

The Health Status and Its Influence Factors of Stroke Patients in Community of Zhengzhou, 2010

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[Abstract] Objective Learning about the health status and analyzing its influence factors of stroke patients in communities, to improve the health level of the patients. **Methods** Choosing 177 cases of stroke patients as the study objects from communities of Zhongyuan, Erqi, Jinshui, in Zhengzhou. Using the brief questionnaire of SF-36 to investigate the health status of the patients. **Results** Health status scores of the 177 cases of patients are lower than normal people. Each dimension score of the forty to sixty years old patients is lower than normal people, except the social function dimension. Every dimension score of the male stroke patients that sixty or above sixty years old is lower significantly than the normal people. This is the same to female patients except body pain, energy, social function and mental health. The factors that influencing the health status of stroke patients are working situation, medical insurance, types of diagnose, frequency of incidence and duration of illness. **Conclusions** There is varying degrees of decline of the health status of stroke patients in communities comparing with normal people. And its influence factors are various. So the suggest is that the health of stroke patients should be taken seriously and carrying out corresponding rehabilitation nursing service to improve the patients' health level.

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Stroke, namely apoplexy in other words, is a common intractable disease that seriously harms human health and life safety, with high incidence, mortality, morbidity, and recurrence rate, etc. According to statistics, the number of stroke happening every year in China is up to 2 million and now the existing stroke patients are 7 million, in which 4.5 million patients have different degrees of labor losing and self-care obstacle, the rate of disability is up to 75%^[1]. Its high rate of disability seriously affect of patients' physical and mental health and the quality of life. In view of this, in order to learning about the health status of stroke patients in communities of Zhengzhou, we did a follow-up survey to 177 cases of stroke patients in Zhengzhou from July to September, 2010, which help to understand the patient's health status and its influencing factors, and to provide the corresponding help and guidance and to improve their health level and quality of life.

1 Objects and methods

1.1 Objects

According to the level of economic development of Zhengzhou and the actual situation in this study, we adopt the convenient sampling method to select stroke patients in convalescence from communities of Zhongyuan, Erqi, Jinshui in Zhengzhou as the objects of the survey. There are inclusion criteria as follows: ① up to the diagnostic criteria of stroke that established in Fourth National Cerebrovascular

Disease Conference in 1995, and confirmed by CT or MRI; ② patients with clear consciousness, no intelligence obstacle and aphasia, can understand and voluntarily complete all evaluations.

1.2 Methods

1.2.1 Contents

General information of patients, health status and daily living conditions were included in the contents.

1.2.2 Instruments

The brief health status questionnaire SF-36 was used to investigate the stroke patients in community. Liu Chaojie and other researchers' researches^[2] shows that, SF-36 has a good reliability, validity and applicability in the population of our country, and it can be used to evaluate the health status of different populations. SF-36 roundly learning about the health status of respondents from eight dimensions that are physical function (PF), response of physical (RP), body pain (BP), general health (GH), vitality (VT), social function (SF), response of emotion (RE) and mental health (MH). There are 36 questions in all; each question is endowed scores from 0 to 6 according to alternative answers, the higher the scores, the better the health status. In order to be convenient, the eight dimensions of SF-36 were father classified into physical comment summary (PCS) and physical comment summary (PCS)^[3] at the time of analyzing the influence factors of affecting health status. And the

physical comment summary summed from PF, BP and GH, the health comment summary summed from VT, SF, RE, and MH.

The Activity of Daily Living Scale (ADL) was used to evaluate the activity situation of daily living. This scale is consist of ten items, including eating, transferring between bed and chair, embellishing, toileting, bathing, walking on flat, up and down stairs, dressing, bowel and bladder controlling. According to patients whether need help or not and the degree of help, it divides each entry into 0, 5, 10, 15 four ranks, the total score is 100 points. Patients that Score 100 points are divided into completely independent, 75 to 95 points are divided into mild dependence, 50 to 70 points are moderate dependence, 25 to 45 points are divided into severe dependence, and 0 to 20 points are divided into completely dependent.

1.2.3 Methods of data collection

The investigation team is made up of researchers, undergraduate students of nursing department and community nursing staff. All members sent questionnaires in home after a uniform training, explained the precautions of filling in, and recovered the questionnaires that completed on the spot. The survey distributes questionnaires 200 copies in total, and taking back effective questionnaires 177 copies, the effective reclaimed rate is 88.5%.

1.2.4 Statistical Methods

Adopting SPSS13.0 statistical software to process the data. Using mean \pm standard deviation to describe the measurement data. Describing constituent ratio by percentage. Comparing the differences between stroke patients and the normal by t test. Analyzing the influence factors of patients' health status by using multielement regression analysis.

2 Conclusion

2.1 The general information of the patients

In the 177 cases of stroke patients, there are 109 male cases (61.1%), 68 female cases (38.4%); aging from 36 to 87 (67.3 ± 10.8), one case of below 40 years (0.6%), 45 cases of 40 to 60 years old (25.5%), 131 cases of above 60 (73.9%); 21 cases of following primary education (19.9%), 23 cases of primary education (13.0%), 51 cases of high school or technical school education (28.8%), 23 cases of junior school education (13.3%); 158 cases of married (89.3%), one case of divorced (0.6%), 18 cases of widowed; 148 cases of retirement or rest for sick

(83.6%), 18 cases of no fixed profession (10.2%), 6 cases of workers (3.4%), 5 cases of resign (2.8%). There are 47 cases whose income is less than 1000 Yuan (26.6%), 92 cases of 1000 to 1999 Yuan (52.0%), 16 cases of 2000 to 2999 Yuan (9.0%), 22 cases of above 3000 Yuan (12.4%); 12 cases of self-pay (6.8%), 140 cases of having medical insurance (79.1%), and 25 cases else (14.2%), 19 cases of cerebral hemorrhage (10.7%), 92 cases of cerebral infarction (52.0%), 42 cases of cerebral embolism (23.7%), and 24 cases else (13.6%); 108 cases of stroke once (61.0%), 41 cases of twice (23.2%), 12 cases of third (6.8%), 16 cases of more times (9.0%); 51 cases of suffering for illness less than one year (28.8%), 16 cases of suffering for one to two years (9.0%), 14 cases of suffering for two to three years (7.9%), 96 cases of suffering for more than three years (54.4%).

2.2 The health status of patients

Thinking the proximity of geographical and the comparability of data, we adopt the reference value of people's health status that educed by Shi Ping and others people^[4] that surveyed 930 cases of general population by using SF- 36 in the city of Wuxi. And we use T-test to compare the different ages of stroke patients with the corresponding standard norm in Wuxi to learn about the health status of stroke patients. The resultss are shown in Table 1.

It can be seen from table 1: stroke patients scored lower than normal people in each dimension. Each dimension score of the forty to sixty years old patients is lower than normal people except social function dimension; every score is lower for male patients above sixty years old, as same as female except body pain, energy, social function and mental health.

2.3 Patients' activity of daily living

63 cases (35.6%) scored 100 in ADL of all 177 patients, displayed complete independence in daily life, the rest 144 cases (64.4%) scored below 95 in ADL, displayed incomplete independence, part or all need help in daily life.

2.4 Influence factors of patients' health status

Take the patients' general information such as gender, age, marital status as the independent variables, and the total score of patient's health as the dependent variables. Analyze the influence factors of patients' health status by using multielement regression analysis. The results are shown in Table 2.

Table 1 the health status of stroke patients in different ages

Age	SF-36	Male ($\bar{x} \pm s$)		t value	P value	Female ($\bar{x} \pm s$)		t value	P value
		Patients	Norm			Patients	Norm		
40~60	PF	51.5±35.8	86.1±10.2	-7.3	0.00 ²⁾	51.4±34.8	81.9±13.9	-6.9	0.00 ²⁾
	RP	35.8±42.1	84.7±30.1	-11.4	0.00 ²⁾	34.5±42.9	81.0±33.5	-8.6	0.00 ²⁾
	BP	71.4±20.7	85.5±12.9	-6.9	0.00 ²⁾	67.9±20.4	77.0±16.7	-3.6	0.002)
	GH	51.8±14.4	61.9±20.5	-7.0	0.00 ²⁾	50.7±12.5	64.6±20.5	-8.9	0.002)
	VT	59.3±23.2	64.9±17.9	-2.4	0.02 ¹⁾	59.1±23.9	68.9±15.6	-3.3	0.002)
	SF	74.8±33.1	81.4±20.9	-2.0	0.05	76.7±32.2	79.2±20.2	-0.7	0.54
	RE	51.3±45.5	83.3±30.9	-7.0	0.00 ²⁾	50.0±44.8	83.3±33.1	-5.9	0.002)
	MH	65.1±20.9	70.0±16.7	-2.3	0.02 ¹⁾	65.0±18.9	72.5±16.0	-3.2	0.002)
	PF	49.3±35.5	83.7±10.5	-8.1	0.00 ²⁾	47.3±34.0	79.1±15.4	-6.6	0.002)
	RP	37.9±41.7	82.4±29.9	-8.7	0.00 ²⁾	39.5±44.6	59.0±46.1	-3.1	0.002)
≥60	BP	69.9±22.4	82.5±17.9	-4.7	0.00 ²⁾	66.3±20.9	69.4±21.8	-1.1	0.29
	GH	41.1±11.8	67.8±16.4	-18.8	0.00 ²⁾	40.3±10.1	62.8±18.2	-16.0	0.002)
	VT	58.4±23.1	75.2±16.4	-6.0	0.00 ²⁾	60.1±24.6	66.8±15.7	-2.0	0.06
	SF	74.5±33.1	83.3±21.1	-2.2	0.03 ¹⁾	76.4±34.0	78.5±21.6	-0.4	0.66
	RE	54.6±45.4	83.3±33.1	-5.3	0.00 ²⁾	55.1±44.7	77.3±35.6	-3.6	0.002)
	MH	65.4±22.2	78.8±16.9	-5.0	0.002)	66.2±18.4	70.8±17.6	-1.8	0.08

Note: PF: physical function, RP: response of physical, BP: body pain, GH: general health, VT: vitality, SF: social function, RE: response of emotion, MH: mental health; 1) $P < 0.05$, 2) $P < 0.01$

Table 2 Multielement regression analysis of the total scores of patients' health status

Items	Influence factors	Standard regression coefficient	t value	P value
Scores of health status	Constant term		1.424	0.169
	Current work situation (retired or in sick)	-0.783	-2.314	0.031 ¹⁾
	Medical insurance (yes)	0.572	2.334	0.030 ¹⁾
	Diagnosis of type (cerebral infarction)	0.965	2.414	0.025 ¹⁾
	Diagnosis of type (cerebral embolism)	0.972	2.591	0.017 ¹⁾
	Times of sick	-0.494	-2.475	0.022 ¹⁾
	Constant term		1.371	0.184
	Concomitant diseases(no) regularly rehabilitation therapy(no)	0.487	2.723	0.012 ¹⁾
		-0.485	-2.793	0.011 ¹⁾
	Health status	Current work situation (retired or in sick)	-0.854	-2.901
Medical insurance (yes)		0.488	2.226	0.037 ¹⁾
Years of suffering		-0.465	-2.769	0.011 ¹⁾
Scores of ADL		0.699	3.694	0.001 ²⁾
Constant term			0.729	0.475
Status of mental health	Diagnosis of type (cerebral infarction)	1.109	2.877	0.008 ²⁾
	Diagnosis of type (cerebral embolism)	1.037	2.786	0.010 ¹⁾

Note:1) $P < 0.05$, 2) $P < 0.01$

3 Discussions

As our population ages, the morbidity of stroke has also increased, and the mortality of stroke decreased. With the advances in medical technology,

but the disabled survivors has increased year by year. Physical disability and dysfunction caused by stroke severely limit patient's participation in work and daily activities, and bring larger impact to their physical and

mental health. Studies^[5] have shown that health status of stroke patients was significantly lower than the normal population at the same age, particularly in physiological function and mental health, which is similar to the results of this study. Through investigating the 177 cases of stroke patients in communities, the results of the study show that there are slightly differences of stroke patients in different age, sex health status, but the dimensions of their health status scores are lower than the normal population in general. Each dimension score of the forty to sixty years old patients is lower than normal people except social function dimension; and compared with the normal at the same age, every score is lower for male patients above sixty years old; this is the same to female patients except body pain, energy, social function and mental health. The results suggest that the health status of stroke patients that 40 to 60 years old is worse, which may relate to the characteristics of this age groups. People of 40 to 60 years old are in middle age, and have reached the stage of full maturity. On the one hand, they have the sound and perfect physical function; on the other hand, their body has well-adapted to environment. So they can complete variety of role tasks and they are the mainstays of the family and society. If there is a stroke, it not only can decrease the patient's physical and mental health, but also can bring a great influence to the family and society. Men's health conditions were significantly lower than the normal population of crowd aged 60 and over, and women scores is lower in physical pain, energy, social functioning and mental health, but there is no statistical significant, which suggests that the influence of stroke is greater on the health status of male patients. This may relate to the different social roles that both undertook. In China's traditional cultural values, man takes charge of external matters and woman takes charge of the internal. Compared with women, men bear greater pressures of family and social, and thus the impact of stroke is relatively large.

The results of multielement regression analysis reveal that many factors impacted the health status of stroke patients, including current work situation, medical assurance, types of disease, times of sick, whether merging other diseases or not, ect. Among them, the current work situation (retired or rest for sick) was negatively correlated with the physical health status and the overall health of patients, namely the physical health status and the overall health of patients of retired or rest for sick are worse than the patients that still working. This may relate to the age and severity of the disease of patients. Patients that retired or rest for sick is elder or couldn't continue to engage in heavy work because of disease, while patients that still working haven't reached retirement

age, and could continue to work currently, which indicates that their physical condition is better. Whether having medical insurance or no has a significant effect on overall health and physical health, the status is better of patients with insurance. Researches^[6] shows that the medical costs of stroke is growing fastest in all chronic diseases, in China, the medical expenses of cerebrovascular disease are as much as \$ 25 billion each year, the huge financial burden restrains some patients to receive continuous treatment and rehabilitative care. Compared with self-paid patients, having medical insurance makes the economic burden lighter, the patients could accept more health care services, and their health status will be relatively good. Types of disease significantly affect the overall health and mental health of patients, which might because the severity of the symptoms that different types of diseases exists certain differences. In addition, the times of sick, whether merging other disease, years of suffering, and scores of ADL also have a significant effect on overall health and physical health of patients, patients with more times in sick, suffering longer, having concomitant diseases and scored high in ADL are in worse status.

After all, we find that the health status of stroke patients have different degrees of decline compared with the normal at the same age through investigating the 177 cases of patients in communities. And current work situation, medical insurance, types of disease, the times of sick, etc, have different degrees of impact on the health status of patients. So, suggest communities should pay attention to the health of stroke patients, take rehabilitation care and appropriate measures to improve the patients' health and quality of life, according to their health status and its influence factors.

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