

The Behavior Stroke Prevention with Stroke Incidence during the COVID-19 Pandemic

Abu Bakar^{1*}, Intan Adityas², Arina Qona'ah¹, Siti Nur Qomariah³

¹Department of Nursing advanced, Faculty of Nursing, Airlangga University, Surabaya, Indonesia

²Department Basic Nursing, Faculty of Nursing, Airlangga University, Surabaya, Indonesia

³Nursing Program, STIKES Adi Husada, Surabaya, Indonesia

*Corresponding Author: Abu Bakar, Kampus C Mulyorejo Surabaya 60115, Indonesia,
+628121678013

Email: abu.bakar@fkip.unair.ac.id

ABSTRACT

Introduction: The COVID-19 pandemic in Indonesia shows an existence drop in total stroke patients, this shows that the impact of COVID-19 on the epidemiology of stroke is multifactorial. Other research show there is a connection Between incidence of stroke, and factors prevention risk of stroke with COVID-19. Difference results study the show factor the risk that affects the incidence of stroke, it is possibly related to an infection that alone or consequences social from COVID-19 pandemic. The connection between Behavior Stroke Prevention with Stroke Incidence during the COVID-19 Pandemic.

Methods: The research design is a descriptive correlation with a retrospective approach. The population in the study is whole patients who come to neurosurgery. A Sample of 72 people was recruited by a purposive sampling technique. the variables studied are Behavior Stroke prevention and the incidence of stroke. The instrument for collecting data uses the modified Questionnaire from the study before. Data analysis was done by the Chi-Square test.

Results: Results show that behavior stroke prevention (activity physical, behavior smoking, pattern eating, rate stress, drinking drugs regular, and regularly control) exists in connection with stroke during the COVID-19 pandemic. Variable show p-value < 0.05 for everything.

Conclusions: There is a relationship connection between Behavior Stroke Prevention with Stroke Incidence during the COVID-19 Pandemic. Behavior stroke prevention that has been done by routine before the pandemic should be maintained although needs modification.

Keywords: Behavior; Cerebrovascular Accident; COVID-19; Medical-Surgical Nursing; Prevention.

INTRODUCTION

Stroke patients in Indonesia every year could occur among 500.000 inhabitants, where about 25% experience death, and the rest experience disability (Puspitasari, 2020). Province West Java has a number The highest incidence of stroke during the COVID-19 pandemic was 16.6% (Permatasari, 2020). Studies conducted in China and Europe on patients with taking care stay that there are around

2.5% to 6% of stroke events in COVID-19 patients (Kurnianto *et al.*, 2020). Study results from preliminary showing the existence enhancement prevalence visit stroke patients during the COVID-19 pandemic (2019- 2021). Visit stroke patients in 2019 were 341 patients, in 2020 it increased by 10.3%, and in August 2021 an increase by 9.8% (Adityas, 2021).

The study previously shows that there is a connection Between the incidence of stroke, stroke and other factors prevention risk of stroke with COVID-19 (Scutelnic and Heldner, 2020). The impact of the incidence of the stroke itself experienced a drop in health could be seen from aspects state physical, psychological, social, and economic patient. in terms of physical stroke can result in happening paralysed extremity body, face not symmetrical, vision disturbed, trouble swallowing, disturbance sensations, and problems speaking (Astriani *et al.*, 2019). Then, the possible consequences caused by a stroke from aspects psychological that is the existence of different attitudes, anxiety, shock, reaction rejection, emotion, stress, and depression (Sumbogo, Sulisno and Darwati, 2015). In terms of economy Stroke sufferers also experience enough impact big where stroke survivors productive no can carry on his career forgot income in live his family, while for life social stroke sufferers do not could donate thoughts and lack activities in the community (Wardhani and Martini, 2014). Plus with the situation pandemic at the moment, this could worsen problems in stroke patients with Upgrade risk Dead if infected with the COVID-19 virus (Asmaria, Yessi and Hidayati, 2019).

Studies on other differences previously show an existing drop-in total stroke patient in 2020 compared to 2019 (Friedlich, Newman and Bricker, 2021). This result shows the impact of COVID-19 on The epidemiology of stroke is multifactorial, namely: the incidence of stroke can related to risk factors or consequence social from the COVID-19 pandemic (Friedlich, Newman and Bricker, 2021). The current COVID-19 pandemic changes the pattern of life sufferers' stroke risk for To do treatment controlled or activity routine (Maryuni, Nugroho and Rahman, 2021). Change behavior could influence the condition of his health so that easily caught recurrent stroke or diseases other such as COVID-19 (Asmaria, Yessi and Hidayati, 2019). Change the aggravated with condition economic downturn, disruption psychological as condition stress, pattern eat not controlled and limited activity in society (Asmaria, Yessi and Hidayati, 2019).

Changes during the COVID-19 pandemic are a necessary adaptation to behavior stroke prevention. Behavior possible prevention done during a pandemic is to stay home just avoid it, crowd, try activity physical 30 minutes/ day, set a pattern to eat, stop smoking, control stress, regular drink medicine and stay in control routine to service health (Kemenkes RI, 2021). Behavior stroke prevention is done as a step prevention of stroke during the pandemic which aims to own behavior that can avoid stroke as early as maybe. The introduction of early stroke prevention possible to society is very important for lower number the incidence of stroke and reducing the resulting disability (Wardhani and Martini, 2014).

The description shows still there are different results from studies previously related behavior stroke prevention in the future COVID-19 pandemic with stroke incidence. Problem to The incidence of stroke is very widespread and requires proper prevention during a pandemic. Pandemic time makes all groups age start from age productive until with age carry on susceptible caught stroke (Kurnianto *et al.*, 2020). state this requires an existing study with the title " Relationship " Behavior Prevention Stroke with Stroke Incidence during the COVID-19 Pandemic in the Medical-Surgical Nursing Poly".

METHODS

Study Design

Research design is a descriptive correlation with a retrospective approach to analyzing effects (strokes) identified moment this, and behavior stroke prevention identified there is or no exposure that occurs at the time then. The research statement is there is a relationship between Behavior Prevention Stroke with Stroke Incidence during the COVID- 19 Pandemic.

Population, Samples and Sampling

The population in this study is all patients who come to the neurology department. Sample 72 people were recruited with a purposive sampling technique that is divided becomes a group of patients suffering from stroke and a group of patients who do not suffer a stroke. Criteria sample taken is aged between 25- 60 years, have an android cell phone, are not pregnant, and do not take oral contraceptives. The data was collected for 3 months, i.e June until August 2021 at the neurology polyclinic Medirossa Cikarang hospital.

Instruments

Questionnaire behavior stroke prevention, and modifiable stroke incidence from a study previously Questionnaire activity physical activity smoking, diet, stress level, regularity control, and regularity drink drug modified from the study before. Questionnaire Modified stroke incidence from study Yusnabeti. Modification questioner that has tested its validity and reliability show results good ($r > 0.25$ and Alpha-Cronbach 0.712).

Procedure

Behavior data retrieval stroke prevention is taken from secondary data namely medical records patient. Data on the incidence of stroke was collected using an online questionnaire, where suitable patients will be sent Google Forms links related to the questionnaire, including informed consent.

Data Analysis

The data is analyzed by looking at the frequency and percentage. Main data analysis with Chi-Square. test with a level meaning 0.05.

Ethical Clearance

The research procedure has been tested and declared ethically feasible by the Health Research Ethics Commission, Faculty of Nursing, Airlangga University on 09 February 2022 with number certificate ethics no. 2428-KEPK. The ethical principles applied to this study include, among others, that participants were given information and filled out informed consent before data collection. They have the right to data confidentiality by using names and initials.

RESULTS

The results of data collection indicate that the characteristics of respondents who control for neurology at Medirossa hospital are as follows (e.g. Table I). The patient gender is more than half our men in every group. Research subjects in both groups show entry into adulthood end. Education subject on both group more from half is high school.

The results showed that the patients in both groups own trend different results (e.g. Table 2). There is a significant relationship between behavior stroke prevention (activity physical, behavior smoking, pattern eating, stress level, drinking medication, and control) with stroke incidence. Stroke patients and non-stroke patients who do not do activity for more than half. Statistical results show respondents who do not do activity physique chance experience the incidence of stroke by 37.9% compared to those who do activity physically. Stroke patients who do not smoke more than half, medium non-stroke patients almost all no smoking. Respondents who smoke have a 20.3% chance experience incidence of stroke compared with respondents who do not smoke. Diet Most stroke patients eat bad, while the non-stroke group mostly own patterns and eats well. Pattern respondents eat it bad chance experience the incidence of stroke by 32% compared to vice versa. Stroke patients with mild to moderate stress more than half, medium non-stroke patients with almost all mild to moderate stress. Respondents who rate the stress heavy have a 25.9% chance experience incidence of stroke compared with stressed respondents in light-medium. Drinking pattern drug Most stroke patients do not regularly drink medicine, while the non-stroke group almost entirely drink drugs regularly. Respondents who did not regularly drink drugs chance experience the incidence of stroke by 30.3% compared to vice versa. Control to Health services for stroke patients is mostly no regular control, while the non-stroke group mostly routine control. Respondents who did not regularly drink drugs chance experience the incidence of stroke by 33.2% compared to vice versa.

Table I. Demographic characteristics of the respondents (N=72).

Characteristics	Stroke Patient		Non-stroke patients	
	n	%	n	%
Type gender :				
Man	22	61.1	18	50.0
Woman	14	38.9	18	50.0
Age :				
25-35	1	2.8	5	13.9
36-45	3	8.3	6	16.7
46-60	32	88.9	25	69.4
Education:				
Primary school	1	2.8	1	2.8
Junior High School	3	8.3	3	8.3
Senior High School	27	75.0	26	72.2
Diploma	4	11.1	3	8.3
bachelor	1	2.8	3	8.3

Table 2. Relationship behavior prevention of stroke against the incidence of stroke during the COVID-19 pandemic (N= 72).

Indicator	Group						OR 95% CI	Chi-Square (p)
	stroke		Non Stroke		Total			
	n	%	n	%	n	%		
Activities Physical :								
No	24	66.7	13	36.1	37	51.4	3,538 (37.9%)	0.018
Yes	12	33.3	23	63.9	35	48.6		
Total	36	100	36	100	72	100		
Behavior Smoking :								
No	25	69.4	34	94.4	59	81.9	7,480 (20.3%)	0.014
Yes	11	30.6	2	5.6	13	18.1		
Total	36	100	36	100	72	100		
Diet:								
Bad	28	77.8	7	19.4	35	48.6	14,500 (32%)	0.000
Well	8	22.2	29	80.6	37	51.4		
Total	36	100	36	100	72	100		
Stress level:								
Heavy	17	47.2	3	8.3	20	27.8	9,842 (25.9%)	0.001
Moderate/ Mild	19	52.8	33	91.7	52	72.2		
Total	36	100	36	100	72	100		
Drink Drugs :								
No Regular	26	72.2	5	13.9	31	43.1	16,120 (30.3%)	0.000
Regular	10	27.8	31	86.1	41	56.9		
Total	36	100	36	100	72	100		

Control :

No Regular	26	72.2	7	19.4	33	45.8	10,771	0.000
Regular	10	27.8	29	80.6	39	54.2	(33.2%)	
Total	36	100	36	100	72	100		

DISCUSSION

Behavior patients in to do activity physique for stroke prevention has a significant relationship with stroke during the COVID-19 pandemic. Study this in line with a study previously that is existing connection Between activity physique with the incidence of stroke (Hartaty and Haris, 2020). Study others that strengthen statement the is activity physical/ sports regular 30 minutes every day During one week during the pandemic could help reduce risk the occurrence of stroke during the pandemic (Ekawati *et al.*, 2021). State the following theory where activity physique will influence body somebody for produce beta-endorphins. Beta endorphins will induce a sense of calm in the patient so which will influence the pressure of blood patient Becomes under control so which could lower stroke risk.

In line with the results of a study that shows that group stroke patients and groups patients, not a stroke, many don't do activity physique by routine. Activities physique respondents before happening pandemic often do activity physical outside House like regular exercise together 3x in a week for 30- 45 minutes. Respondents many don't regular in To do activity physical during a pandemic because of existing restrictions on activity outside the home. Activities physique respondents experience a drop in To do activity physique be 1- 2 in a week not enough than 30 minutes. Respondents who do not do activity physique increase during the pandemic than those who do activity physical is also found in research previously (Hartaty and Haris, 2020).

Research results next about the connection behavior smoke with stroke incidence. Analysis results show that respondents from the second group that doesn't smoke more many compared to respondents who smoke. The results of the study also show respondents who do not smoke in the group had more stroke patients many than group patients not strokes. Analytical results show there is a significant relationship Among behavior smoke with incident stroke during a pandemic.

Study this in line with a study that previously showed the existence connection Between behavior of smoke with the incidence of stroke (Hartaty and Haris, 2020). State it is also strengthened with found that before the pandemic respondents who have own habit smoke showed an existence increase compared to the pandemic. Respondents who smoke are men in general use up 1- 5 cigarettes a day During pandemics and have already become a habit for more than 10 years. Theory mentions that smoking though only around one stem per day could result in a risk of a stroke (Hackshaw *et al.*, 2018).

More results show that Habits eat respondents who have a pattern eat good more many compared with respondents who have a pattern eat badly. Habits pattern eat bad more in the stroke group than in the non-stroke group. Statistical results show that there is a significant relationship Between pattern eating during a pandemic with stroke incidence. This result is in line with the study the previous one showed patterns eat related to the incidence of stroke (Hartaty and Haris, 2020).

Someone who has a pattern eats bad and consumes food that contains excessive fat content, as a result, could clog arteries. Blockage in arteries bothers Genre blood to the heart (causes attack heart) and brain (causing stroke) (Wayunah and Saefulloh, 2017).

Habit eat respondent getting worse possible before the pandemic pattern eats respondent tend controlled however after the pandemic respondent tends no controlled much time free utilized for eat. In line with the study, the showing pandemic results in pattern eat what you don't control so that could Upgrade pattern poor eating in respondents (Hartaty and Haris, 2020).

Research results next show the existence significant relationship Between the level of stress during a pandemic with stroke incidence. Study this in line with a study previously that data obtained that there is a connection Between the level of stress with the incidence of stroke (Widyaswara Suwaryo, Widodo and Setianingsih, 2019). This thing is possible because the more heavy stress experienced the more big possibility of somebody having a stroke.

Stress experienced by respondents is possible because existence changes in life during the pandemic. Great change compared with before the pandemic was lost work, and restrictions on activity outside the House moment pandemic. Following the theory, where the risk of stroke/ Trans Ischemic Attack due to symptoms of depression, stress chronic, and excessive hostility (Malan et al., 2021).

Regularity drink medicine and control of Health services are also an indicator of research. Regularly drinking drugs have a significant relationship with stroke during the COVID-19 pandemic. This result is in line with a study previous showing that there is a connection between regular drinking drugs and patient hypertension with the incidence of ischemic stroke (Rusminingsih and Mustika Dian, 2018). This thing shows that more regular patients drinking drugs so will reduce the risk of stroke incidence. Taking one pill per day in a week could lower stroke risk (Capriotti and Murphy, 2016).

Regularly drink drug responders during the pandemic no regular because neither respondent regular in control to House sick/ service health consequence afraid about COVID-19. This thing in line with a study previously where respondents who do not regularly drink drugs caused because respondent that also does not regular control House sick (Rusminingsih and Mustika Dian, 2018). Combination Among not order drink medicine and controlling Health services can result in stroke risk is very high. Analysis result research also shows a significant relationship Between regularity control with stroke incidence on the total page.

CONCLUSIONS

Behavior Prevention Stroke has a connection with Stroke Incidence during the COVID- 19 Pandemic in the Nursing Poly Medical Surgery. Behavior stroke prevention who have connection consists of activity physical, behavior smoking, pattern eating, rate stress, regularity drinking medicine, and regularity control to service health. Suggestions for the public are to inspect health by routine, do activity physique by regular 30-50 minutes for 3-5 times a week, set pattern to eat and drink drug routine. Study next need To do a study advanced to evaluate the prevention of stroke incidence with bio-molecular.

ACKNOWLEDGMENT

We would like to acknowledge all of the participants who cooperated in the present study.

CONFLICT OF INTEREST

The Author(s) declare(s) that there is no conflict of interest.

REFERENCES

- Adityas, I. (2021) *Hubungan Perilaku Pencegahan Stroke di Masa Pandemi dengan Kejadian Stroke*. Universitas Airlangga.
- Asmaria, M., Yessi, H. and Hidayati (2019) "PKM Peningkatan Kemampuan Deteksi Dini Stroke Metode ACT Fast di Masa Pandemi COVID-19 pada Masyarakat Desa Pakasai Wilayah Kerja Puskesmas Kota Pariaman," *Jurnal Abdimas Saintika*, 2(2).
- Astriani, N. M. D. Y. et al. (2019) "Terapi AIUEO terhadap Kemampuan Berbicara (Afasia Motorik) pada Pasien Stroke," *Journal of Telenursing (JOTING)*, 1(2). doi: 10.31539/joting.v1i2.924.
- Capriotti, T. and Murphy, T. (2016) *Manifestation Of Ischemic Stroke, Home healthcare now*.
- Friedlich, D., Newman, T. and Bricker, S. (2021) "Impact of the COVID-19 Pandemic on Stroke Epidemiology and Clinical Stroke Practice in the US," *Journal of Stroke and Cerebrovascular Diseases*. DOI: 10.1016/j.jstrokecerebrovasdis.2021.105639.
- Hackshaw, A. et al. (2018) "Low cigarette consumption and risk of coronary heart disease and stroke: Meta-analysis of 141 cohort studies in 55 study reports," *BMJ (Online)*. DOI: 10.1136/bmj.j5855.
- Hartaty, H. and Haris, A. (2020) "Hubungan Gaya Hidup dengan Kejadian Stroke," *Jurnal Ilmiah Kesehatan Sandi Husada*, 12(2). doi: 10.35816/jiskh.v12i2.446.
- Kemendes RI (2021) "Buku Saku Protokol Tatalaksana COVID-19 Buku Saku ed 2," *Kementerian Kesehatan RI*.
- Kurnianto, A. et al. (2020) "Penyakit Stroke dan Infeksi Corona Virus Disease 2019 (COVID-19): Sebuah Tinjauan Literatur," *Medica Hospitalia: Journal of Clinical Medicine*, 7(1A). doi: 10.36408/mhjcm.v7i1a.458.
- Malan, L. et al. (2021) "A stress syndrome prototype reflects type 3 diabetes and ischemic stroke risk: The SABPA study," *Biology*, 10(2). DOI: 10.3390/biology10020162.
- Maryuni, S., Nugroho, S. and Rahman, A. (2021) "Relationship of Eating and Activity During The Covid-19 Pandemic with Repeat Stroke Events at Puskesmas Sritejo Lampung," *Jurnal Vokasi Keperawatan*, 4(1).
- Permatasari, N. (2020) "Perbandingan Stroke Non Hemoragik dengan Gangguan Motorik Pasien Memiliki Faktor Resiko Diabetes Melitus dan Hipertensi," *Jurnal Ilmiah Kesehatan Sandi Husada*, 11(1). doi: 10.35816/jiskh.v11i1.273.
- Puspitasari, P. N. (2020) "Hubungan Hipertensi Terhadap Kejadian Stroke," *Jurnal Ilmiah Kesehatan Sandi Husada*, 12(2). doi: 10.35816/jiskh.v12i2.435.
- Rusminingsih, E. and Mustika Dian (2018) "Hubungan Kepatuhan Minum Obat Pasien Hipertensi dengan Kejadian Stroke Iskemik Di RSJD DR. RM. Soedjarwadi Provinsi Jawa Tengah," *Motorik*, 03.

The 13th International Nursing Conference

- Scutelnic, A. and Heldner, M. R. (2020) "Vascular Events, Vascular Disease and Vascular Risk Factors— Strongly Intertwined with COVID-19," *Current Treatment Options in Neurology*. DOI: 10.1007/s11940-020-00648-y.
- Sumbogo, A., Sulisno, M. and Darwati, L. E. (2015) "Gambaran respons psikologis penderita stroke," *Jurnal Ilmiah Permas*, 5(1).
- Wardhani, N. R. and Martini, S. (2014) "Faktor yang berhubungan dengan pengetahuan tentang stroke pada pekerja institusi pendidikan tinggi," *Universitas Airlangga*, 2.
- Wayunah, W. and Saefulloh, M. (2017) "Analisis Faktor Yang Berhubungan Dengan Kejadian Stroke Di RSUD Indramayu," *Jurnal Pendidikan Keperawatan Indonesia*, 2(2). doi: 10.17509/jpki.v2i2.4741.
- Widyaswara Suwaryo, P. A., Widodo, W. T. and Setianingsih, E. (2019) "Faktor Risiko yang Mempengaruhi Kejadian Stroke," *Jurnal Keperawatan*, 11(4). doi: 10.32583/keperawatan.v11i4.530.