

Correlative Factors of Stroke Prevention Efforts Among the Senior High School Students in Makassar City

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ABSTRACT

The aim of this study to determine correlation factors toward stroke prevention efforts among senior high school students in Makassar city. The study type was an observational study with cross sectional study design approach. The population for this study were all senior high school students. The sample sizes were 318 students by using simple random sampling method. The data was collected by using questionnaires. The data was analyzed by using SPSS program version 16. The bivariate analysis was performed to determine relationship of dependent and independent variables in form of cross tabulation with chi square statistic test. The result showed 224 respondents (70.4%) has been done on stroke prevention efforts and only 94 students (29.6%) are not doing any stroke prevention efforts. The statistical data found a correlation between the parent education level ($p=0.000$), knowledge ($p=0.000$), hereditary ($p=0.025$), perceived benefit ($p=0.024$), perceived barriers ($p=0.001$), parental support ($p=0.006$), peer support ($p=0.000$), and media support ($p=0.000$) with stroke prevention efforts among senior high school students in Makassar city

CCS Concepts

- **Social and professional topics** → **User characteristics**

Keywords

Stroke; prevention; students; teenagers.

1. INTRODUCTION

Non-communicable disease (NCDs) are main causes of morbidity and mortality worldwide [1]. There were 40 million of mortalities each year due to NCDs [2]. NCDs consists of heart diseases, cancer, stroke, chronic obstructive pulmonary and asthma [3,4]. NCDs was reported higher in high-income countries compared to

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ICHSM 2018, June 8–10, 2018, Tsukuba, Japan

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ACM ISBN 978-1-4503-6435-5/18/06...\$15.00

DOI: <https://doi.org/10.1145/3242789.3242830>

low and middle-income countries [5]. The main causes of NCDs

were lifestyle changes included unhealthy dietary habits, alcohol consumption habit, smoking habit and lack of physical activities [6,7].

There are two types of stroke included ischemic stroke and hemorrhagic stroke. In world, 7.2 million deaths cause by ischemic stroke disease. The strokes are common among teenagers and young adults. Based on Indonesian National Survey (Risikesdas), stroke prevalence increased with age in 2013. The highest stroke cases were diagnosed on patients aged 75 years old and above (43.1%) and lowest stroke cases had recorded in patients aged 15 years and 24 years old (0.2%). Meanwhile, stroke prevalence was recorded in male (7.1%) than female (6.8%). The stroke prevalence in urban areas (8.2%) was higher than in rural areas (5.7%).

Based on South Sulawesi Provincial Health Office in 2013 found 823 stroke cases and 2,061 new stroke cases [8]. Meanwhile, stroke was among main causes mortality in Makassar with 96 mortality cases. There is a tendency of increasing stroke patients number in Makassar city. The school play important roles in diseases prevention by promote healthy culture among students. Besides, schools are good channel on providing information and skill in improving health status.

The aim of this study to determine correlation factors with stroke prevention efforts among the senior high school students in Makassar city.

2. METHODOLOGY

2.1 Study Type

The study type was an observational study with cross sectional study design.

2.2 Location and Time

This study was conducted from January to February 2016 at six senior high schools in Makassar city.

2.3 Population and Sample

The population for this study was all students of class X on six selected senior high schools. The sample sizes were 318 students by using simple random sampling method.

2.4 Data Collection

The primary data was obtained through questionnaire and secondary data was collected in form of school profiles and number of student's data.

2.5 Data Analysis

The data was analyzed by using SPSS program version 16. The univariate analysis was done on variables by represented on the distribution. The bivariate analysis was performed to determine relationship of dependent and independent variables in form of cross tabulation with chi square statistic test.

3. RESULT AND DISCUSSION

3.1 Univariate Analysis

Table 1 showed the distribution of respondents based on parent education level, most respondents were respondents who with parent had high education level as much as 293 respondents (92.1%), while 25 respondents (7.9%) with parents had low education level. Besides, 260 respondents (81.2%) had knowledge and 58 respondents (18.2%) had no knowledge on stroke prevention efforts. Meanwhile, 211 respondents (66.4%) were not hereditary and 107 respondents (33.6%) were hereditary. There were 173 respondents (54.4%) had positive perceived and 145 respondents (45.6%) had negative perceived. In additions, 217 respondents (68.3%) had positive barriers perceived and 101 respondents (31.7%) had negative barriers perceived. Most of respondents had positive parental support, 176 respondents (55.3%) had parental support and 142 respondents (44.7%) had no parental support. There were 213 respondents (67.0%) had peer support and 178 respondents (56.0%) had media support. Besides, 224 respondents (70.4%) had stroke prevention efforts and only 94 respondents had no stroke prevention efforts.

Table 1. Characteristic respondents based on study variables among senior high school students in Makassar city.

Variable	n	%
Parent education level		
Low	25	7.9
High	293	92.1
Knowledge		
No	58	18.2
Yes	260	81.8
Hereditary		
No	211	66.4
Yes	107	33.6
Benefits perceived		
Negative	145	45.6
Positive	173	54.4
Barriers perceived		
Negative	101	31.7
Positive	217	68.3
Parental support		
No	142	44.7
Yes	176	55.3
Peer support		
No	105	33.0
Yes	213	67.0
Media support		
No	140	44.0
Yes	178	56.0
Stroke prevention efforts		
No	94	29.6
Yes	224	70.4

Source: Primary data, 2016

3.2 Bivariate Analysis

Based on Table 2, from 94 respondents who did not have any stroke prevention efforts, 21 respondents (64.0%) with parent had low education level and 73 respondents (22.9%) with parents had high education level. Meanwhile, 4 respondents (16.0%) with parents had low educational and 220 respondents (75.1%) with parents had high education level for students with stroke prevention efforts. There was a significant between parent education level and stroke prevention efforts among senior high school students in Makassar city.

Table 2. Relationship between parent education level and stroke prevention efforts among senior high school students in Makassar city.

Parent education level	Stroke prevention efforts						P-value
	Yes		No		Total		
	n	%	n	%	n	%	
Low	21	64.0	4	16.0	25	100.0	0.000
High	73	22.9	220	75.1	293	100.0	
Total	94	29.6	224	70.4	318	100.0	

Source: Primary data, 2016

Based on Table 3, 50 respondents (86.2 %) had low knowledge and 44 respondents (16.2%) had knowledge for respondents without stroke prevention efforts. There were 8 respondents (13.4%) had no knowledge and 216 respondents (83.1 %) had knowledge for respondents without stroke prevention efforts. There was a significant relationship between knowledge and stroke prevention efforts among the senior high school students in Makassar city.

Table 3. Relationship between knowledge and stroke prevention efforts among the senior high school students in Makassar city.

Knowledge	Stroke prevention efforts						P-value
	Yes		No		Total		
	n	%	n	%	n	%	
No	50	86.2	8	13.4	58	100.0	0.000
Yes	44	16.9	216	83.1	260	100.0	
Total	94	29.6	224	70.4	318	100.0	

Source: Primary data, 2016

Based on Table 4, there were 71 respondents (33.6%) who not hereditary and 23 respondents (21.5 %) were hereditary for students without stroke prevention efforts. Meanwhile, 140 respondents (66.4 %) were not hereditary and 84 respondents (78.5 %) who were hereditary. Based on chi square result found a significant relationship between hereditary and stroke prevention efforts.

Table 4. Relationship between hereditary and stroke prevention efforts among the senior high school students in Makassar city.

Hereditary	Stroke prevention efforts						P-value
	Yes		No		Total		
	n	%	n	%	n	%	
No	71	33.6	140	66.4	211	100.0	0.025
Yes	23	21.5	84	78.5	107	100.0	
Total	94	29.6	224	70.4	318	100.0	

Source: Primary data, 2016

Based on Table 5, 52 respondents (35.9 %) had negative benefits perceived and 42 respondents (24.3 %) had positive benefits perceived for respondents without stroke prevention efforts. There were 93 respondents (64.1%) had negative benefits perceived and 131 respondents (75.7%) had positive benefits perceived for respondents with stroke prevention efforts. There was a significant relationship between benefits perceived and stroke prevention efforts.

Table 5. Relationship between benefit perceived and obesity prevention efforts among the senior high school students in Makassar city.

Benefits perceived	Stroke prevention efforts						p-value
	Yes		No		Total		
	n	%	n	%	n	%	
Negative	52	35.9	93	64.1	145	100.0	0.024
Positive	42	24.3	131	75.7	173	100.0	
Total	94	29.6	224	70.4	318	100.0	

Source: Primary data, 2016

Based on Table 6, there were 43 respondents (43.2%) had positive barriers perceived and 51 respondents (8.3%) had negative barrier perceived for respondents without stroke prevention efforts. Besides, 58 respondents (57.4 %) had positive barriers perceived and 166 respondents (76.5%) had negative barriers perceived for respondents with stroke prevention efforts. Based on chi square, there was a significant relationship between barrier perceived and stroke prevention efforts among the senior high school students in Makassar city.

Table 6. Relationship between barriers perceived and stroke prevention efforts among the senior high school students in Makassar city.

Barriers perceived	Stroke prevention efforts						p-value
	Yes		No		Total		
	n	%	n	%	n	%	
Positive	43	43.2	58	57.4	101	100.0	0.001
Negative	51	8.3	166	76.5	217	100.0	
Total	94	29.6	224	70.4	318	100.0	

Source: Primary data, 2016

Based on Table 7, 53 respondents (37.3 %) found received less parent support and 41 respondents (23.3 %) had received parent support for respondents without stroke prevention efforts. There were 89 respondents (62.7 %) had less parent support and 135 respondents (76.7%) had received parent support for no stroke prevention efforts groups. Based on chi-square, there was a significant relationship between parent support and stroke prevention efforts among senior school students in Makassar city.

Table 7. Relationship between parent support and stroke prevention efforts among the senior high school students in Makassar city.

Parent support	Stroke prevention efforts						p-value
	Yes		No		Total		
	n	%	n	%	n	%	
No	53	37.3	89	62.7	142	100.0	0.006
Yes	41	23.3	135	76.7	176	100.0	
Total	94	29.6	224	70.4	318	100.0	

Source: Primary data, 2016

Based on Table 8, 69 respondents (65.7 %) had no peer support and 25 respondents (11.7%) had received peer support for respondents without stroke prevention efforts. Meanwhile, 36 respondents (34.3 %) had no peer support and 188 respondents (88.3%) had peer support. There was a significant relationship between peer support and stroke prevention efforts among senior high school students in Makassar city.

Table 8. Relationship between peer support and obesity prevention efforts among the senior high school students in Makassar city.

Peer support	Stroke prevention efforts						p-value
	Yes		No		Total		
	n	%	n	%	n	%	
No	69	65.7	36	34.3	105	100.0	0.000
Yes	25	11.7	188	88.3	213	100.0	
Total	94	29.6	224	70.4	318	100.0	

Source: Primary data, 2016

Based on Table 9, there were 90 respondents (64.3%) had no media support and 4 respondents (2.2%) had media support for respondents without stroke prevention efforts. In additions, 50 respondents (35.7%) had no media support and 174 respondents (97.8%) had media support for respondents with stroke prevention efforts. Based on chi square, there was a significant relationship between media support and stroke prevention efforts among the senior high school students in Makassar city.

Table 9. Relationship between media support and stroke prevention efforts among the senior high school students in Makassar city.

Media support	Stroke prevention efforts						p-value
	Yes		No		Total		
	n	%	n	%	n	%	
No	90	64.3	50	35.7	140	100.0	0.000
Yes	4	2.2	174	97.8	178	100.0	
Total	94	29.6	224	70.4	318	100.0	

Source: Primary data, 2016

3.3 Overall Discussion

The result found there was a relationship between parent education level and stroke prevention efforts among senior high school students in Makassar city. The parents play important role to create positive behavior in teenagers especially in education. In additions, parents had influenced teenager behavior in preventing diseases. High parental education level affected teenagers in disease prevention [9].

In this study, the knowledge which related to stroke among teenager was sufficient for prevention efforts. The lack of information had obtained by teenagers was contributed toward knowledge level on prevention efforts. The factors such as information resources, socio-cultural, economic, environment, experience and age toward person's knowledge level [10]. In Tambak Aji village, a study found a correlation knowledge level in hypertension complications with stroke prevention behavior [11].

The genetic or hereditary factors also increased risk in stroke disease. The study showed correlation between hereditary and stroke prevention efforts. The main causes of stroke are stress, drug abuse, alcohol consumption, hereditary and unhealthy lifestyle [12]. Nowadays, young adults also have risk in suffering

stroke due to unhealthy lifestyle. Most students had positive benefits perceived toward stroke prevention efforts. Higher benefit perceived lead on good practice in disease prevention [13]. The result showed relationship between benefits and barriers perceived toward stroke prevention efforts among senior high school students in Makassar city. The barriers perceived is perception of obstacles facing from action or health behavior. The respondents had barriers perceived helped in perform good prevention efforts in stroke disease. A study found correlation between obstacles perceived with hypertension prevention in elder [14].

Meanwhile, parent support affected teenagers in making efforts to prevent the stroke. The respondents who received positive parent support tend to be sufficient in stroke prevention efforts than respondents with negative parent support. The parents had influenced their children on doing positive things included disease prevention efforts so that children had healthy habit and avoid disease risk factors. Besides, this study also found peer support was associated with stroke prevention efforts among senior high school student in Makassar city. The peer influences could be negative and positive. The negative influences lead on social and personality problems among teenagers. The cause lead to stroke among teenagers is smoking habit in early age. A study showed relationship between peer influences and smoking habit in male students of Slogohimo senior high school in Wonogiri [14].

There was relationship between media support and stroke prevention efforts among senior high school students in Makassar city. Most information about stroke and prevention was gained by through internet. The good health promotion in media affected health behavior among high school students in Jakarta [15].

4. CONCLUSION

In conclusions, there was significant relationship between parent education level, heredity, benefit perceived, barriers perceived, knowledge, parental support, peer support and media support with stroke prevention among the senior high school students in Makassar city.

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