Community based health promotion program for stroke in Malaysia

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Abstract: This paper analyzed the causative factors of stroke in Malaysia and the high-risk population of stroke, and discussed the effect of education intervention on community high-risk population of stroke. A questionnaire was used before and after the intervention of education for stroke high-risk residents in Malaysian communities. And after education, the rate of knowledge about stroke was increased and the risk factors were decreased. So we can conclude that health promotion in community with education as the main form is an effective measure to reduce the incidence of stroke.

1. Research background

Cerebral stroke is also known as "stroke" and "cerebral vascular accident" (CVA). It is an acute cerebrovascular disease, a group of brain tissue injuries caused by sudden ruptures of blood vessels in the brain or by blockages that prevent blood from flowing into the brain. According to the survey, stroke has become the first cause of death in the world population and the first cause of human disability. And it is characterized by high incidence, high mortality and high disability rate. In 2008,statistics compiled by the Health Informatics Centre Planning and Development Division of the Ministry of Health, Malaysia, showed that there were 24,056 new stroke cases and that the CVD mortality rate was 15.01 per 100,000 people. CVD is the fifth most common cause of mortality after ischaemic heart disease; CVD accounts for 7% of the total disease burden in persons aged 30-59 years and 12% of the total disease burden in persons aged older than 60.

Due to the lack of effective treatment methods, prevention is thought to be the best measure at present, among which hypertension is an important controllable risk factor for stroke. Therefore, hypotension treatment is particularly important for the prevention of stroke onset and recurrence. Education should be strengthened to popularize risk factors and premonitory symptoms of stroke, so as to truly prevent stroke.

2. Determinants of stroke in Malaysia

In Malaysia, nutritional environments, knowledge and income gaps can be considered determinants of stroke.In this city, the environmental factors associated with nutrition are the high incidence of high-calorie foods, obesity and high-calorie foods. Fast food and traditional foods are all linked to stroke because of their high fat and calories. Traditional Malaysian dishes contain high amounts of pure butter and sugar cane, which could be a cause of stroke. Fast-food restaurants serve a wide range of foods, including sandwiches, chicken grills, pizza and hamburgers. Consumers believe most fast foods contain some trans fats, which can lead to high cholesterol and heart disease. In addition, fast food contains lots of chemical additives and often lacks accurate nutrition labels. According to government statistics, more than two-thirds of adults in Malaysia do not participate in any sport, and the percentage of overweight adults rose from 16.6 percent in 1996 to 29.1 percent in 2015. The proportion of obese people, meanwhile, rose from 4.4% in 1996 to 14% in 2015. In addition, obesity is closely related to hypertension, cardiovascular disease and abnormal cerebral blood vessels, which may explain the occurrence of middle arterial hypertension in obesity. For unhealthy foods, Malaysian food is cheap and can be eaten anywhere. Night markets and cellphone vendors offer fast food, fat and calorie excess, while 24-hour restaurants offer Indian cakes and

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high-fat ginger tea.

In Malaysia, the knowledge gap of stroke is positively correlated with the gap in income level. Higher income or higher socio-economic levels are associated with risk factors, physical signs and symptom knowledge of stroke (Amal, Paramesarvathy & Tee et al., 2011). As a result, it affects people's awareness of seeking information about stroke and emergency treatment. However, the Gini coefficient of Malaysia is 0.46 in 2018, indicating that there is a large income gap in Malaysia, which is positively correlated with the stroke knowledge gap. In addition to income gap, a large proportion of people with multiple risk factors for stroke and a relatively low level of knowledge (Norris, Anuar & Matzen, 2014) also increase their susceptibility to stroke due to the lack of a wide classification of related factors of stroke.

3. What factors are likely to lead to stroke?

Risk factors associated with stroke are commonly known as risk factors. Long-term and in-depth studies on the risk factors of stroke have been conducted at home and abroad, and the risk factors of stroke are classified into the following three categories.

The first one is about the unchangeable factors, including age, sex, race or ethnicity, family history. The risk of stroke increases with age, and men are more likely to have a stroke than women, also blacks are more likely than whites, as well as blood relatives in the family are more likely to have a stroke while family members are more likely to have a stroke.

The risk factors that cannot be changed are irreversible, but they increase the rate of stroke. Age and gender can be thought of as two major unchangeable risks of stroke in Malaysia. Age has discovered that the incidence of stroke doubled in both men and women in the decade after the age of 55 (Broderick, Phillips & Fallon et al., 1992). Not only age but also gender is directly related to the rate of stroke. Stroke rates are higher, with men having 1.25 times as many strokes as women. Stroke patient in Malaysia has an average age of between 54.5 and 62.6 (Cheah, Hor and Zariah, 2016). This age group is considered to be the productive age since the retirement age of 60 in Malaysia (Miah, Azhar & Rahman et al., 2012). It is therefore imperative that that health care professional and the ministry of health of Malaysia take the necessary action to focus on the prevention and treatment of this age group of working age.

The second one is about the modifiable factors, including high blood pressure, diabetes, heart disease, hyperlipidemia, smoking and asymptomatic carotid stenosis, where hypertension is considered the leading risk factor for stroke. These factors can increase the likelihood of stroke, but can be reduced to varying degrees after controlled or rational treatment.

High blood pressure reported in Malaysia accounts for 40 per cent of all strokes among lifestyle risk factors. Hypertension increases the incidence of stroke (Miah, Azhar & Rahman et al., 2012), and when hypertension is combined with lifestyle risk factors, the incidence of stroke will further increase. A diet high in fat and cholesterol can lead to excess calories and elevated blood lipids. Over time, blood vessel walls, blood components, and blood flow velocity can be changed, leading to blood clots and high blood pressure. In addition, excessive drinking and smoking can damage red blood cells, which in turn affects their adhesion and increases the process of thrombosis (Suresh & John, 2016).

The third one is about the factors expected to change including obesity, less physical activity, a high-fat diet, alcohol abuse and high blood clotting. These factors, when controlled or treated, are expected to reduce the likelihood of stroke, but the current study lacks concrete evidence.

People with one or more of these risk factors are referred to as susceptible. The latest studies of domestic market have found that the hemodynamic indexes of about 30 ~ 35 percent of the susceptible population were significantly abnormal, which showed that the integral value of cerebrovascular function was less than 75 points. These individuals are at increased risk of stroke, and they are at high risk of stroke.

4. Risk-reduction measures

4.1 Primary prevention-get healthy education

We can conduct education about healthy in the community so that everyone can understand the basic knowledge of cerebrovascular disease and avoid the occurrence of some risk factors such as hypertension, hyperlipidemia and diabetes. For example, the communities make lectures on promoting daily exercise to community residents, because regular physical activity has clear benefits for reducing the risk of premature death and cardiovascular disease. The protective effect of physical activity is mediated in part by its role in reducing blood pressure, controlling cardiovascular disease and controlling weight, among other risk factors. People at high risk of stroke can choose activities such as walking, jogging, swimming or senile gateball according to their own conditions and hobbies. Exercise intensity control in the conscious heart with a slight degree of sweat.

4.2 Secondary prevention-control of stroke risk factors.

Once you have these risk factors for cerebrovascular disease, you should control them. For example, active treatment and control of blood pressure in hypertensive patients is one of the effective measures to reduce stroke. For patients with blood pressure greater than 130mmHg, they are mainly treated with lifestyle changes, such as weight control, physical labor, moderate drinking, salt intake, fruit and vegetable intake and low-fat products. For patients with blood pressure greater than 140mmHg, combined with heart and renal insufficiency, drugs should be selected to control blood pressure according to individual conditions of patients.

4.3 Tertiary prevention-systematic screening and treatment of high-risk groups.

Tertiary prevention is mainly aimed at high-risk groups, among which hypertension and diabetes are the most dangerous, both of which can lead to arteriosclerosis. Reasonable treatment and psychological counseling for these two groups are the core contents of tertiary prevention.

5. Objects and methods of case analysis

As one of the most important functions of community health service of the health education is an important means of health knowledge popularization and compensation for patients, as a result, people at high risk for stroke, stroke prevalence increased general lack of knowledge, the characteristics of health service centers in a planned way systematically carried out health education for stroke disease, received good results, summarized as follows.

5.1. Materials and methods

5.1.1 General information

A community in Malaysia was selected as the pilot, relevant data of community residents (refer to the three risk factors above) were collected and analyzed, and residents at high risk of stroke were extracted, and healthy education was implemented. Specifically, there were 308 stroke high-risk residents aged 40 or older, including 158 males (51.29%), 150 females (48.71%), 3 40-49 years old (1.89%), 37 50-59 years old (12.01%), 83 60-69 years old (26.95%), 115 70-79 years old (36.42%), and 70 over 80 years old (22.73%).

5.1.2 The two methods

Health education method for community health service center medical personnel to the community residents' committees or the center adopts seminar residents, family interview, symposium and interviews, publicity column, such as form, residents are concerned about disease control and prevention of stroke, the four seasons health, physical exercise and health propaganda knowledge, in order to promote them to change their bad health behavior, form good habits. The focus of the mission is to pay attention to two types of people. One is to patients who have some

precursors of stroke, which may show different degrees of depression and emotional instability and other psychological problems. Another kind of person is the practicality of the course. They should get the support and cooperation from their family members, so that they can urge them to do physical passive and active exercise.

The survey method USES the unified questionnaire to collect information, and the investigator is the medical staff of the community health service center, and takes related knowledge of stroke as the option of health education to conduct a questionnaire survey among community residents. The results were evaluated using the "stroke related knowledge education effect evaluation table". A total of 308 questionnaires was issued and 308 valid questionnaires were returned, with an effective rate of recovery of 100%.

Statistical analysis was performed using spss11.0 software package for statistical analysis. The measurement data were expressed as mean + / - standard deviation, t test and X2 test were used for comparison of counting data.

5.2 Results

5.2.1 The needs of residents

The residents' demand for knowledge of disease-related health education is shown in table 1. Among them, functional training method was the most concerned, followed by relevant knowledge of prevention, and treatment method received relatively low attention.

Table 1 needs of residents for knowledge of education related health [n(%)]

Content of needs	Prevention knowledge	Drugs instruction	Diet conditioning	Functional training method	Treatment methods
n=308	236(76.6%)	192(62.3%)	159(51.6%)	277(90.2%)	133(43.4%)

5.2.2 Change of residents' awareness rate

Residents after health education knowledge rate changes associated with disease, according to the results after the health education, community stroke patients and their families, the awareness of knowledge about disease increased significantly, and with the increase of health education time, aware of knowledge about residents' more and more high, the difference was statistically significant compared with before health education ($P < 0.01$, see table 2).

Table 2 Change of residents' awareness rate of disease before and after education (%)

Items	Before Education	After 6 months	After 12 months
Adult daily salt intake standard	11. 4	57. 3	83. 5
Proper medication	37. 0	64. 4	80. 1
Functional exercise	8. 5	60. 1	84. 3
Common symptoms of stroke	23. 4	50. 4	78. 6

6. Discussion

As a new system of knowledge service and effective prevention and treatment means, healthy education has become an indispensable health resource in medicine. Socialization, community, unit and family are the general goals of the work of healthy education. Practice has proved that the community-oriented implementation of healthy education is the key to the realization of healthy education. The fundamental purpose of community health education is to improve the level of health knowledge of community residents, change the lifestyle that is not conducive to disease rehabilitation, achieve the unity of knowledge, credit and travel, and finally control the morbidity, disability and mortality of chronic diseases. By carrying out health intervention for stroke diseases in a planned and targeted way, we believe it is an effective measure to prevent and treat such chronic diseases. The methods, forms, means and effectiveness evaluation of healthy education and

health education are further enriched and improved in the community.

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