

DETERMINANT FACTORS OF FAMILY BEHAVIOR IN STROKE PREVENTION IN THE ELDERLY

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ABSTRACT

Introduction: Studies show that the number of hypertension patients is increasing and it is a chronic health problem. Patients who have hypertension have an 87.5% risk of experiencing a stroke. The knowledge of the risk of stroke and detection of early symptoms is important to improve family behaviour in preventing stroke in the elderly to minimize visits by the elderly to health services. **Objectives:** This research aims to determine the determinants of family behaviour (knowledge, attitudes, and behaviour) in preventing stroke in the elderly. **Methods:** The research uses quantitative methods with a descriptive-analytical design utilizing a cross-sectional approach. The research sample was 132 elderly people who had hypertension with a sampling technique using the cluster multistage method. Data were collected using a questionnaire developed by researchers that measured family knowledge, attitudes, and behaviour in stroke prevention. Data analysis techniques using the Chi-Square test and Multiple Logistic Regression. **Results:** The characteristic factors of age, gender, education and income were associated with family stroke prevention behaviour ($p < 0.001$). The most dominant factor influencing stroke prevention behaviour is family age ($p = 0.001$, $OR = 4.072$). **Conclusion:** Family empowerment is needed to increase family self-efficacy to improve stroke prevention behaviour in the elderly.

Keywords: Family; knowledge; attitude; behaviour; stroke prevention

ABSTRAK

Pendahuluan: Studi menunjukkan bahwa jumlah pasien hipertensi semakin meningkat dan merupakan masalah kesehatan kronis. Pasien hipertensi mempunyai risiko sebesar 87,5% untuk mengalami stroke. Pengetahuan mengenai risiko stroke dan deteksi gejala dini penting untuk meningkatkan perilaku keluarga dalam mencegah stroke pada lansia sehingga meminimalkan kunjungan lansia ke pelayanan kesehatan. **Tujuan:** Penelitian ini bertujuan untuk mengetahui faktor determinan perilaku keluarga (pengetahuan, sikap dan perilaku) dalam pencegahan stroke pada lansia. **Metode:** Penelitian menggunakan metode kuantitatif dengan desain deskriptif analitik dan pendekatan cross sectional. Sampel penelitian 132 lansia yang mengalami hipertensi dengan teknik sampling menggunakan cluster multistage method. Pengumpulan data

menggunakan kuesioner yang dikembangkan oleh peneliti untuk mengukur pengetahuan, sikap dan perilaku keluarga dalam pencegahan stroke. Teknik analisis data menggunakan uji Chi Square dan Regresi Logistik Ganda. **Hasil:** Faktor karakteristik usia, jenis kelamin, pendidikan dan penghasilan berhubungan dengan perilaku pencegahan stroke keluarga ($p < 0.001$). Faktor yang paling dominan berpengaruh terhadap perilaku pencegahan stroke adalah usia keluarga ($p = 0.001$, $OR = 4.072$). **Kesimpulan:** Pemberdayaan keluarga diperlukan dalam meningkatkan efikasi diri keluarga sehingga mampu meningkatkan perilaku pencegahan stroke pada lansia.

KEYWORDS: Keluarga; pengetahuan; sikap; perilaku; pencegahan stroke

INTRODUCTION

Survey data (2023) shows that 59.1% of the causes of disability in the population 15 years old to on are acquired diseases, where 53.5% of the diseases are non-communicable disease, especially hypertension (22.2%). Hypertension is the number one reason death in the world, with 90-95% of cases dominated by essential hypertension. In Indonesia, according to Indonesian Health Survey (2023), hypertension is the fourth highest risk factor reason death with percentage of 10.2% (Ministry of Health, 2024). Hypertension has been shown to increase the risk of various diseases, such as heart failure, heart attack, kidney failure, stroke and even blindness. Although many complications can arise due to hypertension, it often does not cause any symptoms. Stroke is the third leading cause of death in Indonesia with a mortality rate of 9.7% of total deaths. One of the causes of stroke that is often found in the community is hypertension. The results of a study by Sofiana & Rahmawati (2019) found a significant relationship between hypertension and stroke. Patients with hypertension are at risk of 87.5% having a stroke. There are several risk factors for stroke, namely factors that cannot be modified such as age, gender, and race or ethnicity and factors that can be modified such as hypertension, smoking, diet and activity.

Family support through informational, emotional, instrumental and reward support plays an important role in shaping stroke prevention behavior through education about stroke and providing support for risk factor management. Stroke prevention behavior can be carried out through the CERDIK program (regular health checks, get rid of cigarette smoke, be diligent in physical activity, have a healthy diet with balanced calories, get enough rest and manage stress). In addition, blood pressure measurements and cholesterol checks are carried out regularly (Ministry of Health, 2019). Prevention efforts are one of the most effective and efficient ways to reduce the incidence of stroke (Utama & Nainggolan, 2022). The unpreparedness of families in caring for elderly people with hypertension can have negative impacts such as feeling burdened, feeling anxious, and reduced social interaction with their environment which can have an impact on their social life.

Family stroke prevention behavior is the result of measuring knowledge, attitudes and actions taken by families to minimize the incidence of stroke in the elderly. The results of Nugraha's research (2023) found that the majority (58.2%) of respondents had good stroke prevention

behavior. Families as caregivers are required to be able to provide care to elderly people who experience hypertension so that strokes can be prevented. Supported by the research results of Septianingrum, et.al. (2024) illustrates that factors that are significantly related to the readiness of families to care for stroke patients are age, gender, income, employment, marital status and knowledge. Caregivers need to be given special attention to increase their readiness in providing care for the elderly so that they can improve the quality of life of the elderly, because psychological factors such as the family burden in caring for the elderly contribute to the recurrence of strokes in the elderly (Yaslina, et.al. 2024)

METHOD

The research design is descriptive analytic with a cross sectional design. The research population was all elderly people in the Cakung sub-district area. The research sample was 132 elderly with a sampling technique using the cluster multistage method, in accordance with the inclusion criteria (1) elderly aged 60 years and over; (2) elderly people who have hypertension; (3) able to read and write; (4) and willing to be a respondent. Researchers have obtained health research ethics approval from the Health Polytechnic of the Ministry of Health, Jakarta III with No. LB.02.02/F.XIX.21/3765/2024. Data collection instruments to measure stroke prevention behavior use instruments developed by researchers taken from various sources. Data collection was carried out directly by visiting respondents one by one at home accompanied by local cadres. Questionnaires were given to respondents who were willing to sign an agreement explaining the research or informed consent. This study uses univariate analysis to describe family characteristic data which includes age, gender, marital status, employment, income and family type. Bivariate analysis to determine the relationship between family characteristics and stroke prevention behavior using the chi square test, as well as multivariate analysis to determine the determinant factors using the Multiple Logistic Regression test.

RESULTS AND DISCUSSION

1. Family Characteristics

Table 2. Distribution of Family Characteristics in Cakung District, East Jakarta (n=132)

Variable	Frequency (n)	Percentage (%)
Age		
1. 20-44 years	113	85.6
2. 45-59 years	19	14.4
Gender		
1. Female	86	65.2
2. Male	46	34.8
Marital Status		
1. Marriage	115	87.1
2. Not Married	17	12.9
Education		
1. ≥High School	91	69.9
2. <High School	41	30.1
Work		
1. Work	80	60.6
2. Doesn't work	52	39.4
Income		
1. Adequate	61	46.2
2. Inadequate	71	53.8
Type Family		
1. Nuclear Family	95	71.9
2. Extended Family	37	28.1

The results of the analysis of family characteristics in East Jakarta, DKI Jakarta region show that the majority are aged 20-44 years (adult age), gender is female, the majority's marital status is married, and the majority's education level is high school or above. Most families work with half of their income and the majority are nuclear families.

2. Relationship Between Characteristics Family with Behavior Stroke Prevention

Table 2. Relationship between Family Characteristics and Stroke Prevention Behavior in the Cakung District area, East Jakarta (n=132)

Variable	Stroke Prevention Behavior				p-value
	Good		Not good		
	n	%	n	%	
Age					
1. 20-44 years	25	34.7	47	65.3	0.000*
2. 45-59 years	47	78.3	13	21.7	
Gender					
1. Female	32	69.6	14	30.4	0.011*
2. Male	40	46.5	46	53.5	
Married Status					
1. Marriage	59	51.3	56	48.7	0.052
2. Not Married	13	76.5	4	23.5	
Education					
1. ≥High School	59	72	23	28	0.000*
2. <High School	13	26	37	74	
Work					
1. Work	43	53.8	37	46.2	0.961
2. Doesn't work	29	55.8	23	44.2	
Income					
1. Adequate	63	67.7	30	32.3	0.000*
2. Inadequate	9	23.1	30	76.9	
Type Family					
1. Nuclear Family	54	56.8	41	43.2	0.396
2. Extended Family	18	48.6	19	51.4	

*Sig. at $p\text{-value} < \alpha (0.05)$

The results of the analysis show that there is a significant relationship between age, gender, education and income with family behavior towards stroke prevention in the elderly ($p\text{-value} < 0.005$). Meanwhile, marital status, employment and family type did not have a significant relationship with family behavior towards preventing stroke in the elderly ($p\text{-value} > 0.005$).

3. Influence Family Characteristics to Stroke Prevention Behavior

Bivariate selection for the dependent variable of stroke prevention behavior, there are 5 (five) independent variables that meet the requirements for inclusion in the multivariate model, namely age, gender, marital status, education and income with $p\text{-value} \leq 2.50$. After carrying out multivariate analysis using the Multiple Logistic Regression test, the final results are as follows:

Table 3. Final Model: Influence Family Characteristics to Stroke Prevention Behavior in East Jakarta, DKI Jakarta Region (n=132)

Variables	B	SE	p-value	Exp (B)
Age	1,916	0.399	0.001*	6,797
Constant	-1.285	0.313	0.001	0.277

*Sig. at $p\text{-value} < \alpha (0.05)$

The results of multivariate analysis show that the factor that has the most influence on stroke prevention behavior is family age ($p\text{-value}=0.001$, $OR=6.797$). Pre-elderly aged (45-59 years) are 6,797 times more likely to have good behavior in preventing hypertension compared to adults (20-44 years).

The results of the study showed that there was a significant relationship between age, gender, education and income on family behavior in preventing stroke. The factor that most influences stroke prevention behavior is family age. This is supported by the research results of Septianingrum, et.al. (2024) illustrates that factors that are significantly related to the readiness of families to care for stroke patients are age, gender, income, employment, marital status and knowledge.

The family as caregivers plays an important role in preventing stroke in the elderly. The support provided by the family can improve the health status of the elderly so that it has an impact on their quality of life. Stroke prevention behavior can be improved through education and family assistance in caring for elderly people with hypertension. The research results of Setiawati, Lipoeto, Syafrita and Bachtiar (2022) illustrate that there was an increase in caregiver knowledge, attitudes and skills after training on stroke prevention. By empowering caregivers, we have succeeded in increasing stroke prevention behavior, so they are able to provide care to the elderly at home. In line with the research results of Husnaniyah et al., (2021), it was found that the majority of respondents had good behavior in preventing stroke. Knowledge related to preventing hypertension is important for families. Having the right knowledge will help caregivers provide appropriate care services and monitor health risks and complications that may arise in the elderly. This is in accordance with the results of research by Safitri, et al (2020) which found that the majority of respondents had good knowledge and motivation in preventing stroke in hypertension patients.

Age is significantly related to family behavior in preventing stroke in the elderly. The research results found that the majority of pre-elderly families (45-59 years) had good behavior in preventing stroke in the elderly. Especially when caring for a partner whose emotional closeness is stronger, they will try to find various information related to stroke prevention. In line with the results of research by Recep and Karpal (2019), it shows that care provided by a partner is related to emotional involvement where the attention and responsibility for caring for the partner is greater. Also related to the research results, it was found that the majority of family types were nuclear families where the majority of elderly people lived with children who were the main support in caring for elderly people with hypertension. Pre-elderly age is associated with better experience of caring for the elderly compared to adulthood. Experience caring for the elderly is followed by increasing knowledge and skills in caring for the elderly through health education obtained from health workers, increasing self-confidence which has an impact on increasing stroke prevention behavior. Families are able to teach healthy living behavior to the elderly and monitor the development of the elderly's health through routine health checks at health services. This is supported by the results of research by Bakri, Irwandy and Linggi (2020) showing that there is an influence of health education about caring for stroke patients at home on the level of family knowledge.

Gender is significantly related to family behavior in preventing stroke in the elderly. The research results found that the majority of female families had good behavior in preventing stroke in the elderly. Families with women tend to be more patient in caring for the elderly, and understand more about how to care than men. Family with type women tend more patience in caring the elderly, better understand how to care for the elderly compared to men. This is in accordance with the results of research by Septianingrum (2024), found that the number of female caregivers is greater than men and women are used to doing household work, including providing for the needs of family members who are at risk or sick. Women are better prepared to care for elderly people with hypertension because they have the ability to carry out care. The research results also found that gender was the most dominant factor influencing family readiness in caring for stroke patients.

Education related in a way significant to behavior family in stroke prevention in the elderly . Research results found majority family educated high school have good behavior in stroke prevention in the elderly. Education is very related with ability absorb information. Higher

education will be better able to search for various sources of information in preventing stroke in the elderly. This is supported by the results of research by Pebrisiana et.al (2022) which illustrates that highly educated people have more health information including hypertension and are easier to accept healthy lifestyles such as healthy eating patterns, exercise and maintaining ideal body weight. Behavior is influenced by a person's level of curiosity in receiving and processing information that will have an impact on their health status.

Income is significantly related to family behavior in preventing stroke in the elderly. The research results found that the majority of families with adequate incomes had good behavior in preventing stroke in the elderly. Insufficient income affects the family's readiness to provide nutritious food that meets the needs of elderly people with hypertension. Apart from that, families are also unable to allocate funds to monitor the health of the elderly through regular health services to prevent strokes. Income and employment are factors that influence readiness to care for post-stroke patients. According to Saito (2018), caregivers who have low socioeconomic status tend to experience increased depression, caregiving burden, and work hours spent on caregiving, as well as decreased access and utilization of health services.

CONCLUSION

The research results show that family characteristics (age, gender, education and income) were associated with family stroke prevention behaviour. The most dominant factor influencing stroke prevention behaviour is family age. The implications in nursing care that family involvement is very important in stroke prevention. Family empowerment is needed to increase family self-efficacy so that it can improve stroke prevention behavior in the elderly. Health education programs on stroke prevention management are very important for families to improve their ability to care for elderly people with hypertension to avoid stroke. By creating awareness and knowledge, family attitudes and behavior about the importance of preventing stroke in the elderly, it will reduce the incidence of stroke and improve the quality of life of the elderly.

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