Results: The plasma miR-93a-5p was increased in AIS patients but not patients with cerebral hemorrhage. ROC analysis revealed that the area under curve for miR-93a-5p in plasma was 0.857, indicating a moderate diagnostic value for stroke. Furthermore, miR-93a-5p levels in lymphocytes in patients at time of admission were negatively correlated with NIHSS scores at admission. Neutrophil miR-93a-5p levels were negatively correlated with the modified Rankin scale, and positively correlated with the Barthel Index 7 days after thrombolysis. Moreover, positive a correlation existed between miR-93a-5p levels in plasma and neutrophils. Lymphocytic miR-93a-5p levels were negatively correlated with the number/percentage of monocytes and positively correlated with neutrophil percentage. In addition, lymphocytic miR-93a-5p levels were positively correlated with platelet count and platelet hematocrit, while miR-93a-5p levels in neutrophils were negatively correlated with the international normalized ratio.

Conclusion: We demonstrated that miR-93a-5p in circulating blood facilitated the diagnosis of acute ischemic stroke, and therefore could aide in the prediction of poststroke neurological outcomes.

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3099

WCN17-0284

SHIFT 8 - STROKE

Demographic factors and the risk of developing stroke: A cross-sectional study

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Background: Stroke incidence has been reported to be increasing worldwide. This poses a concern in Indonesia, because it is the country with the highest prevalence of stroke in Asia, and where stroke is the leading cause of death. Stroke can be caused by multiple factors such as hypertension, diabetes, smoking, lack of exercise, obesity, stroke in the family, sex, age, cognition, and even knowledge regarding the illness. An individual's lifestyle can be influenced by the surrounding environment.

Objective: To identify the distribution of risk factors, stroke risk factor category and their correlation with socio-demographic information.

Patients and Methods / Material and Methods: Cross-sectional descriptive quantitative research with non-random proportional sampling of 368 respondents in Lippo Karawaci.

Results: The stroke risk factors frequency distribution of the Lippo Karawaci population are as follows: high cholesterol (41.58%), lack of exercise (18.48%), high blood pressure (8.97%), smoking (6.52%), body mass index (5.16%), diabetes (3/26%) and irregular heart rate (0.82%). The distribution of stroke risk factor categories include 191 "low risk" individuals (51.9%), 143 "medium risk" individuals (38.86%), and as many as 34 "high risk" individuals (9.24%). There is significant correlation between sex and total stroke risk with p-value of 0.000 and Odd ratio of 3.1 (95% confidence interval 2.03-4.75). Men have a higher tendency for stroke.

Conclusion: There is significant correlation between sex and total stroke risk. Men have a higher tendency for stroke The result of this research can hopefully serve as cautionary information especially on cholesterol to various parties including local government, health facilities, and health education.
IRB approval MRIN No. 04.1607157

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3100

WCN17-2783

SHIFT 8 - STROKE

Neurological symptoms on arrival to predict large vessel occlusion or surgical treatment of intracerebral hemorrhage

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Background: Early identification of patients who need emergent stroke treatment could yield a good outcome.

Objective: We designed simple scales to identify emergent large vessel occlusion (ELVO) in patients with acute ischemic stroke and eligible patients for surgical treatment of intracerebral hemorrhage (ICH), and compared these scales with Kurashiki Prehospital Stroke Scale (KPSS) for prediction of ELVO and surgical treatment of ICH.

Patients and Methods / Material and Methods: We prospectively corrected 2555 patients with suspected stroke, who arrived within 24 hours of symptom onset. We enrolled ischemic stroke and ICH patients. Neurological symptoms on arrival with the highest predictive value of occlusion of a large intracranial artery in patients with acute ischemic stroke and surgical treatment of ICH were identified. Each optimal combination was determined, and compared with KPSS.

Results: Of these patients, 1133 patients (44%) with ischemic stroke and 614 ICH patients (24%) were included. Paramedics recorded KPSS for 589 patients. The most optimal combination for predicting ELVO was composed of gaze palsy, consciousness disturbance and weakness (GCoW score), while that for surgical treatment of ICH was composed of gaze palsy, consciousness disturbance and vomiting (GCoV score). The optimal cut points of GCoW and GCoV scores were 2 with the sensitivity of 88% and 77% and specificity of 73% and 68%, respectively (area under the curve [AUC], 0.841 and 0.697), while these of KPSS were 5 and 6 (sensitivity, 63% and 41%; specificity, 76% and 80%; AUC, 0.692 and 0.511).

Conclusion: Gaze palsy and consciousness disturbance were key symptoms to correctively identify patients who needed interventional stroke treatment.

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3101

WCN17-2764

SHIFT 8 - STROKE

Novel oral anticoagulants in acute ischemic stroke with non-valvular atrial fibrillation

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Background: The use of anticoagulant therapy in the acute stage of ischemic stroke is controversial. Novel oral anticoagulant (NOAC) is effective in preventing recurrent embolism in patients with non-valvular atrial fibrillation (NVAF), but the risk of hemorrhagic transformation is the major concern for its early use in ischemic stroke.

Objective: To study the use of NOAC in patients with acute ischemic stroke and NVAF.

Demographic Factors and The Risk of Developing Stroke: A Cross-Sectional Study

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Abstract

Background: Stroke incidence has been reported to be increasing worldwide. This poses a concern in Indonesia because it is the country with the highest prevalence of stroke in Asia and where stroke is the leading cause of death. Stroke can be caused by multiple factors such as hypertension, Diabetes, smoking, lack of exercise, obesity, stroke in the family, sex, age, cognition, and even knowledge regarding the illness. The surrounding environment can influence an individual's lifestyle.

Objective: To identify the distribution of risk factors, stroke risk factor category and their correlation with sociodemographic information.

Methods: Cross-sectional descriptive quantitative research with non-random proportional sampling of 368 respondents in Lippo Karawaci.

Results: The stroke risk factors of the Lippo Karawaci population are as follows: high cholesterol (41.58%), lack of exercise (18.48%), high blood pressure (8.97%), smoking (6.52%), body mass index (5.16 %), Diabetes (3/26%) and irregular heart rate (0.82%). The distribution of stroke risk factor categories includes 191 "low risk" individuals (51.9%), 143 "medium risk" individuals (38.86%), and as many as 34 "high risk" individuals (9.24%). There is a significant correlation between sex and total stroke risk with a p-value of 0.000 and an Odd ratio of 3.1 (95% confidence interval 2.03-4.75). Men have a higher tendency for stroke.

Conclusion: There is a significant correlation between sex and total stroke risk. Men have a higher tendency for stroke. This research can hopefully serve as cautionary information, especially on cholesterol, to various parties, including local government, health facilities, and health education. IRB approval MRIN No. 04.16071

BACKGROUND

Stroke can strike anyone at any time regardless of age category and when the attack will appear. The incidence of stroke is reported to be increasing in many countries worldwide. Therefore, the problem of stroke is not only a local problem of a country but has become a global concern. Even today, the incidence of stroke is also increasing in the younger population (Chen et al., 2014). In Indonesia, according to data from the Indonesian Ministry of Health 2008 in Yastroki (2011), stroke is the number 1 cause of death in hospitalized patients. Even more concerning is that Indonesia has the most significant stroke cases in Asia, and it is estimated that the number of stroke sufferers will double in 2020 (Yastroki, 2012).

Along with life expectancy that is starting to increase in various parts of the world, the elderly population will also increase, and it is estimated that in 2020 stroke will be the leading cause of the decline in a person's health status and condition so that the years they live are less meaningful (Jones, Jenkinson, Leathley, Wattkins, 2010). Many factors can cause stroke, often divided into two broad categories: modifiable (changeable) and non-modifiable (unchangeable) factors. Therefore, stroke is a disease that can and can be prevented. The majority of stroke risk factors can be controlled either by way of lifestyle modification or with the help of medication (Deen, Azlan, Fairuz, and Zuraidah. 2014).

Efforts that can be made to reduce the incidence of stroke are prevention through health education and early detection of risk factors. Often people begin to check their health condition when they feel there are complaints and when their health conditions start to decline. Some of the efforts to anticipate the incidence of stroke early on are lifestyle modification and prevention of stroke *screening.* Another way is through a medical examination related to the cause of strokes, such as blood pressure, atrial fibrillation, smoking, cholesterol, blood sugar, obesity, activity, and a family history of stroke. Urban communities have a higher risk than rural areas (Addo, Amoah & Kwadwo 2006 inAbdulsalam, Bello, Olarewaju, Regards, 2014).

The increasing incidence of stroke around the world is causing unrest in various countries, including Indonesia, because the burden of disease stroke caused by stroke is not only in physical aspects such as disability but also causes psychological and social impacts. So it is not uncommon for stroke patients' health status to decrease daily and their quality of life.

Prevention is the most effective effort to reduce the incidence of stroke. Prevention through lifestyle modifications contributes to the high and low risk of a person's stroke. The environment can indirectly shape a person's lifestyle and even a person's attitude in maintaining health or preventing disease.

METHOD

This research was conducted in September 2014 through a cross-sectional quantitative analysis study. This study examined the relationship between sociodemographic variables of individuals in Lippo Karawaci, such as age, type of work, gender, education, economic status, marital status, and ethnicity/ethnicity, to the knowledge of stroke. These included a history of smoking, sports activities, and a family history of stroke, measuring blood pressure and pulse rhythm, cholesterol levels, and blood sugar levels. Ethics approval was obtained from the MRIN Ethics Commission (Mochtar Riady Institute for Nanotechnology) with protocol number 04.1607157.

The population in this study were all individuals aged between 18-65 years. Participants were recruited through invitations distributed through email announcements and direct invitations. Sampling in this study used a non-probability proportional sampling method on the individual population. Each participant was given a consent form stating their willingness to become a participant. Participants also filled out a sociodemographic form, a questionnaire about stroke, then an assessment of stroke risk factors. The number of participants in this study was 369 people with the inclusion criteria: willing to be a respondent, 18-65 years old, and can communicate well (Indonesian or English). Exclusion criteria- the individual who identifies with mental disorders—the univariate analysis calculated the frequency distribution of each demographic component and the stroke risk factors category. The bivariate analysis uses chi-square and logistic regression to determine the relationship between each participant's demographic types and risk factors.

RESULT

Table 1 Sociodemographic Factors of Respondents, September 2016 (n=368)

No	Variable	n	Percent
1	Gender		
	Man	170	46.2
	Woman	198	53.8
2	Marital status		
	Not married yet	183	49.73
	Marry	185	50.27
3	Domicile		
	Permanent	183	49.73
	Not fixed	185	50.25
4	Last education		
	SD	2	0.5
	high school	173	47.0
	Diploma/PT	193	52.5
5	Income		
	Not Earning yet	101	27.45
	<3 Million	53	14.4
	3-6 Million	102	27.72
	>6 Million	112	30.43
6	Religion		
	Christian	273	74.39
	Catholic	32	8.72
	Islam	59	16.08
	Buddha	2	0.54
	Hindu	1	0.27
7	Age (Mean±SD)	32.84 ± 12.16 (18-64)	
8	Knowledge (Mean ± SD)	7.88 ± 1.54 (0-10)	

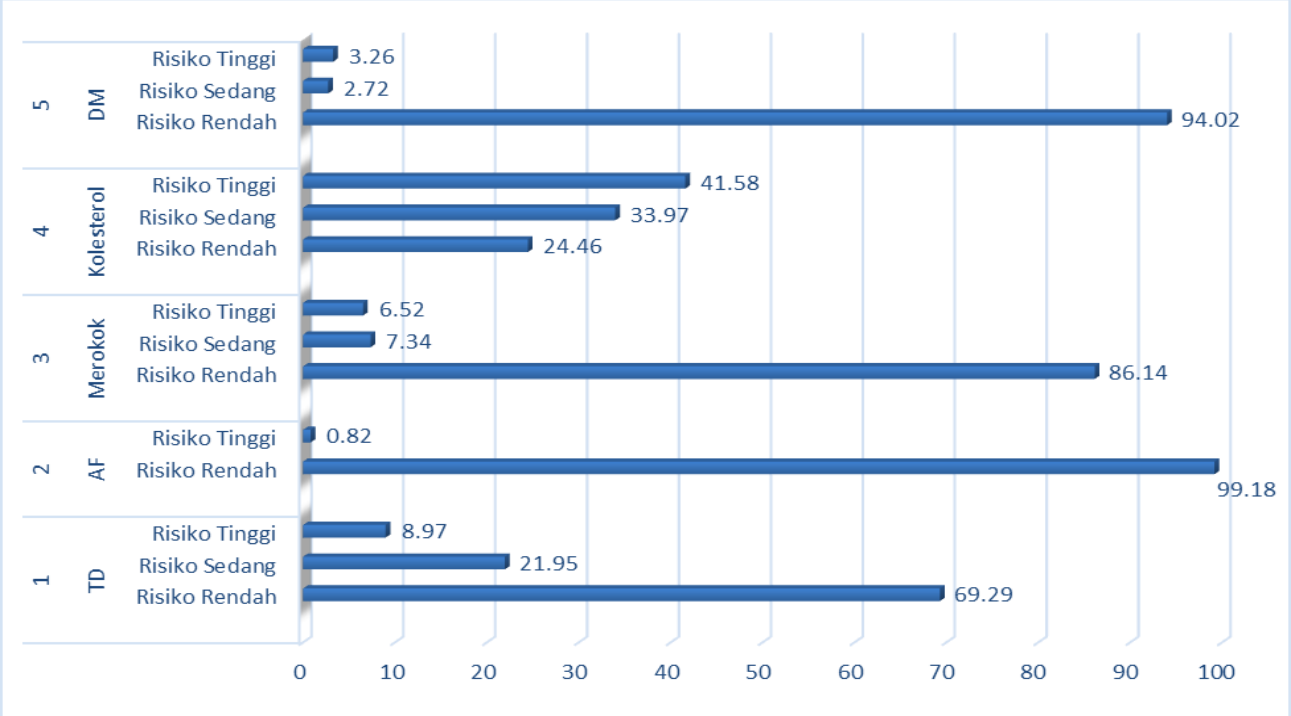
Of the total 368 respondents, there were 198 (54%) women and 170 (46%) men. The average age of the respondents is 33 years, with a standard deviation of 12.16 years, with the youngest respondent being 18 years old and the oldest being 64 years old. The respondents obtained knowledge level scores from 0-10 values with an average correct answer of 7.88 and a standard deviation of 1.54.

Table 2 Results of Assessment of Stroke Risk Factors, Lippo Karawaci September 2016(n=368)

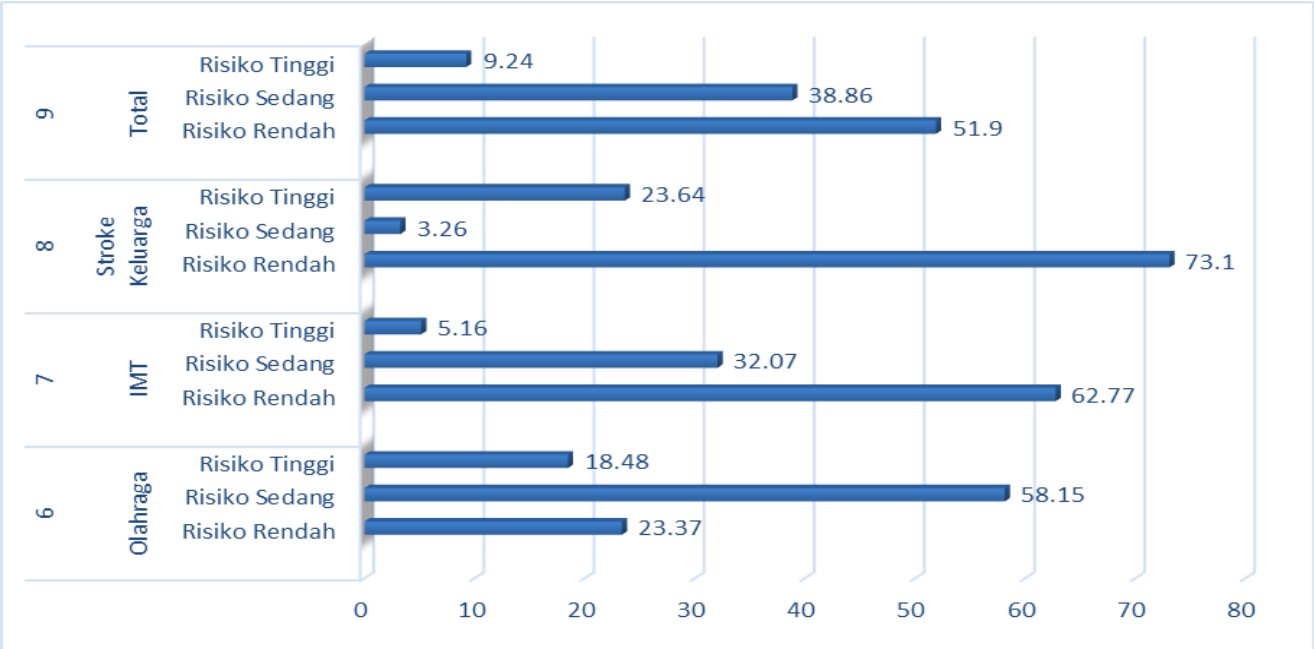
No	Variable	n	Percentage
1	Blood pressure		
	Low Risk	255	69.29
	Moderate Risk	80	21.95
	High Risk	33	8.97
2	Atrial Fibrillation		
	Low Risk	365	99.18
	High Risk	3	0.82
3	Smoking History		
	Low Risk	317	86.14
	Moderate Risk	27	7.34
	High Risk	24	6.52
4	Cholesterol		
	Low Risk	90	24.46
	Moderate Risk	125	33.97
	High Risk	153	41.58
5	Diabetes		
	Low Risk	346	94.02
	Moderate Risk	10	2.72
	High Risk	12	3.26
6	Sport		
	Low Risk	86	23.37
	Moderate Risk	214	58.15
	High Risk	68	18.48
7	Body Mass Index		
	Low Risk	231	62.77
	Moderate Risk	118	32.07
	High Risk	19	5.16
8	Family Stroke History		
	Low Risk	269	73.1
	Moderate Risk	12	3.26
	High Risk	87	23.64
9	Stroke Risk Category		
	Low Risk	191	51.9
	Moderate Risk	143	38.86
	High Risk	34	9.24

The measurement of stroke risk factors found that cholesterol examination and family history of stroke showed a high percentage of high risk compared to other risk factors. On cholesterol examination, 153 (41.58%) people were found in the high-risk group; medium risk 125 (33.97%) people and low risk 90 (24.46%) people. Likewise, in the family history of stroke, there were about 87 (23.64%) people with high risk and 12 (3.26%) people with moderate risk.

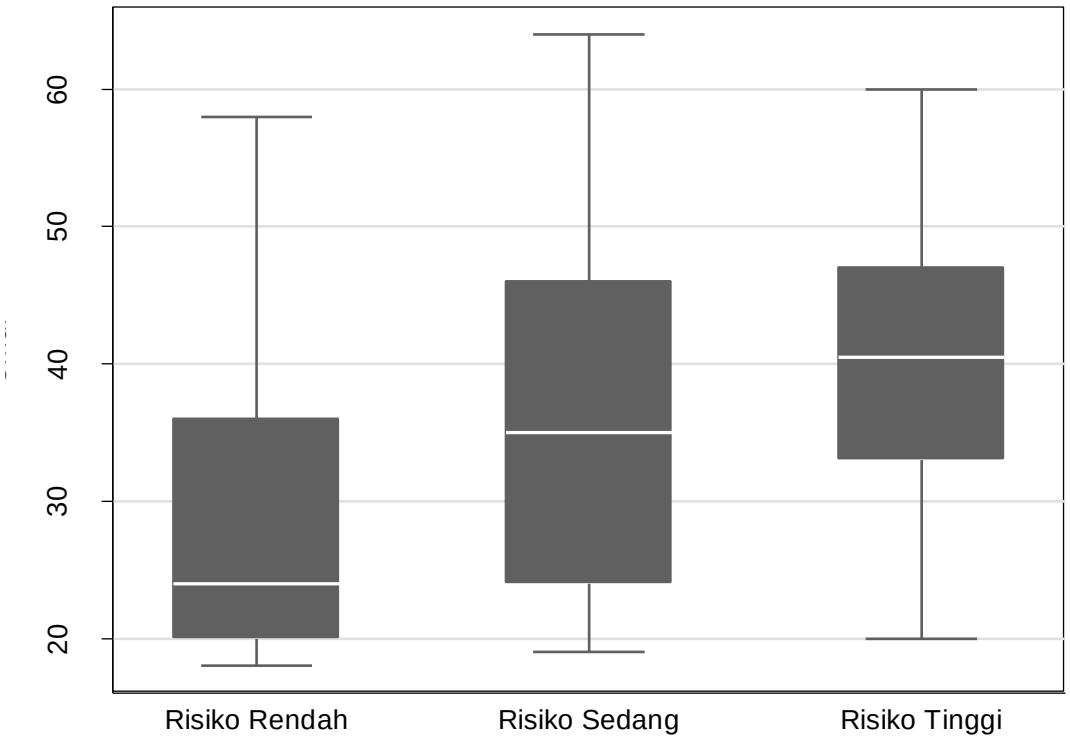
In other risk factors ranging from blood pressure factors, there are 33 (8.97%) with high risk, 80 (21.95%) people with moderate risk and there are 255 (69.29%) people with low risk. On examination of atrial fibrillation with examination of the presence or absence of an irregular pulse, 3 (0.82%) people were in the high risk category and as many as 365 (99.18%) people were at low risk. Meanwhile, the smoking history found as many as 24 (6.52%) people at high risk, 27 (7.34%) people at moderate risk and 317 (86.14%) people at low risk. Likewise, in Diabetes it was found that 12 (3.26%) people were at high risk, 10 (2.72%) people were at moderate risk and 346 (94.02%) people were at low risk. While the risk factors for sports with high risk were 68 (18.48%) people, and moderate risk 214 (58.15%) people. From the sum of the total risk factors, there were 34 (9.24%) people with high risk, and 143 (38.86%) with moderate risk, and 191 (51.9%) with low risk.



Graph. 1 Histogram of Stroke Risk Factors BP, AF, Smoking, Cholesterol, DM

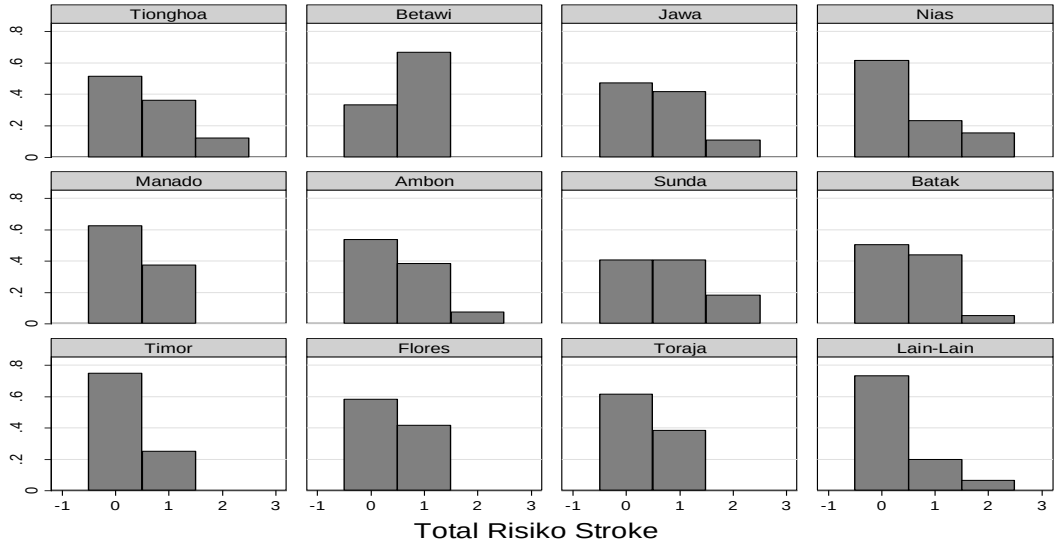


Graph 2 Histogram of Advanced Stroke Risk Factors: Exercise, BMI, Stroke in the family



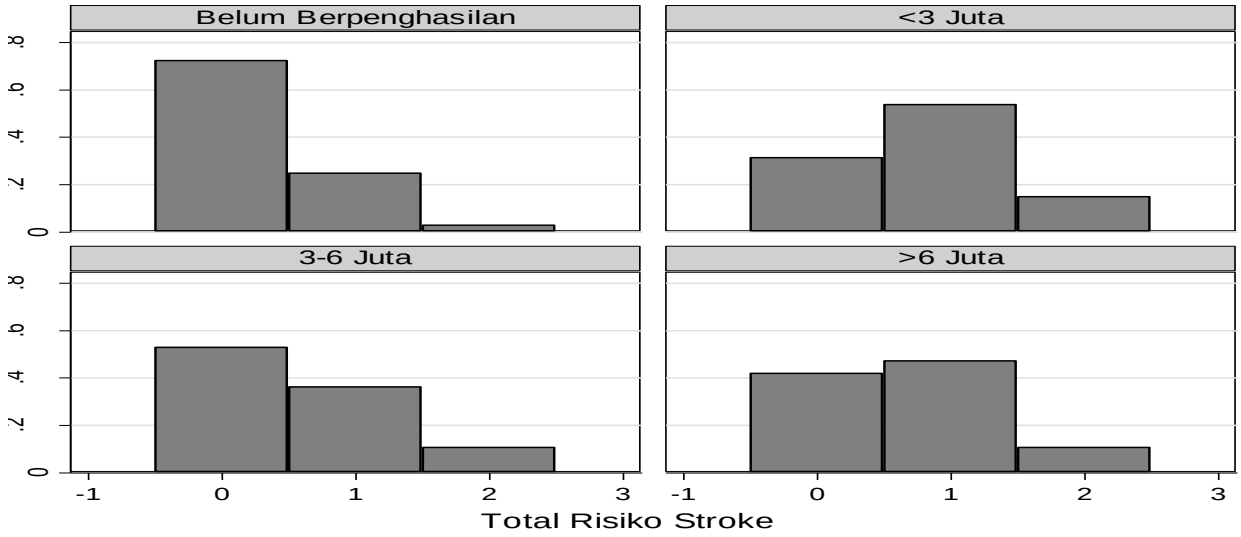
Box Plot 3 Distribution of Mean Age in the Stroke Risk Factor Group

The graph above shows that the older the respondent, the greater the risk of stroke compared to the younger age group.



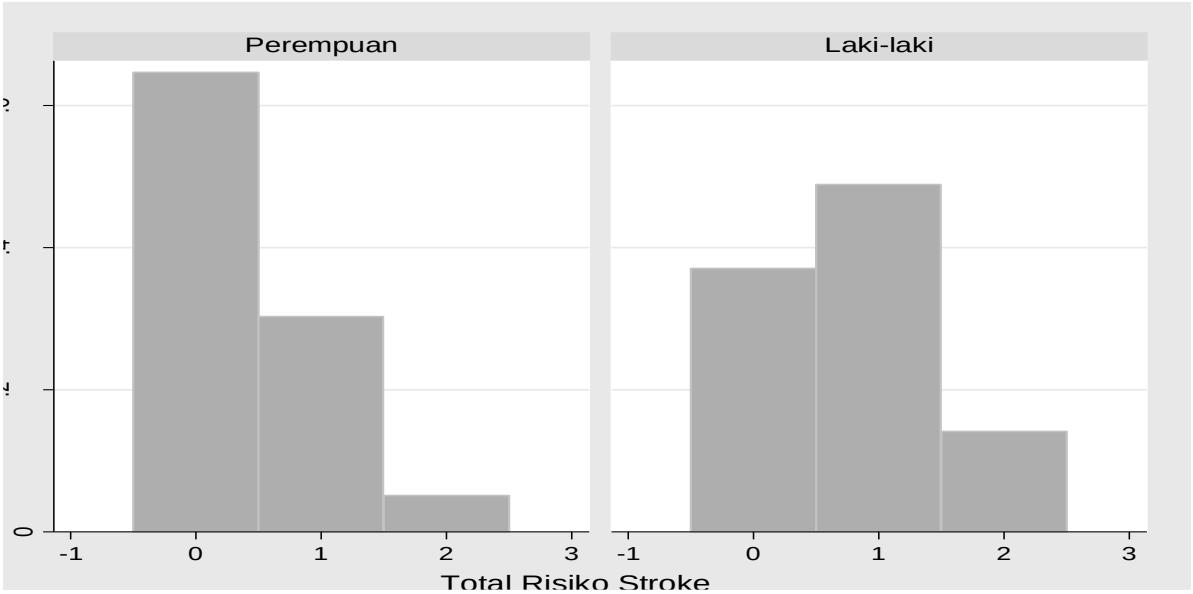
Histogram Graph 4 Distribution of Stroke Risk Groups by Ethnicity

Respondents who were consisted of several types of ethnic groups: Chinese, Manado, Timor, Betawi, Ambon, Flores, Javanese, Sundanese, Toraja, Nias, Batak and others. The average risk of stroke in these tribes is low, medium, and high risk factors, respectively, except for the Betawi tribe, where the presentation of the risk of stroke in the low category is smaller than the moderate risk. And two tribes have a relatively large percentage of high risk, namely the Nias and Sundanese.



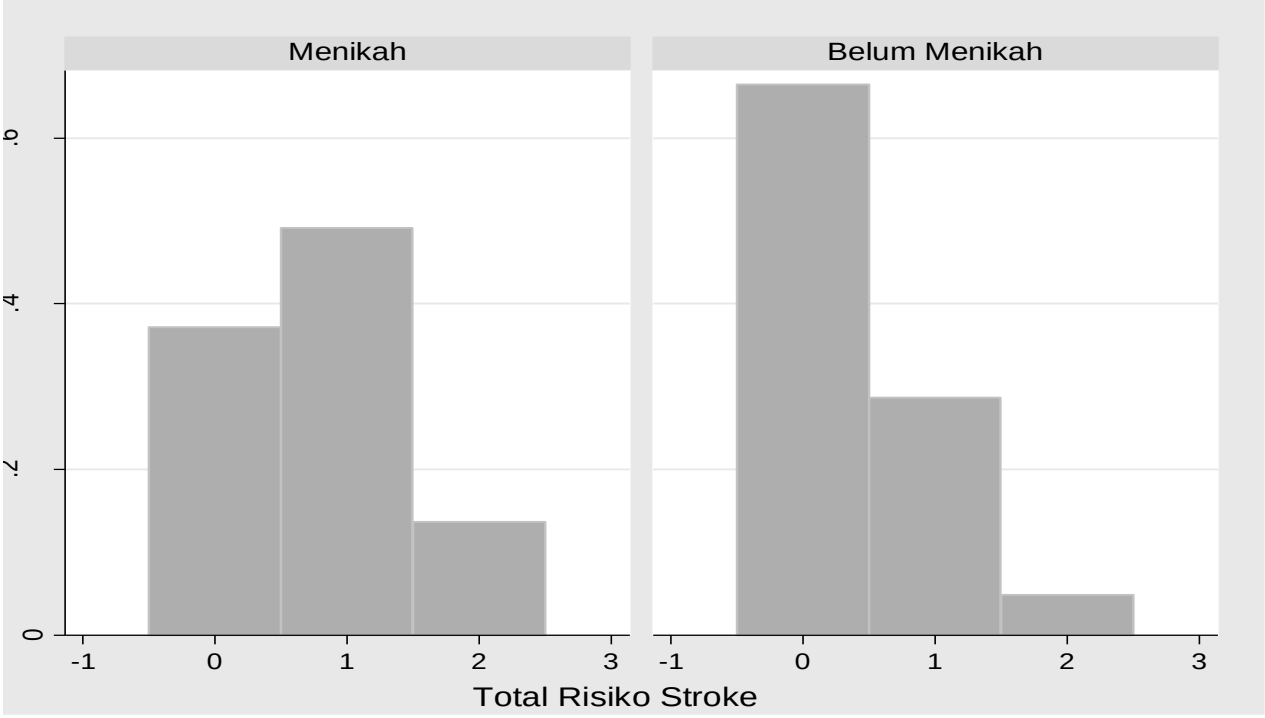
Histogram Graph 5 Distribution of Stroke Risk Factors Based on Income

Based on the histogram graph based on income, it can be seen that respondents with income have a higher risk than respondents with no income.



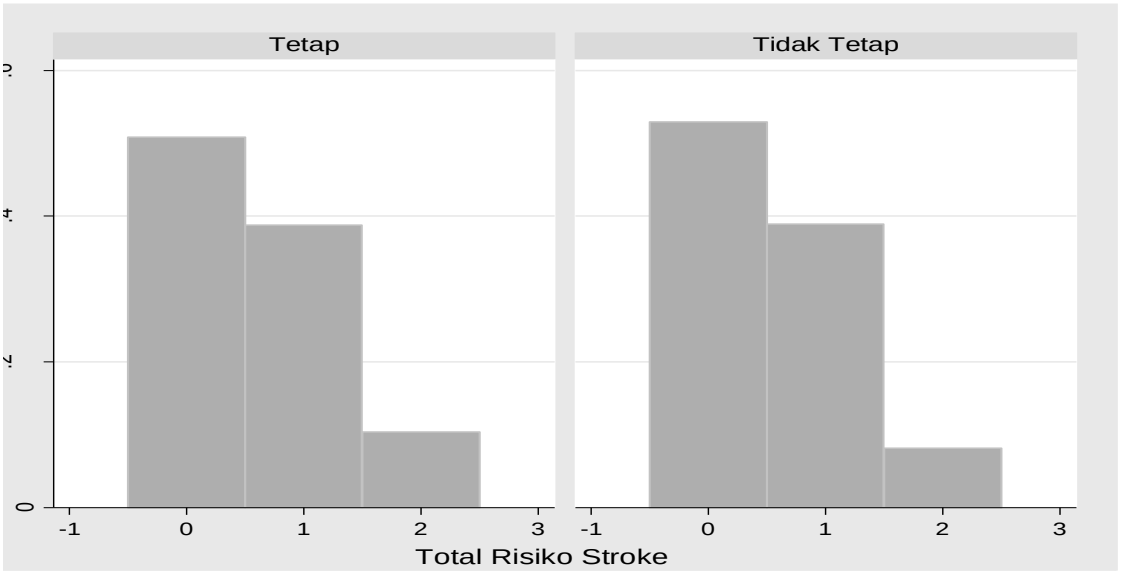
Histogram Graph 6 Distribution of Stroke Risk Factors by Gender

Based on the histogram graph by gender, it can be seen the fact that male respondents have a higher risk than female respondents.



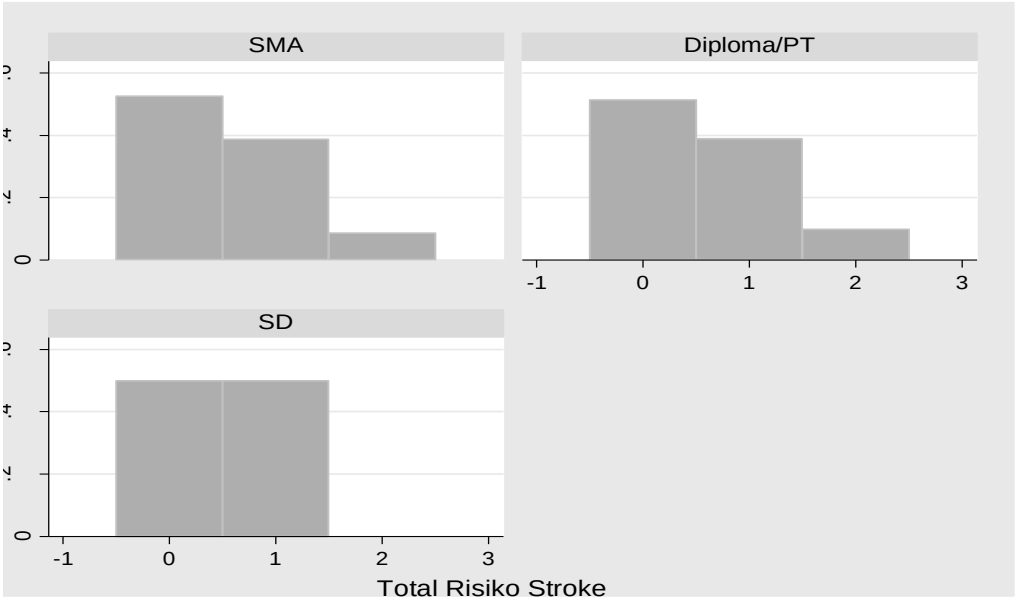
Histogram Graph 7 Distribution of Stroke Risk Factors Based on Marital Statusn

Based on the graph of the distribution of risk factors based on marital status, it shows that the highest risk is found in married respondents.



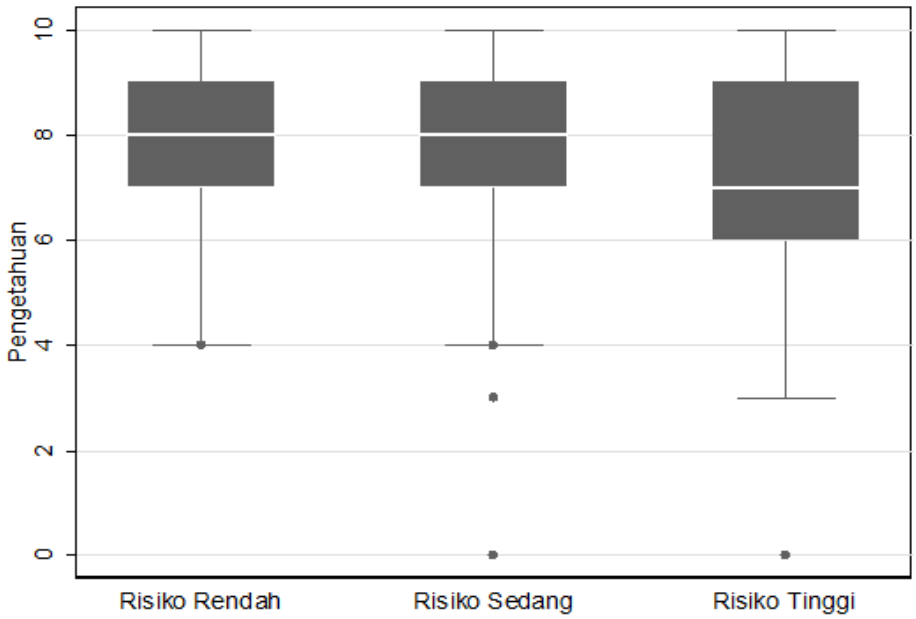
Histogram Graph 8 Distribution of Stroke Risk Factors Based on Domicile

Based on the histogram graph based on domicile, it can be seen that respondents who are domiciled in Lippo Karawaci have a higher risk than respondents who are not domiciled in Lippo Karawaci.



Histogram Graph 9 Distribution of Stroke Risk Factors Based on Last Education

The histogram graph based on the latest education shows that the higher the education level of the respondents, the tendency of stroke risk increases.



Box Plot Graph 10 Mean Values of Stroke Knowledge in the Stroke Risk Factor Group

From the Box plot graph, the average value of stroke knowledge in the stroke risk factor group shows that the average value of knowledge is higher in the low-risk and moderate-risk groups compared to the high-risk group.

Relationship of Sociodemographic Factors with Stroke Risk Category

Table 3 Results of Logistics Regression Test Analysis on Total Stroke Risk

No	Variable	P Value	Odds Ratio	95% CI
1	**Gender**	**0.0000**	3.1	2.03-4.75
2	Education	0.8170	0.953	0.63-1.42
3	**Age**	**0.0000**	1.05	1.04-1.07
4	Income	0.0000	1.39	1.16-1.66
5	**Marital status**	**0.0000**	3.384	2.2-5.14
6	Permanent Domicile	0.6790	0.92	0.609-1.38

The logistic test analysis results show that the gender variable has a significant relationship to the total risk of stroke with a p-value of 0.000 and an Odd Ratio of 3.1 (95% Confidence Interval 2.03-4.75). Men have a more significant risk factor for stroke than women.

DISCUSSION

From the results of the study, it was found that from several sociodemographic variables, only the sex factor had a significant relationship to the stroke risk factors of the community in Lippo Karawaci. This is indicated by p-value = 0.000 with OR = 3.1, which means that men have a three times higher risk than women. This is in line with data from the American Heart Association (2013) in Septinia (2016), where the number of deaths due to stroke is 60.1% for men and 50.9% for women. Septinia (2016) also cites an article from the Stroke Association (2016) stating that in the United Kingdom (UK), men have a 25% higher risk of having a stroke than women. Even though the European race, non-Hispanic Blacks and African-Americans indicate that women are more at risk of stroke, in other parts of the world, it is found that men are more at risk than women.

One of the results of research conducted in Indonesia at Dr. Hospital Karyadi Semarang in 2012 stated that the incidence of stroke in women was smaller than in men, where as many as 62 (68.9%) men and 28 (31.1%) women (Handayani, 2012). This supports the results of this study, where male respondents have a higher tendency than women. Based on the sociodemographic characteristics of the respondents who have a significant relationship to increase the risk of stroke, the respondents are male. Men are recognized as having a higher risk of stroke than women because of their specific behavior or lifestyle, such as smoking and drinking. However, from the results of this study, the risk factor for stroke, smoking, did not show a high presentation. The majority of respondents have a low risk of smoking risk factors. When viewed from the overall risk factors, it appears that most respondents have high cholesterol levels. On cholesterol examination, 153 (41.58%) people were found in the high-risk group; medium risk 125 (33.97%) people and low risk 90 (24.46%) people.

Previous smoking habits could cause this increase in cholesterol when associated with the characteristics of male respondents. Although most respondents have stated that they have stopped or are reducing their smoking habit, the accumulation of cigarette smoke that enters the body causes the walls of blood vessels to be incomplete or slippery so that plaques such as cholesterol will easily stick and, over time will, clog blood vessels. If this blockage occurs in the brain, the blood flow cannot nourish and carry oxygen to the nerve cells, so the nerve cells experience ischemia and even death of nerve cells which we call a stroke. When explored further, smoking habits affect the body's cholesterol level. Cholesterol is fat that circulates throughout the body in the form of particles we call lipoproteins. The smoking lifestyle lowers levels of good cholesterol, which is called *high-Density Lipoprotein (HDL)*in the blood, and vice versa will increase levels of bad cholesterol, which reaches Low-Density Lipoprotein (LDL). If the level of good cholesterol or HDL in the body is low, this will increase the risk of stroke (Stroke association, 2012).

History of frequent smoking habits in the past or as passive smokers who are exposed to cigarette smoke will disrupt the elasticity of blood vessels. This causes cholesterol very easily stick to the walls of blood vessels. What's more, it will get worse if someone has a pattern of bad food habits, such as eating foods that contain high cholesterol, lack of activity and exercise and fast food that causes high LDL levels and suppresses HDL levels (Web MD, 2012). Male respondents in this study were estimated to have increased cholesterol levels, which could be traced to several precipitating factors. Factors that are thought to trigger an increase in cholesterol levels are eating high-cholesterol foods. Usually, women are more likely to keep the food consumed to maintain weight and body aesthetics. So that women have more considerations in choosing and consuming which foods and how much food to maintain weight. For men, especially the head of the family as the breadwinner, a lot of time is spent outside the home. This can increase the potential to consume food or snacks served in restaurants or fast food restaurants that tend to contain high levels of fat or cholesterol. Foods that contain artificial fats increase levels of bad fats and reduce good fats (WebMD, 2012). This further increases the risk of stroke in men, who have been more at risk than women because women have the hormone estrogen, which functions in maintaining the elasticity of blood vessels.

CONCLUSION

The frequency distribution of risk factors for stroke in the Lippo Karawaci community in a row are cholesterol (41.58%), lack of physical activity or exercise (18.48%), high blood pressure (8.97%), smoking habits (6.52%), body mass index (5.16) %), Diabetes (3.26%), and Irregular pulse (0.82%). The distribution of stroke risk categories for the Lippo Karawaci community consisted of 191 people (51.9%) low risk, 143 (38.86%) moderate-risk people, and 34 (9.24%) high-risk people. There is a significant relationship between gender and the total risk of stroke, with a p-value of 0.000 and an Odd Ratio of 3.1 (95% Confidence Interval 2.03-4.75).

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DEMOGRAPHIC FACTORS AND THE RISK OF DEVELOPING STROKE: A CROSS-SECTIONAL STUDY

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BACKGROUND

Stroke incidence has been increasing worldwide. Indonesia is the country with the highest prevalence of stroke in Asia (Andarmoyo, 2012)

Stroke is the FIRST leading cause of death in Indonesia (www.cdc.gov)

An individual's lifestyle can be influenced by the surrounding environment (www.stroke.org)

Stroke risk factors: Blood pressure, atrial fibrillation, hypertension, diabetes, smoking, cholesterol, diabetes, physical activity, weight, stroke in the family, (National Stroke Association)

OBJECTIVES

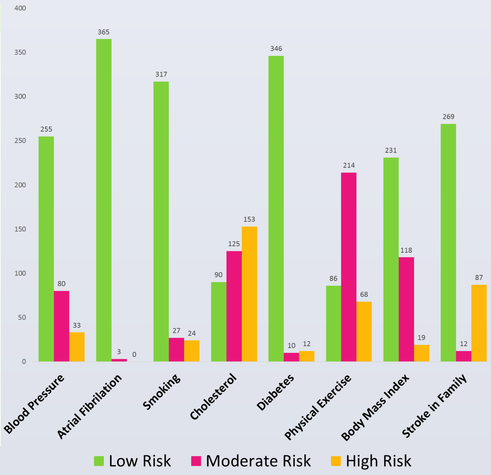
IDENTIFY THE DISTRIBUTION OF RISK FACTORS, STROKE RISK FACTOR CATEGORY AND THEIR CORRELATION WITH SOCIO-DEMOGRAPHIC INFORMATION.

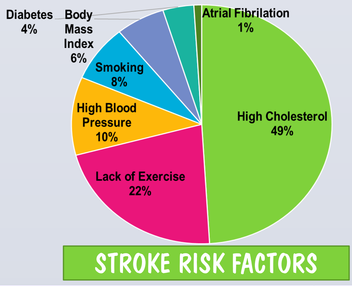
METHODS

CROSS-SECTIONAL DESCRIPTIVE QUANTITATIVE RESEARCH;
NON-RANDOM PROPORTIONAL SAMPLING OF 368 RESPONDENTS
SEPTEMBER 2016, LIPPO KARAWACI. TANGERANG, INDONESIA

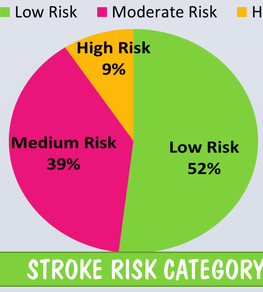
RESULTS

No	VARIABLES		FREQUENCY	PERCENTAGE
1	Gender	Man	170	46.2
		Woman	198	53.8
2	Married	Married	183	49.73
		Single	185	50.27
3	Level of Education	Elementary	2	0.5
		High School	173	47.0
		Secondary Level	193	52.5
4	Level of Income	None	101	27.45
		<3 million	53	14.4
		3-6 million	102	27.72
		>6 million	112	30.43
5	Age (Mean±SD)		32.84 ± 12.16 (18-64)	
6	Knowledge of Stroke (Mean ±SD)		7.88 ± 1.54 (0-10)	





STROKE RISK FACTORS



STROKE RISK CATEGORY

NO	VARIABLE	P VALUE	ODD RATIO	95% ci
1	SEX	0.0000	3.1	2.03-4.75
2	LEVEL OF EDUCATION	0.8170	0.953	0.63-1.42
3	AGE	0.0000	1.05	1.04-1.07
4	INCOME	0.0000	1.39	1.16-1.66
5	MARRIED	0.0000	3.384	2.2-5.14

There is significant correlation between sex and total stroke risk. Men have a higher tendency for stroke. According to National Center for Chronic Disease Prevention and Health Promotion and Division for Heart Disease and Stroke Prevention (2017). The incidence of stroke is higher in men due to smoking habits, over weights, diabetes, drink alcohol and less physical activity. The result of this research can hopefully serve as cautionary information especially on cholesterol to various parties including local government, health facilities, and health education.

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