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Research

Social Capital and Factors Related to Stroke Risk in Ponorogo Hospital: Structural Equation Model Application

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ABSTRACT

Background: Stroke is a non-communicable disease that ranks the second leading cause of death in the world. As many as 17 million patients who suffered a stroke, 6.5 million died from a stroke. This disease cannot be cured but can be controlled. The increasing number of cases of non-communicable diseases is related to risk factors. This study aimed to analyze the effect of social capital and factors related to stroke risk.

Subjects and Method: A case-control study was conducted at the Ponorogo District Hospital, East Java, from February to March 2020. A sample of 200 patients was taken through fixed disease sampling. The dependent variable was a stroke. The independent variables were social capital, hypertension, residence, workplace, stress, income, dietary habit, education, physical activity. The data was collected using a questionnaire. Data were analyzed using the Structural Equation Model run on Stata 13.

Results: The increase in stroke was directly affected by hypertension (b= 2.90; 95% CI= 2.09 to 3.71; p <0.001). The risk of stroke was affected indirectly by social capital, hypertension, workplace, stress, income, dietary habit, education, physical activity. Trust, bonding, bridging, and linking indirectly affected stroke risk on the contribution of social capital measurement.

Conclusion: Increased stroke is directly affected by hypertension. Stroke is indirectly affected by social capital, hypertension, workplace, stress, income, dietary habits, education, and physical activity. Trust, bonding, bridging, and linking indirectly affect stroke risk on the contribution of social capital measurement.

Keywords:stroke, social capital, risk factors

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BACKGROUND

Non-communicable diseases kill 41 million people every year or the equivalent of 71% of deaths globally. One of the four main types of non-communicable diseases, according to WHO, is cardiovascular disease, namely coronary heart disease and stroke. Stroke is a non-communicable disease that ranks the second leading cause of death in the world (WHO, 2018). As many as 17 million patients suffered a stroke, 6.5 million died from a stroke (WHO, 2017).

Global Burden of Disease states that death's standard based on age and sex has a wide reach in Asia. The highest mortality rates can be seen in Mongolia (222.6/ 100,000 people per year) and Indonesia (193.3/ 100,000 people per year), followed by Myanmar and North Korea (Venketasubramanian et al., 2017).

Stroke is in the first position as a disease that causes death in Indonesia. The prevalence of stroke in Indonesia in 2018 has increased from 7% to 10.9%, which has increased by 3.9% in the last 5 years (Research and Development Agency Ministry of Health, 2018). The prevalence of stroke cases in Indonesia based on a doctor's diagnosis is 10.9 per mile for those diagnosed with stroke symptoms. The highest cases occurred in East Kalimantan Province (14.7%), and the lowest was in Papua Province (4.1%), while East Java Province was 11.5% (Basic Health Research, 2018).

According to Mutiarasari (2019), an unhealthy lifestyle, such as foods high in fat and high in cholesterol, lack of physical activity and exercise, can increase the risk of having a stroke. Lifestyle is often the cause of diseases that attack productive age because young people often adopt unhealthy diets. In addition to consuming a lot of cholesterol, they consume excessive sugar, which will cause obesity, which results in the accumulation of fat in the body. Some of the most important risk factors are hypertension, diabetes mellitus, obesity, and heart disease. One of the efforts to reduce stroke incidence by early prevention in stroke patients is very important, both before and after an attack.

According to Palafox et al. (2017), several aspects of social capital are associated with better hypertension management in low-income countries where health systems are often weak. Given that hypertension affects millions of people in these countries, that moderate increase at all points along the treatment pathway can improve management for many people and prevent thousands of cardiovascular events each year.

Prevention is one of the most effective and efficient ways to reduce the incidence of stroke. In Indonesia, stroke control guidelines state that early detection of stroke risk factors plays a major role in controlling efforts and determining the prognosis for stroke in the next five years (Ministry of Health Stroke Control Guidelines, 2013).

The explanation above shows that the incidence of stroke in several regions of Indonesia has increased significantly from time to time. It is expected that social capital and stroke risk are needed to detect as early as possible in preventing stroke. This study aims to analyze social capital and the factors that affect stroke risk.

SUBJECTS AND METHOD

1. Study Design

This study was analytic observational with a case-control design. This study was conducted at the Ponorogo Regional Public Hospital, East Java, from February to March 2020.

2. Population dan Sample

The population in this study were stroke patients and non-stroke patients at the Ponorogo Regional Public Hospital. A sample of 200 patients was taken using the fixed disease sampling technique.

3. Study Variables

The dependent variable was a stroke. The independent variables were social capital, hypertension, residence, workplace index, stress, income, dietary habit, education, physical activity, trust, bonding, bridging, and linking.

4. OperationalDefinition of Variables

Stroke was a condition that occurs when the blood supply to the brain was interrupted or reduced due to blockage or rupture of blood vessels. The instrument used was a questionnaire. The data scale was continuous, but for analysis, the data was converted into a dichotomy, coded 0= no stroke 1= stroke.

Social Capital was the correlation between individuals and groups/communities. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= weak 1 = strong.

Hypertension was someone who had been declared hypertensive and was registered and reported to the health office, where the blood pressure exceeds the normal limit, systolic ≥140 mmHg, and diastolic ≤90 mmHg. The instrument used was a questionnaire using a doctor's diagnosis. The data scale was continuous, but for analysis, the data was converted into a dichotomy, coded 0= normal 1= high blood pressure.

The residence was the address where the respondent lives. The instrument used was a questionnaire. The data scale was continuous, but for analysis, the data was converted into a dichotomy, coded 0= rural 1= urban.

Workplace index was a good quality work related to a work atmosphere, good treatment, a sense of security, and a harmonious correlation. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= good 1 = bad.

Stress was a measurement of respondents' pressure or demands to adapt and adjust to life changes or life events experienced in the last 1 year before being sick. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= normal 1= experiencing stress.

Income was the amount of money received by the respondent per month. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= low 1= high.

The dietary habit was the habit of respondents before being sick in consuming food ingredients that trigger strokes, such as foods containing salt and fat. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= good 1= bad.

Education is the highest level of formal education that the respondent had completed based on its recognition. The instrument used was a questionnaire. The data scale was continuous, but for analysis, the data was converted into a dichotomy, coded 0= low 1= high.

Physical activity was the body's movement that used energy that was done daily before the respondent got sick. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= low 1= high.

Bonding was the correlation between individuals in reacting and interacting with others. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= weak 1= strong.

Bridging was people or other individuals who affected the individual, generally in input from outside the person, both from family and group. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= weak 1= strong.

Linking was an individual who could affect the group. The instrument used was a questionnaire. The data scale was continuous, but it was transformed into dichotomous, coded 0= weak 1= strong.

Trust was mutual trust in society. The instrument used was a questionnaire. The measurement scale was continuous, but it was transformed into dichotomous, coded 0= weak 1= strong.

5. Data Analysis

Univariate analysis was performed on each study variable. Categorical data were

described in the frequency distribution table. A continuous sample of data characteristics as described in the parameters n, mean, SD, minimum, and maximum.

The bivariate analysis in this study used the Chi-square test. This test was to determine the correlation between variables.

Multivariate analysis was to determine the effects of various variables studied using structural equation modeling using the application of stata 13.

6. Research Ethic

This study was conducted based on a study of research ethics, namely consent, anonymity, confidentiality, and ethical reviews. Research ethics approval was obtained from the health research ethics committee at Dr. Hardjono, Ponorogo, Indonesia, no: 3502021K112142020012000007/KEPK/-2020.

RESULTS

A. Sample Characteristics

Table 1 shows the sample characteristics (continuous data). Categorical data are described in Table 2.

Table 1. Sample Characteristics (continuous data)

Variable	N	Mean	Std. Dev	Min.	Max.
Age (years)	200	53.93	12.60	27	75
Workplace index	200	6.44	1.85	2	11
Income (rupiah)	200	1,215,500	694,999.9	500,000	3,000,000
Systole (mm / Hg)	200	127.5	14.23	100	200
Diastole (mm / Hg)	200	79.15	11.10	60	130
Stress	200	11.32	3.75	7	21
Physical activity	200	4,863.45	1,745.62	1,020	9,495
Dietary habit	200	9.79	4.17	3	22
Trust	200	8.93	2.97	3	12
Bonding	200	6.20	1.95	1	8
Bridging	200	5.86	2.03	1	8
Linking	200	4.55	1.63	1	6

B. Univariate analysis

Table 2 shows the univariate analysis data (dichotomous data) of 200 female subjects, as many as 101 people (50.5%). The majority of the study was 160 people aged ≥45 years (80.0%), with education level <senior high school as many as 143 people (71.5%). The majority of study subjects live in rural areas were 148 people (74.0%), good workplace index was 119 people (59.5%), and with an income <Regional Minimum Wage as many as 135 people (67.5%). The majority of study subjects did not have hypertension as many as 133 people (66.5%), did not experience stress as many as 128 people (64.0%), had a physical activity in the high category as many as 133 people (66.5%), and had a good diet as many as 156 people (78.0%).

C. The result of bivariate analysis

Table 3 shows the results of the Chi square test. The risk of stroke occured when education <senior high school (OR= 0.16; 95% CI= 0.04 to 0.47; p <0.001), poor workplace index (OR= 37.78; 95% CI= 12.28 to 151.18; p<0.001), income <Regional Minimum Wage (OR= 0.21; 95% CI= 0.06 to 0.54; p<0.001), hypertension (OR= 18.22; 95% CI= 7.65 to 45.2; p<0.001), stress (OR= 12.57; 95% CI= 5.49 to 29.89; p <0.001), low physical activity (OR= 0.15; 95% CI= 0.07 to 0.32; p<0.001), poor dietary habit(OR= 45.64; 95% CI= 16.39 to 132.74; p<0.001).

Table 2. Sample Characteristics (categorical data)

Variable	Criteria	N	%
Stroke	No	150	75.0
	Yes	50	25.0
Sex	Female	101	50.5
	Male	99	49.5
Age (years)	<45 years	40	20.0
	≥45 years	160	80.0
Education	< Senior High School	143	71.5
	≥ Senior High School	57	28.5
Residence	Rural	148	74.0
	Urban	52	26.0
Workplace index	Good	119	59.5
	Poor	81	40.5
Income	< Regional Minimum Wage	135	67.5
	≥ Regional Minimum Wage	65	22.5
Hypertension	No	133	66.5
	Yes	67	33.5
Stress	Normal	128	64.0
	Stress	72	36.0
Physical activity	High	133	66.5
	Low	67	33.5
Dietary habit	Good	156	78.0
	Poor	44	22.0

Table 3. Bivariate analysis of social capital and factors related to stroke risk

Independent variables	Did not stroke		Stroke		Total		OR	p
	N	%	N	%	N	%		
Education								
<Senior High School	97	67.83	46	32.17	143	100	0.16	<0.001
≥ Senior High School	53	92.98	4	7.02	57	100		
Residence								
Rural	111	75.00	37	25.00	148	100	1	1.000
Urban	39	75.00	13	25.00	52	100		
Workplace index								
Good	115	96.64	4	3.36	119	100	37.78	<0.001
Poor	35	43.21	46	56.79	81	100		
Income								
< Regional Minimum Wage	91	67.41	44	32.59	135	100	0.21	<0.001
≥ Regional Minimum Wage	59	90.77	6	9.23	65	100		
Hypertension								
No	133	92.48	10	7.52	133	100	18.22	<0.001
Yes	27	40.30	40	59.70	67	100		
Stress								
Normal	117	91.41	11	8.59	128	100	12.57	<0.001
Stressed	33	45.83	39	54.17	72	100		
Physical activity								
High	116	87.22	17	12.78	133	100	0.15	<0.001
Low	34	50.75	33	49.25	67	100		
Dietary habit								
Good	142	91.03	14	8.97	156	100	45.64	<0.001
Poor	8	18.18	36	81.82	44	100		

D.The result of multilevel analysis

Multivariate analysis was used to see the effects of more than one independent variable. The method used was the Structural Equation Model using Stata 13.

Figure 1 shows the direct and indirect effects of variables on stroke risk.

Table 4 shows that there was a direct effect on hypertension on stroke risk.

Association between hypertension and stroke risk

A person with hypertension had a logodd (likelihood) of having a stroke 2.90 units higher than someone without hypertension (b= 2.90; 95% CI= 2.09 to 3.71; p= <0.001).

The correlation between stress and hypertension

A person with stress had a logodd (likelihood) of having hypertension 1.04 units higher than someone who did not experience stress (b= 1.04; 95% CI= 0.24 to 1.85; p= 0.011).

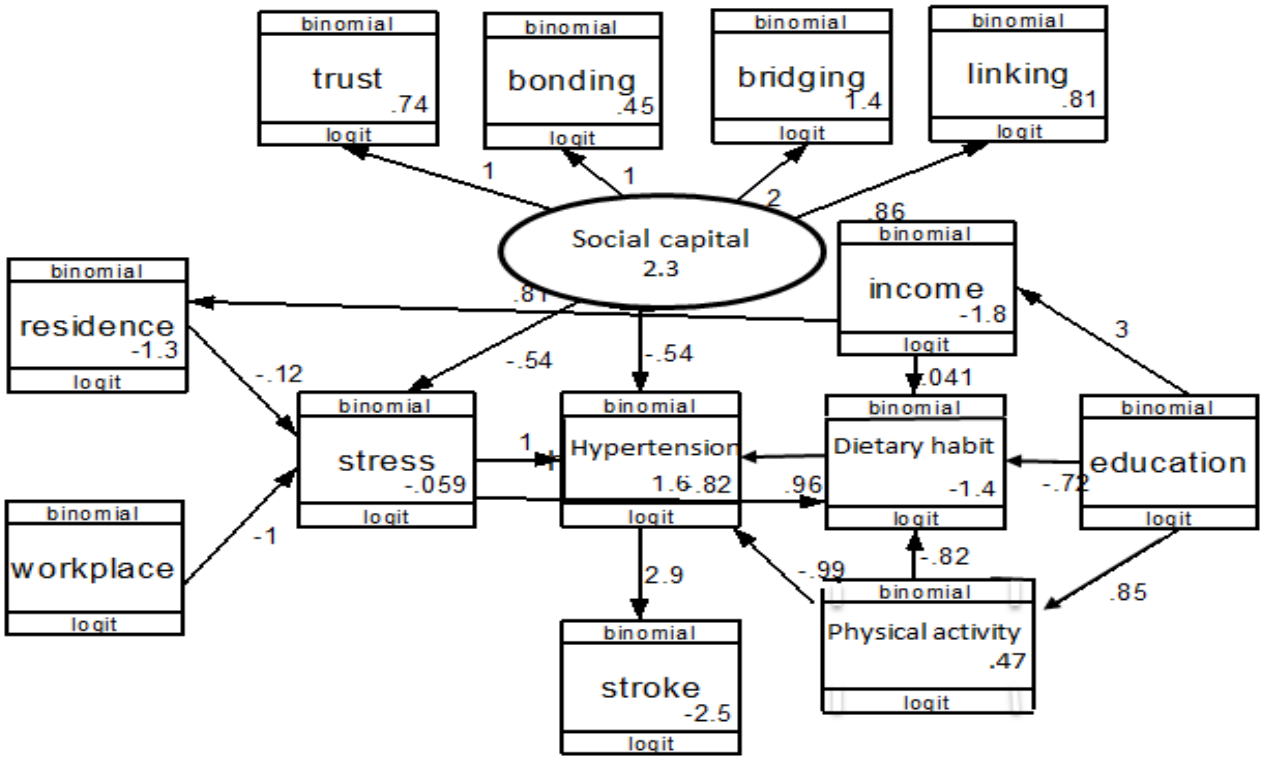

Figure 1. Structural Model of Path Analysis

The correlation between dietary habit and hypertension

A person with a poor diet had a logodd (probability) of having hypertension 0.95 units higher than someone with a good diet (b= 0.95; 95% CI= 0.03 to 1.87; p= 0.041).

The correlation between physical activity and hypertension

A person with high physical activity had a logodd (probability) of having hypertension -0.99 units lower than someone with low physical activity (b= -0.99; 95% CI=-1.75 to -0.22; p= 0.011).

The correlation between social capital and hypertension

A person with strong social capital had a logodd (probability) of having hypertension -0.54 units lower than someone with weak social capital (b= -0.54; CI= 95% -0.99 to -0.08; p= 0.020).

The correlation between the workplace index and stress

A person thatworked in a good workplace had a logodd (likelihood) of experiencing stress -1.04 units lower than someone

working in a good workplace (b = -1.04; 95% CI= -1.76 to -0.32; p= 0.005).

The correlation between social capital and stress

Someone with strong social capital had a logodd (probability) to experience stress -0.54 units lower than someone with weak social capital (b= -0.54; CI= 95% -0.97 to -0.11; p= 0.011).

The correlation between stress and dietary habit

A person with stress had a logodd (likelihood) of having a bad diet 1.60 units higher than someone without stress (b= 1.60; 95% CI= 0.85 to 2.35; p <0.001).

Table 4. The analysis results of social capital pathways and factors associated with stroke risk: Application of Structural Equation Model

Dependent variable		Independent variable	Path Coefficient (b)	95% CI		p
				Lower Limit	Upper Limit	
Direct Effect						
Stroke	←	Hypertension (yes)	2.90	2.09	3.71	<0.001
Indirect Effect						
Hypertension	←	Stress (yes)	1.04	0.24	1.85	0.011
	←	Dietary habit (poor)	0.95	0.03	1.87	0.041
	←	Physical activity (high)	-0.99	-1.75	-0.22	0.011
	←	Social capital (strong)	-0.54	-0.97	-0.08	0.020
Stress	←	Residence (urban)	-0.12	-0.88	0.64	0.754
	←	Workplace index (good)	-1.04	-1.76	-0.32	0.005
	←	Social capital (strong)	-0.54	-0.97	-0.11	0.014
Dietary habit (poor)	←	Stress (yes)	1.60	0.85	2.35	<0.001
	←	Education (≥Senior High School)	-0.71	-1.83	0.40	0.209
	←	Physical activity (low)	-0.81	-1.56	-0.07	0.031
	←	Income (≥Regional Minimum Wage)	0.04	-0.97	1.05	0.936
Physical activity	←	Education (≥Senior High School)	0.85	0.13	1.57	0.020
Income (≥Regional Minimum Wage)	←	Education (≥Senior High School)	2.97	2.20	3.75	<0.001
Residence	←	Income (≥Regional Minimum Wage)	0.80	0.15	1.45	0.016
Social capital	←	Bonding	1	0.04	0.85	0.031
Social capital	←	Bridging	2.03	0.12	3.93	0.037
Social capital	←	Linking	0.85	0.30	1.40	0.002
Social capital	←	Trust	1.01	0.33	1.66	0.003
N Observation= 200						
Log Likelihood= -1178.94						

The correlation between physical activity and dietary habit

A person with low physical activity had a logodd (likelihood) of experiencing a bad diet -0.81 unit higher than someone with high physical activity (b= -0.81; 95% CI=-1.56 to -0.07; p= 0.031).

The correlation between education and physical activity

A person with education level ≥Senior High School education had a logodd (likelihood) of experiencing high physical activity 0.85 units higher than someone with an educa-

tion level<Senior High School (b= 0.85; 95% CI= 0.13 to 1.57; p= 0.020).

The correlation between education and income

A person with education level ≥Senior High School had a logodd (probability) to get an income of ≥Regional Minimum Wage 2.97 units higher than someone with an education level<Senior High School (b = 2.97; 95% CI 2.20 to 3.75; p<0.001).

The correlation between income and residence

A person with an income ≥Regional Minimum Wage had a logodd (probability) to experience living in a city 0.80 units higher than someone with an income <Regional Minimum Wage (b= 0.80; 95% CI= 0.15 to 1.45; p= 0.016).

Bonding contribution in measuring social capital

Strong bonding gave a logodd (probability) contribution to strong social capital by 1 unit higher than weak bonding (b= 1; 95% CI= 0.04 to 0.85; p= 0.031).

Bridging contribution in measuring social capital

Strong bridging gave logodd (probability) contribution to strong social capital by 2.03 units higher than weak bridging (b = 2.03; 95% CI= 0.12 to 3.93; p = 0.037).

Linking contribution to measuring social capital

Strong linking gave logodd (probability) contribution to strong social capital by 0.85 units higher than weak linking (b= 0.85; 95% CI= 0.30 to 1.40; p= 0.002).

Trust contribution in measuring social capital

Strong trusts gave logodd (probability) of contribution to strong social capital by 1.01 units higher than weak trusts (b= 1.01; 95% CI= 0.33 to 1.66; p= 0.003).

DISCUSSION

1. The effect of hypertension on stroke

The results of the analysis in this study showed that hypertension had a direct effect on stroke risk. There was a positive correlation between hypertension and stroke risk, and this effect was statistically significant.

Hypertension is the important factor and a major risk factor in the incidence of ischemic and hemorrhagic strokes. Besides, high blood pressure is also associated with an increased risk of early stroke recurrence (Appleton et al., 2016).

According to a study conducted by Monica, Widyaningsih, and Sulaeman (2019), there was a significant effect between hypertension and stroke risk (p <0.001). A person who had hypertension was 6.6 times more likely to have a stroke risk at a young age than someone who did not have hypertension.

2. The effect of education on stroke

The results of the analysis in this study showed that education had an indirect effect on stroke risk. There was a positive correlation between education and stroke risk, and this effect was statistically significant.

A person who has a higher education level can prevent early symptoms of a stroke (p= 0.006) (Wardhani and Martini, 2014).

3. Effect of residence on stroke

The analysis results in this study showed that the place of residence had an indirect effect on stroke risk. There was a negative correlation between residence and stroke risk, and this effect was not statistically significant.

AHD (2014) did not support the statement that stroke frequently occurred in urban areas. This occurred because there had been a shift in behavior patterns

(lifestyle). This study is consistent with a study conducted by Susilawati and Nurhayati (2018), which stated that there was no correlation between residence and stroke (p= 0.400).

4. The effect of workplace index on stroke

The analysis results in this study showed that the workplace index had an indirect effect on stroke risk. There was a negative correlation between workplace index and stroke risk and this effect was statistically significant.

A safe and healthy workplace will have a positive impact on the people in it. A safe workplace atmosphere, good treatment, and harmonious correlation would increase productivity because it decreased the number of days lost, increased the efficiency and quality of more committed workers. This was stated by Rivai (2009) (Narianggono et al., 2014).

5. The effect of income on stroke

The results of the analysis in this study showed that income had an indirect effect on stroke risk. There was a positive correlation between income and stroke risk, and this effect was statistically significant.

The income of the head of the family had a positive effect on good health status. The number of family members affected good health status. If there are more than three household members, the better the health condition is from each level of income of the family (Puluhulawa, 2019).

6. Effect of stress on stroke

The results of the analysis in this study showed that stress had an indirect effect on stroke risk. There was a positive correlation between stress and stroke risk, and this effect was statistically significant.

This study is supported by a study conducted by Udani (2013), which stated that stress affected the incidence of a stroke. Someone who experienced stress had 3.08 times stroke risk than someone who did not experience stress (OR= 3.08; p= 0.008).

Other studies also suggest that there was an effect of stress on stroke risk. A person who experienced stress had 3.78 times the risk of having a stroke compared to someone who did not experience stress (OR = 3.78; 95% CI = 0.01-0.11; p <0.001) Marbun, Juanita and Ariani (2016).

7. The effect of physical activity on stroke

The analysis results in this study showed that physical activity had a direct effect on stroke risk. There was a negative correlation between physical activity and stroke risk and this effect was statistically significant.

According to WHO (2018), physical activity is defined as anybody movement produced by skeletal muscles that require energy, including activities carried out while working, playing, doing household chores, traveling, and doing recreational activities.

Other studies also suggested that there was an effect between low physical activity and the risk of stroke. Someone who did low physical activity had a stroke risk of 11.3 times compared to someone who did the moderate physical activity (OR= 11.3; 95% CI= 2.7-47.6; p <0.001) (Yulendasari R, 2017).

8. The effect of diet on stroke

The results of the analysis in this study showed that diet had an indirect effect on stroke risk. There was a positive correlation between diet and stroke risk and this effect was statistically significant.

The DASH (Dietary Approaches to Stop Hypertension) diet can reduce and control blood pressure by reducing salt intake, saturated fat and cholesterol (Utami, 2015).

This study is in line with a study conducted by Susilawati and Nurhayati (2018), which showed a significant effect of dietary factors on stroke. Someone who ate a diet high in salt, sugar and fat had a risk of having a stroke 1.03 times than someone who did not eat a diet high in salt, sugar and fat (OR = 1.03; p <0.001).

9. The effect of social capital on stroke

The analysis results in this study showed that social capital had an indirect effect on stroke risk. There was a negative correlation between social capital and stroke risk and this effect was statistically significant.

According to Maulidia and Hidayati (2019), health was affected by social capital. Religious leaders, community leaders, village communities and health workers maintain cooperation in routine program activities and the establishment of village health institutions. The community and health workers strongly maintain social capital. This is reflected in the community's willingness to participate without coercion, the existence of a trusting relationship between health workers and the community, intensive cooperation through direct presence and communication via gadgets. Also, openness and willingness to exchange information through village deliberations, supported by the value of caring for each other through information activities such as sick visits.

10. The effect of bonding on social capital

The results of the analysis in this study showed that bonding had a direct effect on social capital. There was a positive correlation between bonding and social capital and this effect was statistically significant.

Bonding refers to the social resources that a person can reach through a close network or group with similar demographic, social characteristics (Moore and Kawachi, 2017). Social capital as social bonding has the basic characteristics of both groups and group members in ideas, relationships and more inward-oriented attention. Every individual of the same ethnicity, religion, origin, or identity has a high sense of moral obligation to help one another, help each other, and even give and receive (Abdullah, 2013).

11. The effect of bridging on social capital

The results of the analysis in this study showed that bridging had a direct effect on social capital. There was a positive correlation between bridging and social capital and this effect was statistically significant.

Bridging is a more diverse, out-oriented network consisting of individuals with different social features and attributes. Due to its nature, dimensions (bridging) will facilitate access to external resources and information sharing (Gittell and Videl, 1998; Putnam, 2000). It refers to resources that can be accessed from networks or groups with different characteristics (Moore and Kawachi, 2017).

12. The effect of linking on social capital

The results of the analysis in this study showed that linking had a direct effect on social capital. There was a positive correlation between linking with social capital and this effect was statistically significant.

Linking norms of respect and correlation of trust in the status system connect individuals and groups in a hierarchy of power and authority (Moore and Kawachi, 2017).

According to Abdullah (2013), social capital as social linking effectively builds relationships and networks in groups with different social strata such as the people and government, superiors and subordinates, workers and employers.

13. The effect of trust on social capital

The results of the analysis in this study showed that trust had a direct effect on social capital. There was a positive correlation between trust and social capital and this effect was statistically significant.

Several social capital elements include trust, reciprocal values and norms, institutions and associations, reciprocal relationships, and networks (Abdullah, 2013).

According to Maulidia and Hidayati (2019), trust (mutual trust), mutual help, and obeyed norms are assets in overcoming health problems. The existence of trust value can be seen from the community and health workers' involvement in all activities of the integrated healthcare center, Integrated Non-Communicable Disease Development Post, village deliberations, and home visits.

AUTHOR CONTRIBUTION

LailatulRohmah was the main researcher who played a role in collecting study data, formulating articles, and processing data. Setyo Sri Rahardjo played a role in the background formulation. Bhisma Murti helped to formulate a framework for learning and discussion.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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