



Quality of Life among Stroke Survivors

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ARTICLE INFO	ABSTRACT
Published Online: 29 October 2021	The physical and cognitive sequelae resulting in functional disabilities after Stroke has an influence on the quality of life (QoL) of stroke survivors. The objective of the study was to assess stroke specific quality of life among stroke survivors. A Quantitative descriptive study in which 50 stroke survivors attending the stroke OPD of a tertiary care hospital after a month were taken using convenient sampling. Their Quality of Life (QoL) was assessed in 12 domains using Stroke Specific Quality of Life (SS-QOL). The Data was analyzed using descriptive and inferential statistics. A fairly good QoL was seen among the study subjects. The mean SS-QOL was 174.86 with a SD of +/- 46.81 in a maximum score of 245 (71.37%). The most affected domain in SS-QOL was social role (59.36%), followed by family role (61.72%) and the least affected were vision (82.26%) and language (86.24%). The poor QoL in social roles and family roles clearly indicates the necessity to strengthen the stroke rehabilitative services in our community.
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I. INTRODUCTION

Stroke is the second leading global cause of death behind heart disease accounting for 11.8 percentage of total death worldwide (2013 American Heart Association). In 2013, the worldwide prevalence of stroke was 25.7 million with 10.3 million people having first stroke. Each year about 795,000 people experience a new or recurrent stroke. Approximately 610,000 of these are first attacks, and 185,000 are recurrent attacks. Stroke is the leading cause of serious long term disability in US. [1]

Stroke is a disorder characterized by focal neurologic deficit. Generally, stroke can cause five types of disabilities: paralysis or problems controlling movement, sensory disturbances including pain, problems related to using or understanding language, problems with thinking and memory and emotional disturbances. Stroke has influences on the Quality of life (QoL) of patients because of its associated physical and cognitive sequelae, such as limitations in mobility and physical functioning and depression. Although it causes major significant functional sequelae, objective assessment approaches often fail to evaluate the subjective impact of these impairments. Health related quality of life (HRQL) usually reflects the patient's subjective and personal evaluation of their own health status. Therefore, HRQL refers to the difference between idealized functions and the function

that emerged because of the disease. Increasing HRQL of patients has become a current medical target because it is the most important evaluation criteria before, during, and after the implementation of rehabilitation program. [2]

Post stroke health related quality of life (HRQL) reflects a comprehensive view of subjective health and a measure of a person's perceived physical, mental and social health following stroke. Generic scale may enable comparison between groups of patients with a diverse range of condition, although they may underestimate the effect of stroke owing to its limited content validity. Stroke-specific HRQL measures were designed to assess relevant domains that are important to stroke patient. [3]

A complex network of physical and psychosocial factors may influence an individual's adjustment to life after stroke. Demographic variables, co morbidity, severity of neurological deficits, specific physical condition linked to stroke sequelae functional disability and psychosocial factors have been reported to be significant predictors of HRQL in stroke survivors.

HRQL may decline annually up to 5 years after stroke among survivors free of recurrence, and may be associated with age, mood, stroke severity, urinary incontinence functional status, cognition and stroke laterality. [3]

A study was conducted by Anthea J. on the HRQL of patients six months' post stroke in South Africa (2014). There were participants consisting of 50% men and 50% women. The Rivermead motor assessment scale and the Barthel index were used to determine functional outcome and the EQ-5D (Euroqol) was used to collect information relating to QoL at two months and six months' post stroke. The study concluded that 35% had problems with mobility and self-care, while 42% had severe problems with everyday activity, 37.8% expressed anxiety and depression. HRQL was decreased in the South African stroke sample. Functional ability and urinary incontinence were the factors affecting QoL among the sample. [4]

Carolyn C, Elliot R. and Allen H. in 1996 conducted a cross-sectional descriptive study in Chicago to examine the overall and domain specific quality of life in long term stroke survivors and to identify variables that predict quality of life after stroke. The study was conducted among 86 subjects. Quality of life was measured with the use of an instrument that assesses satisfaction and importance for four domains (health and functioning, socioeconomic, family and psychological-spiritual). Independent variables were age, social class, aphasia, functional status, motor impairment, depression, comorbidity, and perceived social support. Multiple regression analysis was used to predict quality of life. Thirty percent of subjects were depressed. The mean overall quality of life score was relatively high and was comparable to that of a normative population. QoL was highest for the family domain and lowest for health and functioning. The study concluded that identification of depression, social support, and functional status as predictors of quality of life suggests the need to assist stroke survivors in coping and strengthening their support systems. [5]

Jong SK, Smi CK in 1991 conducted a study in Korea on the factors affecting the quality of life after ischemic stroke. Young versus Old patients 170 consecutive young onset (15-45) years patient were chosen and 340 old-onset patients were chosen. Modified Rankin scale and stroke specific quality of life scale were used for assessment. The study concluded young onset patients more often smoked cigarettes and had other determined etiologies and lower follow-up mortality rate, whereas old onset patients more often had hypertension, diabetes mellitus and a higher incidence of large vessel and small vessel disease. The frequency and the severity of motor impairment were not different between the two groups either at the time of discharge or at the time of follow up. However, the percentage of patients who had improvement in motor dysfunction was slightly higher in young patients than in old ones. [6]

Nichols DS, Clark PS in 2005 conducted a study on factors influencing stroke survivor's quality of life during subacute recovery. 299 participants 3 to 9 months' post stroke were enrolled in a multisite clinical trial. HRQL was assessed using the stroke impact scale (SIS), Version 3.0. Poorer HRQL in

the physical domain was associated with age, nonwhite race, more co-morbidity and reduced upper-extremity function. Stroke survivors with more co-morbidities reported poorer HRQL in the area of memory and thinking, and those with an ischemic stroke and concordance reported poorer communication. [7]

The decreased QoL and functional status not only affect the patients but also affect the family in many ways. Some of them will be hospitalized for long term causing financial burden and loss of work hours for the caretakers. The early identification of the problems faced by the stroke patients can guide the health care professionals to provide specific and prompt support to improve the QoL. Living with own functional limitations, at the same time achieving the maximum is an art that needs support and willpower. Health care providers along with family members can make significant contribution in the care of patients with stroke by equipping them with education on self-care management.

HRQL can help determine the burden of preventable diseases like stroke its disabilities and can provide valuable new insights into the relationships between HRQL and risk factors. Analysis of HRQL data can identify subgroups with relatively poor perceived health and help to guide interventions to improve their situations and avert more serious consequences. Interpretation and publication of these data can help identify needs for health policies and legislation, help to allocate resources based on unmet needs, guide the development of strategic plans, and monitor the effectiveness of broad community interventions.

II. MATERIALS AND METHODS

A Quantitative descriptive study in which 50 stroke survivors attending the stroke OPD of a tertiary care hospital was assessed immediately after one month after the occurrence of stroke using convenient sampling.

Tool 1: The demographic and clinical data (self-developed questionnaire).

The demographic data included age, sex, marital status, type of family, education and occupation and the clinical data included type of stroke, co-morbidities and date of stroke occurrence. The clinical data was collected from discharge summary of the patients from medical record.

Tool 2: Stroke Specific Quality of Life Scale (SS-QOL)

The SS-QOL assesses the health related quality of life specific to stroke survivors. It was developed by L.S.M Weinberger et al (1999). It has 49 items. Items were assessed on a five point Guttman type scale. Each item has one of three different response set. It provides both summary and domain specific scores. Domain scores were composed of unweighed averages. Summary scores are composed of an unweighed average of the 12 domain scores. [8]

The scores range from 49-245. Higher scores indicate better functioning. The test retest reliability of the tool was 0.67 to 0.99. The 12 domains, the number of sub questions under each domain and the corresponding scores are given below.

Ethical clearance: Ethical clearance was obtained from the Institutional Ethical & Scientific Committee. Informed written consent was obtained from each subject.

Domain	Sub question	Score
Energy	3	15
Family role	3	15
Language	5	25
Mobility	6	30
Mood	5	25
Personality	3	15
Self-care	5	25
Social roles	5	25
Thinking	3	15
Upper extremities function	5	25
Vision	3	15
Work and productivity	3	15

III. RESULTS & DISCUSSION

Table 1:- Distribution of the subjects based on demographic variables

N=50

Demographic Variable	f	%
Age in years		
30-44	6	12
45-60	24	48
>60	20	40
Gender		
Male	39	78
Female	11	22
Marital status		
Single	1	2
Married	47	94
Widow/ widower	2	4
Living status		
With family	49	98
With friends	1	2
With caregiver	0	0
Institutionalized	0	0
Alone	0	0
Education status		
Primary education	34	68
Secondary education	6	12
Graduate	6	12
Post graduate	4	8
Occupational status		
Professional	5	10
Unskilled worker	8	16
Skilled worker	6	12
Unemployed	20	40
Retired	11	22

Table 1 shows that nearly half (48%) of the sample were between 45-60 years. Majority (78%) were males, (98%) were living with their family. 68% had only primary education and 40% were unemployed.

Table 2: Distribution of subjects based on the clinical data
N = 50

Clinical Variables	f	%
Co morbidities*		
Hypertension	39	78
Diabetes mellitus	12	24
Coronary artery diseases	3	6
Other	4	8
Nil	4	8
Number of co morbidities		
Nil	7	14
One	29	58
Two	13	26
Three	1	2

* Multiple responses

Hypertension was found in 78% of the sample. 58% had one co- morbidity and 14% did not have any co morbidities.

Table 3: Mean score of SS-QOL among stroke survivors
N=50

Variable	Min. score	Max. score	Mean score	SD
SS-QOL	74	245	174.86	46.81

The mean score was 174.86 +/- 46.81(71.37%).

Table 4: Mean distribution of domain specific QoL among stroke survivors

Sl No	Domain	Max score	Mean	%
1.	Energy	15	9.34	62.26
2.	Family role	15	9.26	61.72
3.	Language	25	22	86.24
4.	Mobility	30	21.82	72.73
5.	Mood	25	15.54	62.16
6.	Personality	15	9.84	65.6
7.	Self-care	25	18.92	75.68
8.	Social -roles	25	14.84	59.36
9.	Thinking	15	10.34	68.93
10.	Upper-extremity function	25	17.74	70.96
11.	Vision	15	12.94	86.26
12.	Work and productivity	15	12.28	81.86

N=50

Table 4 depicts that the highly affected domains in QoL were social role (59.36%) and family role (61.72%) whereas, domains such as vision (86.26%) and language (86.24%) were least affected.

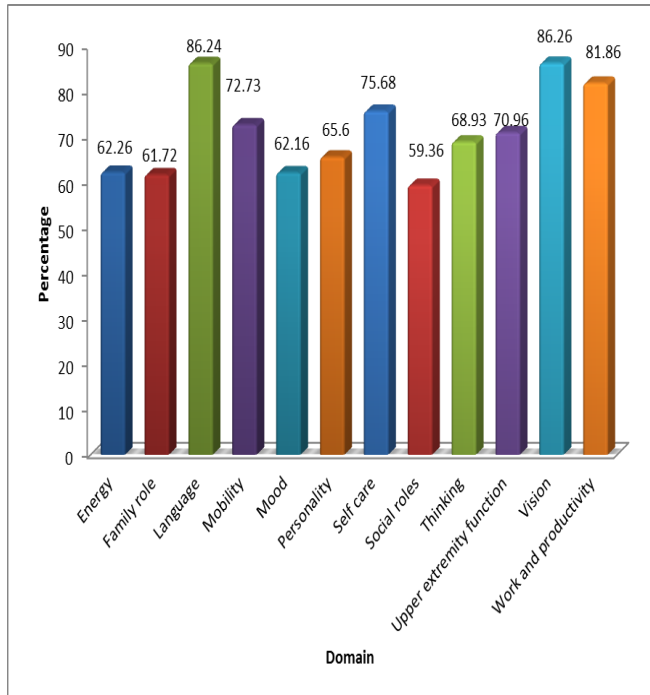


Figure 1: Mean percentage distribution of domain specific QoL

The present study on assessment of quality of life was done among 50 stroke survivors (39 males and 11 females) attending OPDs just one month after occurrence of stroke. 78% of the sample was hypertensive and 58% had one comorbidity.

The mean score of SS-QOL assessed among the stroke survivors in the present study was 174.86 +/- 46.81 in a maximum score of 245 i.e 71.37%. This shows a fairly good QoL among the study subjects.

This finding is in contrary to the findings from a Canadian study on Quality of life of 50 stroke survivors using quality of life index and functional independence measure even after 1-3 years. The overall quality of life of stroke survivors was found to be low. It has also highlighted the important predictors of QoL as depression, marital status, quality of social support and functional status thus focusing on the importance of rehabilitation program for these groups. [9] which was not done in the present study.

In the present study QoL of stroke survivors was assessed using the stroke specific QoL scale. It was found that of the twelve domains, the most affected domain was social roles (mean 14.84 out of a maximal attainable score of 25) and family roles (mean 9.26 out of a maximal attainable score of 15) and the least affected domain was vision (mean 12.94 out of a maximal attainable score of 15) and language (mean 22 out of a maximal attainable score of 25).

A similar study was conducted using the same tool in Egypt by Mahran SA, Abdulrahman MA (2015) among 64 patients who had survived up to 3 months after a stroke. The finding of the present study is in tune with the domain specific quality finding of the Egyptian study in which also vision was least affected (mean 11.09 out of a maximal attainable score of 15). But the most affected domain was mobility (mean of 12.12 out of a maximal attainable score of 30) whereas the mean score in the domain of mobility in the present study was quite high (mean of 21.82 out of a maximal attainable score of 30). This may be probably due to the fact that the present study was conducted in an OPD setting and the Egyptian study was done in a rehabilitation clinic. [10]

A study conducted in Nigeria to examine the HRQL and to identify variables that predict QoL after stroke among 86 stroke survivors using Ferrans and powers quality of index stroke version found that QoL was highest for the family domain and lowest for health and functioning. [11]

Another study done to examine the quality of life of 155 stroke survivors and their informal care givers in Korea using WHOQOL-BREF questionnaire found that the QoL of stroke patients in the domains of physical and environmental aspects improved significantly after one year, however social relationship and psychological health declined. [12]

Elizabeth B, Zeeshan B. in 2008 conducted a qualitative study in Illinois on the quality of life after stroke: the importance of social relationship. Nine long-term stroke survivors and 6 caregivers addressing were assessed. The key themes identified by patients were social support, coping mechanism, communication, physical functioning and independence. Role changes in patients were important to caregivers. The study concludes that measures of stroke –related quality of life should include assessment of social function and social support. [13]

Scalzo PL, Souza ES in 2010 conducted a study in France on the assessment of quality of life in stroke patients with hemiplegia. The patient population consisted of 80. Functional status was assessed by barthal index, quality of life was assessed by using the sickness impact profile (SIP-65) and Branholam and fugyl –Meyers satisfaction life scale. Life satisfaction and quality of life were significantly impaired in stroke patients. All life domains were impaired. The worst scores were observed for independence and health related items and physical and communication items in agreement with literature finding. The study concluded that quality of life at 2 years is significantly impaired in stroke patients. [14]

The reviews have shown the use of various tools in assessing the domains of QoL with results varying in different domains of QoL.

IV. CONCLUSION

The poor QoL observed in the study among stroke survivors in social roles and family roles is a clear indication for the

necessity to strengthen the stroke rehabilitative services in the community.

Conflict of interest: Nil

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