADL fulfillment. This study analyzed the relationship between stroke severity scale with palliative screening, activities of daily living (ADL) impairment, and quality of life.

## Methods

This research is a quantitative research with a cross-sectional study design. The population of this study was all stroke patients hospitalized at Dr. Kariadi Central General Hospital. In 2022, will be 582 patients recorded, so the monthly average is 49. Due to the small population, researchers did not set inclusion and exclusion criteria to select respondents. Researchers used accidental sampling techniques to select respondents. By the end of the study, 60 stroke patients had become respondents. This research was conducted at Dr. Kariadi Central General Hospital's Stroke Unit from February until May 2024. Ethical clearance has been carried out by Dr. Kariadi Central General Hospital ethics committee, with number 1641/EC/KEPK-RSDK/2023.

Gender, age, type of stroke, type of stroke onset, hypertension history, and muscle strength were assessed by respondent characteristics sheet. The National Institute of Health Stroke Scale (NIHSS) was used to observe stroke severity scale, the Palliative Care Screening Tool (PCST) to observe palliative screening, the Barthel Index to assess ADL impairment, and the - Specific Quality of Life (SS-QOL) to assess respondents quality of life. The researcher explained the research procedures to the respondents and asked respondents who agreed to fill out and sign the informed consent. Then, respondents were observed for their characteristics, stroke severity, palliative screening, ADL impairment, and quality of life. Researchers re-checked and validated the data with respondents. The collected data was then analyzed using the Pearson Product Moment and Spearman Rank tests to answer the research question: is there a relationship between the degree of stroke severity and palliative screening, impaired ADL fulfillment, and quality of life?

## Results

1. Respondent Characteristics

Table 1
Respondent Characteristics (n=60)

| Respondent Characteristics | | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 33 | 55 |

PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

| | | | |
|---|---|---|---|
| | Female | 27 | 45 |
| Age | 45 – 54 y.o | 13 | 21,7 |
| | 56 – 65 y.o | 44 | 73,3 |
| | >65 y.o | 4 | 5,0 |
| Type of stroke | Ischemic stroke | 34 | 56,7 |
| | Haemoragic stroke | 26 | 43,3 |
| Type of stroke onset | First onset | 25 | 41,7 |
| | Repeated onset | 35 | 58,3 |
| Hypertension history | Yes | 50 | 83,3 |
| | No | 10 | 16,7 |
| Musscless strength | 0 | 10 | 16,7 |
| | 1 | 11 | 18,3 |
| | 2 | 17 | 28,3 |
| | 3 | 20 | 33,3 |
| | 4 | 2 | 3,3 |

Table 1 above showed that the majority of respondents were male (55%), 56 – 65 years old (73.3%), and experienced ischemic stroke (56.7%) with repeated onset (58.3%), history of hypertension (83.3%), and muscle strength 3 (33.3%).

2. Stroke severity scale, palliative screening, ADL impairment, and quality of life

Table 2
Stroke severity scale, palliative screening, ADL impairment, and quality of life (n=60)

| | Variable | **Frequency** | **Percentage (%)** |
|---|---|---|---|
| Stroke severity scale | Minor stroke | 6 | 10,0 |
| | Moderate stroke | 32 | 53,3 |
| | Severe stroke | 22 | 36,7 |
| Palliative screening | Consider palliative care consult | 6 | 10,0 |
| | A palliative care consult is recommended | 54 | 90,0 |
| *Activity Daily Living* (ADL) | Total dependency | 34 | 56,7 |
| | Severe dependency | 26 | 43,3 |
| Quality of life | Can not assess | 40 | 66,7 |
| | Low quality of life | 20 | 33,3 |

Table 2 above shows that the majority of patients experienced a moderate stroke (53.3%), a palliative care consult was recommended (90.0%), experienced total dependence (56.7%), and their quality of life could not be assessed (66.7% )

3. Correlation between stroke severity scale and palliative screening

Table 3
Correlation between stroke severity scale and palliative screening

| Variable | n | r | *p-value* |
|---|---|---|---|
| Stroke severity scale – palliative screening | 60 | 0,671 | 0,000 |

Table 3 shows a significance value of 0.00 (p-value> 0.05), indicating a correlation between the stroke severity scale and palliative screening. The correlation value is

PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

0.671, which is very strong between the degree of stroke severity and palliative screening with a positive relationship direction.

4. Correlation between stroke severity scale and ADL impairment

Table 4
Correlation between stroke severity scale and ADL impairment

| Variable | n | r | *p-value* |
|---|---|---|---|
| Stroke severity scale – ADL impairment | 60 | -0,341 | 0,008 |

Table 4 showed that the significance value was 0.008 (p-value> 0.05), which means there is a correlation between the stroke severity scale and activities of daily living (ADL) impairment. The correlation value is -0.341, meaning the correlation is strong and has a negative relationship direction.

5. Correlation between stroke severity scale and quality of life

Table 5
Correlation between stroke severity scale and quality of life

| Variable | n | r | *p-value* |
|---|---|---|---|
| Stroke severity scale – quality of life | 60 | 0,441 | 0,000 |

Table 5 shows that the significance value is 0.000 (p-value> 0.05), indicating a correlation between the stroke severity scale and quality of life. The correlation value is 0.441, meaning that the correlation is between the stroke severity scale and the quality of life with a positive correlation direction.

## Discussion

The research results in Table 1 show that the majority of stroke sufferers were male (55%) and aged 56 - 65 years (73.3%). These results are in line with research by Peters et al. (2020), which states that the number of male stroke sufferers is more than that of females. More men experience ischemic stroke (11.35%) (Peters et al., 2020). Several studies state that there is no relationship between gender and the incidence of stroke. The absence of a relationship between gender and the incidence of stroke can be caused by the fact that the incidence of stroke can be multifactorial, not just gender, including diabetes mellitus, hypercholesterolemia, smoking, alcohol, and heart disease. (Sofyan et al., 2013). Age is a risk factor for stroke that cannot be changed. The risk of stroke increases with age. This is related to the decreased elasticity of blood vessels. This is in line with research by Sertani et al. (2023), which states that the majority of stroke sufferers are > 40 years old. Meanwhile, the most common risk factor found in stroke sufferers aged > 75 years is a history of hypertension. (Soto-Cámara et al., 2020).

In this study, it was found that the majority of respondents suffered from ischemic stroke (56.7%). In line with American Heart Association (AHA) data, in 2021, the number of ischemic stroke sufferers (77.2 million) was more significant than hemorrhagic stroke sufferers (20.7 million). Ischemic stroke occurs due to obstruction of a thrombus in a blood vessel due to atherosclerosis in the cervical blood vessels and cerebral arteries, resulting in ischemia in all or part of the origin around the blocked area (Cassella & Jagoda, 2017). A study reported that ischemic stroke sufferers showed better functional and clinical status than hemorrhagic stroke sufferers when treated in an intensive rehabilitation unit (Salvadori et al., 2021). The research results also showed that most respondents experienced a re-stroke (58.3%). Patients who have suffered a stroke are at risk of experiencing a repeat stroke. Recurrent (secondary) stroke is a

PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

stroke that occurs less than or equal to 30 days after the first stroke, which is a complication that often arises after the patient returns home from hospital treatment. (Wulandari & Herlina, 2021).

The main risk factor for stroke is hypertension, either high systolic or diastolic pressure. In this study, it was found that the majority of respondents had a previous history of hypertension (83.3%). Other research also states that 53.8% of stroke sufferers have a history of hypertension. (Prayitno et al., 2023). Hypertension will trigger the appearance of plaque in large blood vessels (atherosclerosis). Plaque in the blood vessels will cause a stroke. The results showed that most respondents had muscle strength 3 (33.3%) in the affected extremity. These results align with research by Batubara and Tarigan (2021), in which most respondents also had muscle strength 3 (Batubara & Tarigan, 2021).

Table 2 shows that most respondents experienced moderate stroke (53.33%) according to the degree of severity. These results align with research by Murbawani et al. (2020), which states that strokes with moderate and severe severity are more common.(Sari et al., 2020)If the nervous disorder lasts 24 hours, a person is said to have neurological damage. The National Institute Health of Stroke Scales (NIHSS) validly assesses stroke severity.(Kwah & Diong, 2014). The severity of stroke can be divided into three, namely, mild stroke if the NIHSS score is 0-8, moderate stroke if the NIHSS score is 9-15, and severe stroke when the NIHSS score is >16 (Kwah & Diong, 2014).

In this study, the majority of respondents required palliative care. Stroke is the leading cause of death and disability; this has an impact on the physical, emotional, social, and spiritual aspects of the patient and family. Several studies say that stroke patients need palliative care. Generally, stroke sufferers experience symptoms of dyspnea, post-stroke pain, hemiplegia and spasticity, constipation, grief, anxiety, and fatigue. This causes the need for a palliative care approach for stroke sufferers. (Steigleder et al., 2019). Palliative care aims to reduce suffering, prolong life, improve quality of life, and support sufferers' families. (Shatri et al., 2020)

In this study, it was found that the majority of stroke sufferers experienced total dependence. Previous research revealed that most of the sufferers of ischemic stroke experience total reliance. Meanwhile, in hemorrhagic stroke, all sufferers experience total dependence. (Nurhidayat et al., 2021). The impact of disability due to stroke that many patients suffer from is paralysis in the form of hemiplegia (paralysis of one leg or one arm or even one part of the face) or hemiparesis (paralysis but not entirely of one leg or one hand, or one part of the face) which can be caused by brain tissue. Damage to opposite parts of the body. This paralysis results in the patient being unable to move freely, so he is unable to perform ADLs freely and requires the help of another person. In stroke patients, ADL fulfillment is also influenced by the level of depression and family support. (Silalahi et al., 2022).

In this study, most respondents could not assess their quality of life because they experienced decreased awareness. The research was conducted in a stroke unit where the majority of patients experienced reduced consciousness and were in the acute phase of a stroke. Post-stroke patients usually lose their functionality in social, emotional, and physical terms, and there can be disruption in their daily activities so that patients who experience a stroke in the first six months, the patient feels like they have lost part of their life; this affects the patient's quality of life. After stroke, patients experience changes in health, and their quality of life tends to be poor, so they must respond and adapt after a stroke to maximize their quality of life (Abdu et al., 2022). Research on the quality of life of stroke patients can be carried out if the patient has good awareness (compliments) and there are no communication problems. Rismawan et al. (2021) developed research on stroke patients who visited the outpatient clinic. The results of the study showed that 69.8% of post-stroke patients had a poor quality of life in the psychological

PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

dimension, 64.2% had a poor quality of life in the physical dimension, and 47.2% had a poor quality of life in the social dimension (Rismawan et al., 2021).

The research results in Table 3 show a relationship between the degree of stroke severity and palliative screening. Most previous studies relate stroke prognosis to age and stroke severity, which are essential predictors of disability and death that will occur in patients. (Holloway et al., 2014). Stroke patients with physical, cognitive, and social limitations can reduce their quality of life. (Karim & Lubis, 2017). This is the basis that stroke patients need palliative care. Palliative care symptoms are found in approximately two-thirds of patients who die in acute stroke units, although the actual frequency may be higher. Most health workers tend not to know whether end-of-life symptoms occur in stroke patients compared to cancer patients. It is essential to find out whether the stroke patient's preferences regarding the type of treatment have been met. Cognitive impairment, aphasia, and dysarthria are less well-known—barriers to pain assessment and service access. (Cowey et al., 2021).

The research results in Table 4 show that there is a relationship between the degree of stroke severity and impaired ADL fulfillment. Nurhidayat et al. (2021) stated that both ischemic and hemorrhagic stroke patients experience impaired ADL fulfillment. (Nurhidayat et al., 2021). Severe stroke can have a profound impact on the sufferer, both in the short and long term. (Kevin, 2023). Stroke is the leading cause of functional disorders, where 20% of survivors still need treatment at a health institution after three months, and 15-30% of sufferers experience permanent disability. (Yenni et al., 2011). The high incidence of stroke and the impact of the sequelae caused by stroke should be taken into account. The dependence caused by stroke is very varied, which can be manifested by patients through their ability to carry out daily activities (ADL). Stroke outcomes are generally described in the form of mortality rates and functional status after a stroke. Decreased ability can occur due to reduced consciousness and specific brain areas not functioning due to disruption of blood flow or rupture of blood vessels in that place. Post-stroke conditions are very diverse in their course; they can recover entirely or recover with mild, moderate, and severe disabilities. (Nurhidayat et al., 2021).

The research results in Table 5 show a relationship between the degree of stroke severity and the quality of life. These results align with research by Wandira et al. (2018), which states that the severity of stroke is related to the incidence of stroke-associated pneumonia so that it can reduce the patient's quality of life. (Wandira et al., 2018). The quality of life of stroke patients is also influenced by the length of time they suffer from stroke. (Abdu et al., 2022). Globally, stroke is the third leading cause of disability and is an increasing global burden. (Lozano et al., 2012). Stroke-related disability creates a significant financial burden for stroke sufferers and their families due to the need for stroke-related care and the patient's potential for not being able to return to health—productive activities. (Rhoda, 2014). Previous studies have reported that higher rates of stroke and poorer physical function also have a detrimental impact on quality of life. In addition, 29% – 85% of stroke patients experience symptoms of anxiety and depression, which have been shown to hurt their physical function. The physical consequences of stroke, in addition to the psychological and emotional losses, reduce the social functioning of stroke sufferers, all of which hurt their quality of life. (Hartley et al., 2022).

The limitation of this research is that the quality of life variable could not be studied in some respondents because they experienced decreased awareness. So, this quality of life variable is unsuitable for stroke patients' research during the acute phase.

## Conclusion

The results showed that the majority of patients experienced moderate stroke (53.3%), needed palliative intervention (90.0%), experienced total dependence (56.7%), and their quality

PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

of life could not be assessed (66.7%). Most of the patients experienced moderate stroke (53.3%), required palliative intervention (90.0%), experienced total dependence (56.7%), and their quality of life could not be assessed (66.7%). Based on the results of the analysis, it was found that there was a relationship between the degree of stroke severity and palliative screening (p value= 0.000, r = 0.671), interference with fulfilling activities of daily living (ADL) (p value= 0.008; r = -0.341), and positive quality of life (p value= 0.000, r = 0.441). Further research should simultaneously analyze the risk factors for stroke, the stroke severity scale, and things that are influenced by the severity of the stroke so that it can be seen which variable is more dominant.

## Ethics approval and consent to participate

This research received ethical approval from the Dr. Kariadi Central General Hospital ethics committee, with number 1641/EC/KEPK-RSDK/2023.

## Acknowledgments

We want to thank STIKES Telogorejo Semarang for supporting this research's implementation and Dr. Kariadi Central General Hospital as a research site. We hope that this research will be helpful for society, especially for stroke sufferers.

## References

Abdu, S., Satti, Y. C., Payung, F., & Soputan, H. A. (2022). Analisis Kualitas Hidup Pasien Pasca Stroke Berdasarkan Karakteristik. *Jurnal Keperawatan Florence Nightingale*, *5*(2), 50–59. https://doi.org/10.52774/jkfn.v5i2.107

Amalia, I., & Listia, M. (2020). Perawatan Paliatif terhadap Kualitas Hidup Pasien Kanker Payudara. *Jurnal Keperawatan Silampari*, *4*(1), 281–292. https://doi.org/https://doi.org/10.31539/jks.v4i1.1328.

Batubara, T. I., & Tarigan, M. (2021). *Gambaran Kekuatan Otot Pada Pasien Stroke Hemiplegia di Rumah Sakit Tentara Pematangsiantar* [Universitas Sumatera Utara]. https://repositori.usu.ac.id/handle/123456789/32643

Cassella, C. R., & Jagoda, A. (2017). Ischemic Stroke: Advances in Diagnosis and Management. *Emergency Medicine Clinics of North America*, *35*(4), 911–930. https://doi.org/10.1016/j.emc.2017.07.007

Cowey, E., Schichtel, M., Cheyne, J. D., Tweedie, L., Lehman, R., Melifonwu, R., & Mead, G. E. (2021). Palliative care after stroke: A review. *International Journal of Stroke*, *16*(6), 632–639. https://doi.org/10.1177/17474930211016603

Creutzfeldt, C. J., Holloway, R. G., & Curtis, J. R. (2015). Palliative Care: A Core Competency for Stroke Neurologists. *Stroke AHA Journal*, *46*(9), 2714–2719. https://doi.org/10.1161/STROKEAHA.115.008224

Dinkes Jawa Tengah. (2021). *Buku Saku Kesehatan Prov Jateng Tahun 2021*. https://dinkesjatengprov.go.id

Hartley, T., Burger, M., & Inglis-Jassiem, G. (2022). Post-stroke health-related quality of life, severity, and function: A longitudinal cohort study. *African Journal of Disability*, *11*, 1–10. https://doi.org/10.4102/ajod.v11i0.947

Holloway, R. G., Arnold, R. M., Creutzfeldt, C. J., Lewis, E. F., Lutz, B. J., McCann, R. M., Rabinstein, A. A., Saposnik, G., Sheth, K. N., Zahuranec, D. B., Zipfel, G. J., & Zorowitz, R. D. (2014). Palliative and end-of-life care in stroke: A statement for healthcare professionals from the American Heart Association/American stroke association. *Stroke*, *45*(6), 1887–1916. https://doi.org/10.1161/STR.0000000000000015

PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

Karim, U. N., & Lubis, E. (2017). Kualitas Hidup Pasien Stroke dalam Perawatan Palliative Homecare. *Jurnal Ners Dan Kebidanan Indonesia*, *5*(1), 42. https://doi.org/10.21927/jnki.2017.5(1).42-50

Kevin. (2023). *Apakah Stroke Berat Dapat Disembuhkan? Ketahui Cara Pengobatannya!* https://www.emc.id/id/care-plus/apakah-stroke-berat-dapat-disembuhkan-ketahui-cara-pengobatannya

Kwah, L. K., & Diong, J. (2014). National Institutes of Health Stroke Scale ( NIHSS ). *Journal of Physiotherapy*, *60*(1), 61. https://doi.org/10.1016/j.jphys.2013.12.012

Lozano, R., Naghavi, M., Foreman, K., Lim, S., Shibuya, K., Aboyans, V., Abraham, J., Adair, T., Aggarwal, R., Ahn, S. Y., AlMazroa, M. A., Alvarado, M., Anderson, H. R., Anderson, L. M., Andrews, K. G., Atkinson, C., Baddour, L. M., Barker-Collo, S., Bartels, D. H., … Murray, C. J. L. (2012). Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: A systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*, *380*(9859), 2095–2128. https://doi.org/10.1016/S0140-6736(12)61728-0

Maharani, T., Juli, C., & Nugraha, A. (2021). Karakteristik Luaran Klinis Neurologis Pasien Stroke Iskemik Berbdasarkan NIHSS. *Jurnal Kedokteran Syiah Kuala*, *21*(3), 212–221. https://doi.org/10.24815/jks.v21i3.20578

Nugroho, A. (2021). *Perawatan Paliatif Penderita Kanker Hadapi Dilema*. Universitas Gadjah Mada. https://ugm.ac.id/id/berita/20744-perawatan-paliatif-penderita-kanker-hadapi-dilema/

Nurhidayat, S., Andarmoyo, S., & Widiyati, W. (2021). Tingkat Ketergantungan Activity Daily Living (Adl) Pada Pasien Stroke (Iskemik Dan Hemoragik) Berdasarkan Indeks Barthel Di Rsud Dr. Harjono S. Ponorogo. *Jurnal Kesehatan Mesencephalon*, *7*(1). https://doi.org/10.36053/mesencephalon.v7i1.271

Peters, S. A. E., Carcel, C., Millett, E. R. C., & Woodward, M. (2020). Sex differences in the association between major risk factors and the risk of stroke in the UK Biobank cohort study. *Neurology*, *95*(20), E2715–E2726. https://doi.org/10.1212/WNL.0000000000010982

Prayitno, U., Kristiyawati, S., & Yono, N. (2023). Hubungan Lama Mencari Pertolongan dengan Derajat Keparahan Pasien Stroke di RSUD dr. Loekmono Hadi Kudus. *Konferensi Nasional Dan Call Paper STIKES Telogorejo Semarang: Peningkatan Kualitas Hidup Untuk Pasien Dengan Gangguan Neuromuskulat*, 29–40. https://ojs.stikestelogorejo.ac.id/index.php/prosemnas/article/view/383/110

Rhoda, A. J. (2014). Health-related quality of life of patients six months poststroke living in the Western Cape, South Africa. *African Journal of Disability*, *3*(1), 1–6. https://doi.org/10.4102/ajod.v3i1.126

Riskesdas. (2018). *Riset Kesehatan Dasar Tahun 2018*. Kementrian Kesehatan Republik Indonesia. remakes.go.id

Rismawan, W., Lestari, A. M., & Irmayanti, E. (2021). Gambaran Kualitas Hidup Dan Karakteristik Pasien Pasca Stroke Di Poli Syaraf Rsud Dr. Soekardjo Kota Tasikmalaya. *Jurnal Kesehatan Bakti Tunas Husada: Jurnal Ilmu-Ilmu Keperawatan, Analis Kesehatan Dan Farmasi*, *21*(2), 247. https://doi.org/10.36465/jkbth.v21i2.757

Salvadori, E., Papi, G., Insalata, G., Rinnoci, V., Donnini, I., Martini, M., Falsini, C., Hakiki, B., Romoli, A., Barbato, C., Polcaro, P., Casamorata, F., Macchi, C., Cecchi, F., & Poggesi, A. (2021). Comparison between ischemic and hemorrhagic strokes in functional outcome at discharge from an intensive rehabilitation hospital. *Diagnostics*, *11*(1). https://doi.org/10.3390/diagnostics11010038

Sari, C. B., Subagio, H. W., & Murbawani, E. A. (2020). Hubungan Derajat Keperahan Stroke dengan Perubahan Status Gizi Pasien di Unit Stroke. *Indonesian Journal of Clinical Nutrition*

PROFESIONAL HEALTH JOURNAL
Volume 6, No. 1, December 2024 (Page. 153-161)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v6i1.787

*Physician*, *3*(1), 65–79.

Shatri, H., Faisal, E., Putranto, R., & Sampurna, B. (2020). Advanced Directives pada Perawatan Paliatif. *Jurnal Penyakit Dalam Indonesia*, *7*(2). https://doi.org/https://doi.org /10.7454 /jpdi.v7i2.315

Silalahi, K., Saragih, Y., Waruwu, P., & Florence, I. (2022). Hubungan Penerapan Paliatif Care pada Pasien Stroke dengan Kualitas Hidup. *Jurnal Penelitian Perawat Profesional*, *5*(3), 1377–1386.

Sofyan, A. M., Sihombing, I. Y., & Hamra, Y. (2013). Hubungan Umur, Jenis Kelamin, dan Hipertensi dengan Kejadian Stroke. *Medula*, 24–30. https://doi.org/10.33772/medula.v1i1.182

Soto-Cámara, R., González-Bernal, J. J., González-Santos, J., Aguilar-Parra, J. M., Trigueros, R., & López-Liria, R. (2020). Age-related risk factors at the first stroke event. *Journal of Clinical Medicine*, *9*(7), 1–12. https://doi.org/10.3390/jcm9072233

Steigleder, T., Kollmar, R., & Ostgathe, C. (2019). Palliative Care for Stroke Patients and Their Families: Barriers to Implementation. *Frontiers in Neurology*, *10*(March), 1–8. https://doi.org/10.3389/fneur.2019.00164

Wandira, R. D., Amalia, L., & Fuadi, I. (2018). Hubungan Antara Derajat Keparahan Stroke Dengan Kejadian Stroke-Associated Pneumonia. *Neuron*, *35*(2), 116–120. https://doi.org/10.52386/neurona.v35i2.20

Wardhani, N. R., & Martini, S. (2014). Faktor yang berhubungan dengan pengetahuan tentang stroke pada pekerja institusi pendidikan tinggi. *Journal Universitas Airlangga*, *2*(1), 13–23.

Wulandari, C. I., & Herlina, N. (2021). Hubungan Antara Gaya Hidup Dengan Kejadian Stroke Berulang: Literature Review. *Borneo Student Research*, *2*(3), 1781–1788.

Yenni, Mulyono, S., Sabri, L., Rekawati, E., & Riasmini, N. M. (2011). *Hubungan dukungan keluarga dan karakteristik lansia dengan kejadian stroke pada lansia hipertensi di wilayah kerja Puskesmas Perkotaan Bukittinggi = the correlation between family support and characteristic of elderly with stroke incidence on elderly peop* [Universitas Indonesia]. https://lib.ui.ac.id/detail?id=20282740&lokasi=lokal