

Health outcome of stroke patients in Hong Kong

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Abstract Stroke is a major cause of mortality and disability in Hong Kong. Two thirds of the patients survived their strokes, but many had residual physical and speech disabilities. The COOP/WONCA Charts in Chinese were used to assess the functional status of 84 Chinese stroke survivors who were living in the community and were followed up in general practice. The majority of these patients had some functional impairment: 80 per cent reported moderate to severe limitations in their physical ability, 40 per cent often had emotional problems, 40 per cent had limitations in activities of daily living, and 30 per cent had moderate to severe impairment of social function. We found that walking abnormality and speech abnormality were significantly associated with poorer functions. The functional outcome reported subjectively by the patients in our study was much worse than the results of objective assessments in other local studies. The COOP/WONCA Charts proved to be suitable for measuring the functional status of stroke patients.

Keywords Chinese; COOP/WONCA Charts; Functional status; Outcome; Stroke.

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Introduction

Cerebrovascular accident is a major cause of disability and death in Hong Kong, as a result of the ageing of the population. The average life expectancy is 81 for women and 75 for men.¹ The ageing and the increased affluence of the population are associated with a rise in atherosclerotic diseases. Over 95 per cent of the population in Hong Kong are Chinese who are more prone to stroke than to coronary heart diseases, as in the Japanese.²

Stroke is the third leading cause of death in Hong Kong.¹ In 1992 the death rate due to stroke was 52.8 per 100,000. This is an incomplete indicator of the extent of the problem, since only about one third of the patients with cerebrovascular accidents died of the stroke; two thirds of them survive with variable degrees of disability.^{3,4} This means that while there were 3069 stroke deaths in Hong Kong in 1991, there were 6138 stroke survivors in that year.¹

Many stroke survivors have irreversible disabilities that can cause a lot of problems for the patients themselves, their families and society. The need for institutionalization is a commonly used indicator, but it is inadequate as it only measures the worst outcomes. Over 80 per cent of stroke survivors return to live at home,^{3,4} and whether they can continue to do so depends on their functional status.

Functional status is an important outcome measure of stroke survivors who are living at home. Many functional impairments may be amendable to treatment if detected early. On the other hand, a mild impairment in one function that is left untreated may progress to a major dysfunction and have a knock-out effect on other functions, leading to a crisis situation, and institutionalization becomes an inevitable outcome.⁴ Woo estimates that 10 to 20 per cent of the stroke survivors already take up approximately half of all the government nursing homes in Hong Kong.⁴ A modest shift in the proportion of stroke survivors from their homes to institutions will greatly increase the demand for this expensive community service.

There are very little local data on stroke

survivors in Hong Kong. Two previous studies on the outcome of stroke patients assessed outcome objectively in terms of mortality rates, place of residence, and activities of daily living.^{3,4} The aim of this study was to find out the functional status of stroke survivors as perceived by the patients.

Methods

The General Practice Unit of the University of Hong Kong operates a full time general outpatient clinic in the community. It has an agreement with the neurologists of the hospital in the region to follow up stroke survivors who are considered stable and no longer require specialist care. One session per week (called the neurology clinic) is assigned to the follow up of these patients, so that patients and carers can gain some mutual support, special transportation can be arranged for some patients, and defaulters can be traced more easily.

All the stroke patients were invited to take part in the study when they came in for follow up at the neurology clinic from August 1 to November 30, 1992. Our stroke patients were usually followed up once every two to twelve weeks at the neurology clinic, depending on their needs. Therefore all the stroke patients under our care should have attended the clinic at least once within the study period.

Those who agreed to take part were interviewed by a trained interviewer, using the Chinese version of the Dartmouth COOP functional health assessment charts/WONCA^{5,6} in the waiting room before the consultation with the doctor. The interviewee answered the charts in person if he could speak; if not, the accompanying person answered for the patient. Each patient was only interviewed once. The interviewer also collected data on the patients' demography and the number of years since the stroke occurred, and rated the walking ability and the speech of the patient according to a standard scale on the questionnaire.

The patient took the completed COOP/WONCA Charts to the consulting

doctor, who then rated the usefulness of the obtained information.

The results were entered into the computer and analyzed by the SPSS-PC+ programme. The Wilcoxon 2-sample tests were used to determine the effects of age, sex, walking ability, speech, number of years since stroke, marital status, social class and household structure, on the COOP/WONCA Chart scores.

Results

Sample Characteristics

During the study period, ninety-one patients attended the Neurology clinic. All the patients were Chinese and had been under the care of our Unit for more than one year. Eighty-four of them completed the assessment. There were 43 females and 41 males. The mean age was 66.4 years (SD 7.54), ranging from 52 to 85 years old.

The patients had suffered strokes 1 to 17 years ago with a mean of 7.12 years (S.D. 3.14). 38 Percent of the patients could walk normally, 29 per cent walked with a limp but without the need of an aid, 29 per cent walked with a walking aid, and 4 per cent could not walk at all. 80 Percent of them had normal speech, 15 per cent spoke with some slurring but could be understood, and 5 per cent could not be understood.

95 Percent of them were living at home (55 per cent with spouses, 29 per cent with other family members, 11 per cent alone) and 5 per cent were living in an institution.

Functional Status

Table 1 shows the scores on the COOP/WONCA Charts of the 84 stroke patients in our study: 80 percent of the patients reported moderate to severe impairment in physical activities, more than 40 per cent of the patients had moderate to severe emotional problems, 40 per cent found activities of daily living difficult and 30 per cent said that they had significant social limitations. More than 20 per cent of the patients claimed that their health was deteriorating and 15 per cent rated their health as poor or very poor. The effects of the different patient charac-

Table 1 Functional status of patients with previous stroke. COOP/WONCA scores. Rounded percentages (n=84)

	I	II	III	IV	V
Physical	10	11	12	42	26
Feelings	27	31	33	6	2
Daily activity	43	17	21	8	11
Social activity	49	21	8	8	13
Health change	5	11	63	18	4
Overall health	2	18	64	13	2

Table 2 Effects of patient characteristics on the COOP/WONCA scores. P values ≤ 0.05

	Physical	Feelings	Daily activity	Social activity	Health change	Overall health
Age	0.02					
Sex	0.05	0.02				
Walking	<0.0001	0.009	<0.0001	0.01		
Speech	0.003	0.0001	<0.0001	0.0007		0.02
Year stroke						
Marital			0.04			
Class						
Household						

teristics on the COOP/WONCA scores are shown in table 2. Abnormal speech and the inability to walk independently were both significantly associated with poorer functions in all domains measured by the COOP/WONCA Charts. Age and female sex were associated with worse scores in physical ability, and females had more emotional problems than males. Marital status, household composition, and social class did not affect the functional status. Our doctors found the information obtained by the COOP/WONCA Charts very useful in 5 per cent, moderately useful in 60 per cent, slightly useful in 33 per cent and useless in 2 per cent of the patients.

Discussion

We found that the majority of our stroke survivors had moderate to severe limitations in one or more functions. Our results are similar to the findings of a Dutch

study.⁷ The limitation in physical ability was as expected, but the large number of survivors with emotional problems was a little surprising. As many as 40 per cent of the patients still had moderate to severe emotional problems many years after their stroke. Other studies have also shown that depression and other emotional problems are common after strokes.^{8,9} Psychological impairments are major barriers to rehabilitation, and can lead to a vicious cycle.¹⁰ Unfortunately, most studies and indices on functional outcome of stroke patients concentrate on the physical function and activities of daily living, but ignore the psychological function.^{3,4,11-13} More attention should be paid to the feelings of stroke survivors.

We found both speech abnormality and poor walking ability were associated with poor functional outcome. A study by Greveson et al. also indicated that speech abnormality was associated with worse

outcomes in stroke patients.¹⁴ Gloag also showed the importance of speech on rehabilitation after stroke.¹⁵ Speech impairment is usually associated with more severe brain damage and therefore more limitation in physical and daily activities. Furthermore, the inability to communicate with others markedly limits the social function; it is also very frustrating and depressing. Speech rehabilitation should receive as much attention as motor rehabilitation after a stroke.

The functional outcomes as perceived subjectively by patients in our study were much worse than those found by objective assessments in two other local studies on stroke patients followed up by neurologists.^{3,4} One would expect poorer function among patients in the other two studies because they were under specialist care and a higher proportion of them required institutional care. What is the cause of this dilemma? Our study used patients' subjective assessment of their own functions, but the other two studies used objective assessment. The other cause of the discrepancy is the different definitions of 'good function' used in our study and the others.

Subjective assessment of health is as valid as objective assessment, if not more so.¹⁶ This especially holds true for the assessment of function which emphasizes individuals rather than groups. What 'good function' is depends on what the patient needs and wants to do. An outcome cannot be regarded as good if the patient is not satisfied, even if the doctor is. This is a fundamental issue in our attitude towards outcome measure.

Few people will argue that function is an important indicator of quality of life.¹⁶ But how do we define function and which

are the important functions to measure? If we accept the WHO's definition of health as a state of physical, social and psychological well-being, then functional status assessment should include all three aspects and the ideal should be no limitation in what the person needs to do. This comprehensive approach is particularly relevant for stroke patients whose physical disability often leads to a lot of psychological and social problems.⁸⁻¹⁰

The COOP/WONCA Charts are very suitable for measuring the long-term outcome of stroke survivors. They allow a subjective and comprehensive assessment of the functional status of the patients. They also have the advantage of being general, instead of concentrating on one or two tasks, and therefore can be interpreted by patients according to their own expectations and circumstances. They measure the function in the last two weeks and can detect any deterioration early, so that intervention can be started as soon as possible to prevent an irreversible crisis.

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