

FACTORS INFLUENCING THE QUALITY OF LIFE OF STROKE PATIENTS

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Abstract

Background: Stroke related disability seriously hamper the good quality of life. Along with proper medications, ensuring the good quality of life is vital. This study was designed to determine the quality of life and its relationship with socio-demographic and medical factors in patients with stroke.

Methods: Total fifty patients with stroke seen in the neurology out-patient dept. on a follow-up visit; at least a period of 3 months of follow-up was included. Data were collected by a questionnaire to determine patients' socio-demographic factors and for quality of life, Short Form-36 (SF-36) was used.

Results: The mean score of global quality of life in patients was 37.08 ± 17.03 . The mean score of global quality of life varied significantly according to age, gender, education, profession, place of residence, co-morbidities, affected brain area, disease duration and educational level of the caregiver.

Conclusion: These results showed a low mean quality-of-life score in patients with stroke. Various socio-demographic and clinical factors influence the quality of life of stroke patients.

Key words: Stroke, quality of life, disability, socio-demographic factors.

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Introduction:

Among the neurological diseases of adult life, stroke is ranked first in frequency and importance. It is the third most common cause of adult death in the developed world, only next to the ischemic heart disease and the cancer; and after the age of 40 years is the most common cause of physical disability¹. It is a common medical emergency with an annual incidence ranges from 180 to 300 per 100,000². In Bangladesh about 40% to 50% of beds are occupied by stroke patients in a neurology ward³.

Disability associated with stroke significantly interferes with the activities of daily living and, thus, the quality of life⁴. Quality of life is a complex concept comprising physical,

emotional and social well-being. While health is an essential ingredient of this concept,⁵ World Health Organization (WHO) identifies health-related quality of life as individuals' perception of their position in life according to their purposes, expectations, standards and worries within the context of the culture and value system in which they live⁵. Social support helps patients to cope with the stress associated with the disease and treatment⁶.

There is limited data on the quality of life in the early post-stroke phase and the changes in it over time. Social support and stroke-related depression significantly affect the quality of life after stroke⁷. Stroke-associated disability has been found to affect the health status of the individual with stroke over a period

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of time.⁸ The relationship between health status and other socio-demographic and clinical factors has been less well studied. In this study, the global quality of life was studied in patients with first ever episode of stroke, both ischemic and hemorrhagic, of 3 or more months' duration.

Methods:

This was an observational cross sectional study, was conducted on 50 patients attending the neurology outpatient dept. Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, between February 2008 and June 2009. All patients gave informed consent, and the study was approved by departmental Ethics Committee. The inclusion criteria included (1) first ever episode of stroke, both hemorrhagic and ischemic, confirmed by computerized tomography (CT) or magnetic resonance imaging (MRI), of at least 3 months' duration; and (2) providing informed consent for interview during follow-up visit. Patients with communication problems were excluded from the study. If a patient was unable to complete the questionnaire on his/her own, the investigator read the questionnaire items to the patient and recorded the answers. Data collected from the case records included type of stroke, affected brain area and disease duration. A 2-part survey was used for data collection. The questionnaire included (a) a section related to demographics, (b) SF-36 (Short Form-36) Quality of Life Scale^{9,10}. The demographic section contained basic information regarding the patient's gender, age, marital status, education, profession, place of residence and co-morbid conditions.

The measurement model of the SF-36 hypothesized that 36 items were grouped into 8 multi-item scales (physical functioning [PF], role limitations physical [RP], bodily pain [BP], general health perceptions [GH], energy/vitality [VT], social functioning [SF], role limitations emotional [RE], and mental health [MH]) that were aggregated into 2 summary measures (physical component [PCS] and mental component [MCS]). Different processes were used to generate scores for scales and summary measures. For convenience, finally they were transformed to have a common range of 0 (worst health) to 100 (best health).

The data were evaluated by using SPSS version 16.0. Kruskal-Wallis (KW) variance analysis

was applied to examine the difference between the mean score of quality of life and that with regard to each patient's socio-demographic and medical factors. Percentage was used to evaluate the parameters of age, marital status, educational status, employment, place of residence, disease period, co-morbid condition and educational status of caregivers. The *t* test was applied to determine differences between the mean quality of life scores according to gender, stroke type and brain lesion area. The Mann-Whitney (MW) *U* test was applied to determine differences between mean quality of life scores according to marital status, social insurance, care status and caregivers. Bonferroni's correction was used to determine the significant results in Kruskal-Wallis variance analysis. Significance in all statistical analyses was defined as $p < 0.05$.

Results:

The mean scores of the quality of life were shown in (Table-I). The mean age of patients was 64.18 ± 7.91 years; 42% were aged between 61 and 71 years; 64% were males, 84% were married (living spouse), 40% were illiterate, 44% were housewives, 50% lived in the urban area and 80% had no chronic disease other than stroke (Table-II). The proportion of patients with ischemic stroke was 84%. The affected hemisphere was right in 60% of the patients, and the duration of disease was between 3 and 9 months in 50% (Table-III).

The mean scores for global quality of life were high in patients aged 50 to 60 years with no co-morbidities, and in those with urban residence and secondary or high school education. The differences between groups were significant (Table-II). Mean scores for global quality of life were higher in males and employed patients (Table-II). Marital status was also associated with significant differences with respect to global quality of life (Table-II). The mean scores of global quality of life were differed significantly according to brain lesion areas and disease duration but not according to the type of stroke (Table-III).

Table-I

Quality of life scores of patient with stroke

Quality of life instruments	Ranges	Mean
global quality of life	Min-Max	X \pm SD
	13-80	37.08 \pm 17.03

Table-II*Comparison of quality of life scores related to socio-demographic variables of patients with stroke*

Characteristics	No. of patients	Global quality of life	
Age(years)		Mean(X±SD)	p-value
51-60	19	51.34±13.70	KW=27.27df=2p<.01
61-70	21	26.67±10.04	
71 & above	10	32.12±16.09	
Sex			t=-2.666df=2p<0.001
Femal	18	30.71±14.06	
Male	32	41.33±17.66	
Marital status*			MW-U=377.500p>0.05
Married	42	38.63±17.79	
Unmarried	18	32.50±14.06	
Education			
Illiterate	20	27.37±10.69	KW=30.78df=2p<0.001
Primary school	12	29.84±13.02	
High school above	18	53.75±12.82	
Employment			KW=15.75df=2p<0.001
Housewife	22	29.74±13.34	
Retired	10	43.93±19.21	
Employed	4	59.50±7.00	
Other	14	35.31±15.02	KW=17.01df=2p>0.05
Place of residence			
Urban	38	48.28±17.37	
Rural	12	28.70±7.52	t=-2.849df=68p<0.01
Comorbidites**			
Yes	40	33.68±14.40	
No	10	44.50±20.12	

*Married=spouse present

Unmarried=spouse dead or divorced

**Diabeties mellitus, IHD, Hypertension, CKD

Table-III*Comparison of quality of life scores related to clinical variables of patients with stroke*

Clinical characteristics	No. of patients	Global quality of life	
Type of stroke			t=0.584df=2p>0.05
Ischemic	42	37.78±17.00	
Haemorrhagic	08	35.05±17.45	
Side of brain lesion			t=-2.870df=2p<0.01
Left	20	30.66±12.37	
Right	30	41.90±18.55	
Duration of disease			KW=13.51df=2p<0.01
3-9 months	25	44.53±18.52	
10-16 months	10	39.73±15.46	
17-23 months>	7	26.70±4.39	
24 months	8	26.46±11.98	

Discussion:

Individuals with chronic diseases experience long-lasting physical and social limitations and can lose their jobs, independence, social status and self-respect. Even patients with no serious physical handicap still confront many difficulties in daily life, which can contribute to dissatisfaction.⁷ In this study, the quality of life of patients with stroke was found to be poor, which is similar to the observations made in earlier studies.¹¹ Patients aged 61 to 71 years had the lowest mean score with regard to global quality of life; which is similar to the findings in other studies.^{12,13,14} This may, to some extent, be attributed to the age-related functional decline. Men had higher mean scores of quality of life as compared to women, which is similar to the observations made in other studies.^{15,16} The reasons for low scores in women could be greater domestic responsibilities, continuing to shoulder responsibilities even with the presence and advancement of disease, and emotional reactions associated with the disease.

Higher levels of education were associated with higher mean scores of global quality of life; which is similar to the findings in earlier studies.^{17,18} This may be due to better coping skills and secure financial and social status of this group of patients. The highest mean scores of global quality of life were observed in patients who were employed; and the lowest scores, in housewives. The latter could be attributed to the lack of financial independence. When mean scores of quality of life were studied with respect to the place of residence, patients residing in the urban area demonstrated the highest scores with regard to global quality of life; this is probably related to easy accessibility to health care and public service facilities. This study, along with the earlier studies, documented low mean scores with regard to global quality of life in stroke patients with other comorbidities.^{7,12,14} This may be related to the health status associated with other comorbidities and also the increased treatment costs. The location of the brain lesion affected the mean scores of quality of life. Patients with right hemispherical lesions had higher scores with regard to global quality of life in

comparison to those with left hemispherical lesions. Similar have been the findings in earlier studies.¹¹ The mean scores with regard to quality of life were lower in those with prolonged disease. As expected, longer duration of symptoms and limitations, and more medical procedures to be undergone due to the chronic nature of disease may affect life negatively.^{19,20}

The limitation of this study was that the patients were drawn from among the stroke survivors attended outpatient department of BSMMU. Therefore, generalization of these findings is limited.

Conclusion:

This study clearly documents that the quality of life of patients with stroke is poor. Stroke-related quality of life should be assessed taking into account the social function and social support of the patient. Stroke survivors can be assisted by maintaining and strengthening their support systems.

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