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KEYWORDS: Quality of Life, strokes, Activity Daily Living, WHOQOL-Brief.

"A STUDY ON THE QUALITY OF LIFE AMONG STROKE SURVIVORS: A CROSS SECTIONAL STUDY"

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ABSTRACT

Background

The World Health Organization defines - Health as a "state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."

Methodology

A cross sectional study on 96 patients with stroke aged more than 30 years was carried out NIMS Hospital, Jaipur for a period of 4 months from 1st January 2018 to 30th April 2018.

Results

Out of 96 patients, Mean quality of score of patients with stroke was 65.04±9.982 there was significant difference seen in quality of life score according to sex, side of lesion, duration of stroke, socioeconomic status, occupation and hypertension.

Conclusions

It can be said that quality of life is a multidimensional concept. As stroke cases is among the most devastating of health aspect, having multiple and profound effects upon all aspects of life, hence evaluation of quality of life is very important. Each and every effort should be made to improve these aspects and in turn to activity daily living (ADL) and improve the overall quality of stroke patients.

INTRODUCTION

Stroke is defined according to the World Health Organization (WHO) as "Rapidly developing clinical signs of focal (or global) disturbance of cerebral function, with symptoms lasting 24 hours or longer or leading to death, with no apparent cause other than of vascular origin. Global burden of disease reported 9.4 million deaths in India of which 619000 Stroke and DALY 28.5 million. The prevalence of stroke in India, rural area is around 84-262/1000000 and urban 334-424/100000.[1] Even though there is rise in death many surviving stroke patients are disabled and need help in activities of daily living which must be provided by family members, the health system or other social institutions. Stroke has multitude of negative consequences on an individual's life ranging from death, loss of independence etc.[3] Quality of Life defined as (WHO) "Individual's perceptions of their position in life in context of the culture and value systems in which they live and in relation to their goals, standards, expectations and concerns".[4] Quality of life should not be confused with the concept of standard of living, which is based primarily on income. Instead, standard indicators of the quality of life include not only wealth and employment, but also the built environment, physical and mental health, education, recreation and leisure time, and social belonging.[5] Studies have shown that Quality of Life (QOL) among stroke patients has a detrimental effect on both short and long term health related quality of Life and that disability is a strong determinant of health related quality of life.[2] The assessment of quality of life among these patients can be helpful in developing more comprehensive interventions for improvement and provide be rehabilitative services. Stroke symptoms such as headaches and dizziness may indicate a number of conditions other than stroke. It is often the speed of symptom development that indicates stroke. People experiencing strokes may not notice symptoms themselves: the stroke may make them appear dazed, "spaced-out," or confused. Common stroke symptoms include sudden are difficulty speaking, dizziness, headache, hearing difficulty, paralysis, vision problems and weakness. Stroke survivors often describe sudden dizziness, and, in some cases, the most painful headaches of their lives. The sudden appearance of debilitating headaches should always be checked, especially if the person has no history of migraine headache.[6]. A multidimensional approach is necessary to measure quality of life. Quality of Life assessment includes at least 4 dimensions: - Physical, Psychological, Social health, Environment.

AIMS & OBJECTIVES

1. To assess the quality of life (QOL) among stroke patients.
2. To assess the functional and social activities among stroke patients.

MATERIALS AND METHODOLOGY

Material and methods will be discussed under following headings.-

1. STUDY AREA

This study was conducted at the NIMS Hospital, *Jaipur,* Rajasthan.

2. TYPE OF STUDY

Hospital based cross sectional study.

3. STUDY PERIOD

1st January 2018 to 30th April 2018

4. STUDY POPULATION

All Stroke Patients who were registered at the NIMS Hospital, *Jaipur during the above mentioned study period.*

INCLUSION CRITERIA:

1) *Stroke patients aged 40 years and above.*
2) *Duration of Stroke more than 1 year. (Time since diagnosis and initiation of treatment)*

EXCLUSION CRITERIA:

1) Patients with severely ill and not able to communicate.
2) Patients who didn't give consent for participation in the study.

5. SAMPLING

Estimation of sample size:

For estimation of sample size, the mean and standard deviation of

Quality of life score. Formula for estimating a proportion with absolute precision will be used to calculate sample size.

$$n = \frac{Z_a^2 P(1-P)}{d^2}$$

Where,
n = Sample Size
Z = level of significance
d = Absolute precision required on either side of the proportion (In % points).

P = Anticipated population proportion, 100(1-α) % = 95% Confidence level.

Sampling Method:
A sample of 96 patients was done using WHOQOL – BREF - Questionnaire. This number was expected to result in a sample of required sample size 96 will be covered.

6. METHOD OF COLLECTION OF DATA
Prior informed written consent in the local language was taken from all the patients included in the study. For those who were illiterates, the consent was read out and explained to them in their language and consent was obtained by taking their signature in the consent form.

All patients under the study were personally interviewed and administered the questionnaire.

Approval of NIMS Hospital, Jaipur Ethical committee was obtained.

7. STATISTICAL ANALYSIS
WHO QOL-BREF produces a quality of life profile. We have derived from domain score. In WHO QOL-BREF questionnaire Question 1- describes an individual's overall perception of quality of life and Question 2- describes an individual's overall perception of their health. The responses given by the participants for each question (item) in the questionnaire was coded in a positive direction (higher score denotes higher quality of life). These score were considered as the raw score. The frequency and percentages are described for each of the score and for each item/questionnaire and is presented in **table 2.1**

8. STUDY VARIABLES
a) AGE:
We have arbitrarily classified age into <45 years, 46 to 65 years and more than 66 years.

b) SEX:
We have classified into Male and Female.

c) EDUCATIONAL STATUS
No Education: The person who cannot read and write with understanding in any language.

Schooling: The person who can read in any school level i.e.
PRIMARY SCHOOL: - A person who has studied in any class between 1st to 5th standard.

MIDDLE SCHOOL: - A person who has studied anywhere between 6th and 8th standard.

HIGH SCHOOL: - The person who has studied 9th and 10th passed.

INTERMEDIATE: - The person who has studied 11th and 12th passed.

GRADUATE: - The person who has done a degree or diploma course.

POST GRADUATE: - The person who has done a post graduate degree course.

d) TYPE OF FAMILY:

NUCLEAR FAMILY: - Married couple and their children, while they are still regarded as dependents.

JOINT FAMILY: - It consists of a number of married couples and their children who live together in the same household. All the men are related by blood and the women of the household are their wives, unmarried girls and widows of the family kinsmen.

THREE GENERATION FAMILY: - It is a household where there are representatives of three generations, related to each other by direct descent. It occurs usually when young couples are unable to find separate housing accommodation and continue to live with their parents and have their own children.

e) OCCUPATION
Unemployed
(a) Unemployed, (b) Retired, (c) Students (d) Housewives,
Unskilled Worker
(a) Labourers, (b) Peon, (c) Vegetable vendor, (d) Domestic servants, (e) Sweeper,
Semi-Skilled Worker
(a) Agricultural labourers, (b) Factory workers, (c) Potters, (d) Security guard,
Skilled Worker
(a) Tailor, (b) Carpenter, (c) Artisan, (d) Electrician, (e) painter, (f) Barber, (g) Supervisor, (h) Driver, (i) Plumber, (j) Postman, (k) Gardener, (l) Cook, (m) Mason, (n) Soldier, (o) constable, (p) mechanic,
Semi Professional
(a) Teacher, (b) Pharmacist, (c) Social worker, (d) Computer programmer,
(e) Nurse, (f) Constructor, (g) Government employee, (h) Owner of small business and manager,
Professional
(a) Doctor, (b) Physiotherapist, (c) Principal, (d) Director, (e) Lawyer, (f) Military officer, (g) Senior executive, (h) writer, (i) Scientist, (j) Police officer, (k) University Professor, (l) Engineer.

f) SOCIO-ECONOMIC STATUS:
Socio-Economic status of the urban family was assessed using Modified Kuppuswamy's method of socio-economic scale, which is based on the following three characteristics of the family.
1. Educational status of the head of the household
2. Type of occupation of the head of the household
3. Monthly income of the family

g) MARITAL STATUS:
We have classified marital status into married, unmarried, divorced and widowed.

h) PLACE OF RESIDENCE (LOCALITY):
We have classified patients into urban and rural according to their permanent residence.

i) RELIGION:
We have classified religion into Hindu, Muslim, Christian and Others.

j) SIDE OF LESSION:
We have classified into Right MCA infarct and Left MCA infarct.

k) DIET:
We have classified into vegetarian and mixed type of diet.

l) ALCOHOLISM:
We have classified into ever consumed and never consumed.

m) SMOKING:
We have classified into ever smoked and never smoker.

n) HYPERTENSION:
We have classified into normal (Systolic Blood Pressure (SBP) less

than 120 mm of Hg, Diastolic Blood Pressure (DBP) less than 80mm of Hg), Pre hypertension (SBP 120-139mm of Hg, DBP 80-89mm of Hg),

OBSERVATION AND RESULTS

Results of the study have been presented under the following headings:

1. Representation of QOL in various demographic factors.
2. Descriptive summary for the various items according to four domains of QOL.

1. ASSOCIATION OF QUALITY OF LIFE (QOL) WITH RESPECT TO VARIOUS FACTORS

Table - 1.1 Quality of life of stroke patients according to Age

Age groups	Number (%)	Mean ± SD
45 years or lesser	11(11.5%)	66.09±7.726
46 to 65 years	58(60.4%)	64.81±10.711
66 years or above	27(28.1%)	65.11±9.308
Total	96(100%)	65.04±9.982
# ANOVA test; p=0.927		

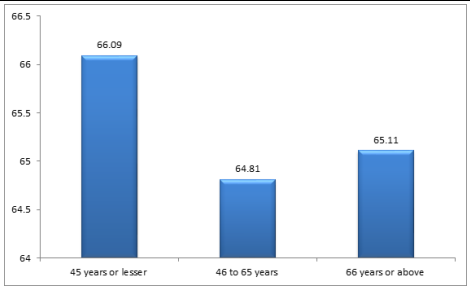


Figure - 1.1 Quality of life of stroke patients according to Age

In the present study, the mean QOL of study subjects was 65.04±9.982. We observed that QOL of study subjects were high in the age group of 45 years or lesser group (66.09±7.726) and less in the age group of 46 to 65 years (64.81±10.711).

Table - 1.2 Quality of life of stroke Patients according to Sex

Sex	Number (%)	Mean ± SD
Male	75(78.1)	66.00±10.351
Female	21(21.9)	61.62±7.820
Total	96(100)	65.04±9.982
# t –test; p = 0.042		

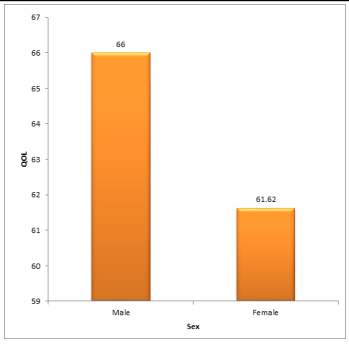


Figure - 1.2 Quality of life of stroke Patients according to Sex

In the present study, the mean QOL score was 66±10.3 in males and 61.62±7.8 in females.

Table - 1.3 Quality of life of stroke Patients according to locality

Locality	Number (%)	Mean ± SD
Urban	65(67.7)	64.23±10.587
Rural	31(32.3)	66.74±8.485
Total	96(100)	65.04±9.982
# t test ; p= 0.216		

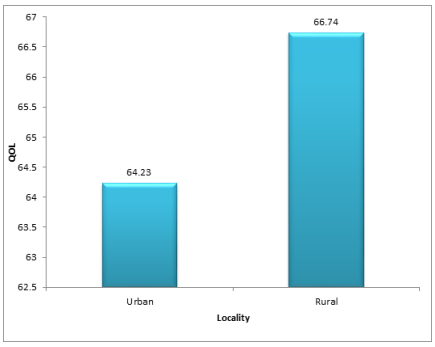


Figure - 1.3 Quality of life of stroke Patients according to locality

In the present study, we found that patients from urban area (67.7) had better mean QOL score 64.2±10.5 than patients from rural areas.

Table - 1.4 Quality of life of stroke Patients according to Religion

Religion	Number (%)	Mean ± SD
Hindu	93(96.9)	65.03 ± 10.126
Muslim	3(3.1)	65.33 ± 4.041
Total	96(100)	65.04±9.982
# t test ; p=0.914		

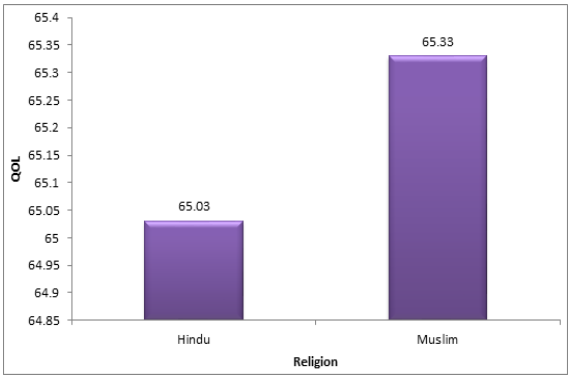


Figure - 1.4 Quality of life of stroke Patients according to Religion

In the present study, it is observed that the mean QOL score were almost same in both religions.

Table - 1.5 Quality of Life of stroke patients according to Educational status

Educational status	Number (%)	Mean ± SD
No education	28(29.2)	60.57 ± 7.249
schooling	59(61.5)	66.68 ± 10.265
Graduation & post graduate	9(9.4)	68.22 ± 11.872
Total	96(100)	65.04±9.982
# ANOVA ; p=0.16		

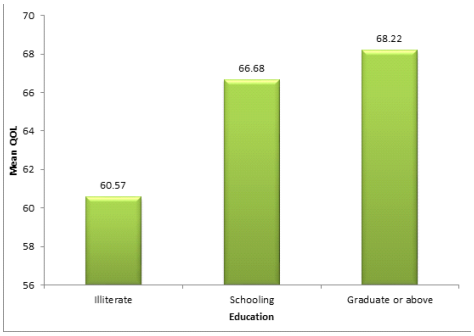


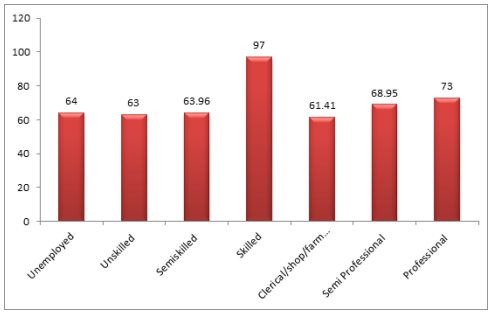
Figure - 1.5 Quality of Life of stroke patients according to Educational status

In the present study, we have seen that patients with higher education had better QOL as compared to patients with lesser education. The mean QOL score was 65.04±9.982among patients who had graduate and postgraduate education than patients with no education who had QOL of 60.57 ± 7.249.

Table - 1.6 Quality of Life of stroke Patients according to Occupation

Occupation	Number (%)	Mean ± SD
Unemployed	23(23.0)	64.0 ± 9.94
Unskilled worker	5(5.0)	63.0 ± 4.64
Semi-skilled	28(28.0)	63.96 ± 8.19
Skilled worker	1(1.0)	97
Clerical/shop/farm owner	17(17.0)	61.41± 8.25
Semi Professional	20(20.0)	68.95± 11.21
Professional	2(2.0)	73.00± 12.73
Total	96(100)	65.04±9.982
# ANOVA ; p=0.01		

Figure - 1.6 Quality of Life of stroke Patients according to Occupation



In the present study, patients who were higher up in the hierarchy of occupation had better QOL score than the other patients.

Table - 1.7 Quality of Life of stroke Patients according to Side of Lesion

Side of Lesion	Number (%)	Mean ± SD
Right MCA Infarct	54(56.3)	68.04 ± 10.064
Left MCA Infarct	42(43.8)	61.19±8.540
Total	96(100)	65.04±9.982
# t test ; p=0.001		

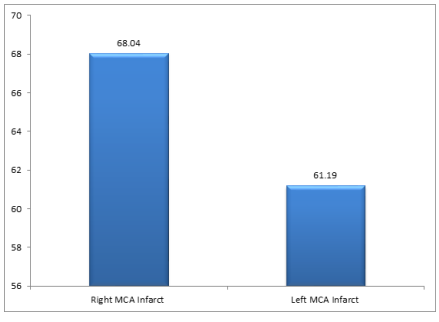


Figure - 1.7 Quality of Life of stroke Patients according to Side of Lesion

In the present study, patients had better QOL in Right MCA Infarct (68.04 ± 10.064) rather than in Left MCA Infarct.

Table - 1.8 Quality of Life of stroke Patients according to duration of Stroke

Case	Number (%)	Mean ± SD
New case (1 to 2 year)	17(17.7)	68.06 ±6.427
Old case (>2 year)	79(82.3)	64.39 ±10.511
Total	96(100)	65.04±9.982
# t test ; p=0.069		

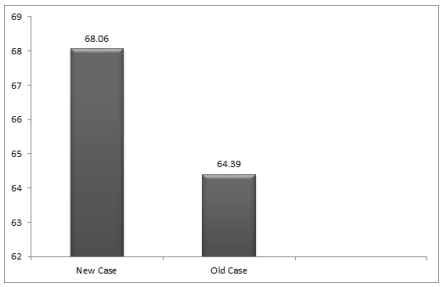


Figure - 1.8 Quality of Life of stroke Patients according to duration of Stroke

In the present study, new cases of stroke had better QOL (68.06±6.427) than old cases (64.39 ±10.511).

Table - 1.9 Quality of Life of stroke Patients according to marital status

Marital status	Number (%)	Mean ± SD
Married	87(90.6)	65.15 ± 10.107
Unmarried	5(5.2)	69.00±6.442
Widow	4(4.2)	57.75± 8.617
Total	96(100)	65.04±9.982
# ANOVA ; p=0.233		

Figure - 1.9 Quality of Life of stroke Patients according to marital status

In the present study, unmarried having better mean QOL (69.00±6.442) and poor mean QOL in widow patients (57.75± 8.617).

Table - 1.10 Quality of Life of stroke Patients according to Type of Family

Types of family	Number (%)	Mean ± SD
Nuclear	28(29.2)	64.57 ± 9.485
Joint	64(66.7)	65.34±10.467
Three generation	4(4.2)	63.50± 6.137
Total	96(100)	65.04±9.982
# ANOVA ; p=0.899		

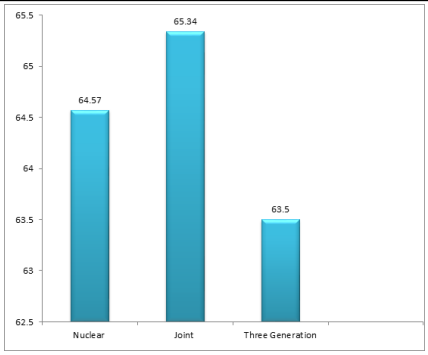


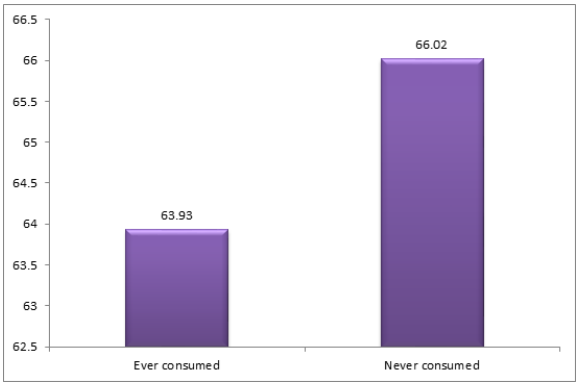
Figure - 1.10 Quality of Life of stroke Patients according to Type of family

In the Present Study, the study subjects who belonged to Joint family had better mean QOL (65.34±10.467) than patients belonging to nuclear family and three generation.

Table - 1.11 Quality of Life of stroke Patients according to Alcoholism

Alcoholism	Number (%)	Mean ± SD
Ever consumed	45(46.9)	63.93 ± 9.488
Never consumed	51(53.1)	66.02±10.393
Total	96(100)	65.04±9.982
# t-test ; p=0.307		

Figure - 1.11 Quality of Life of stroke Patients according to Alcoholism

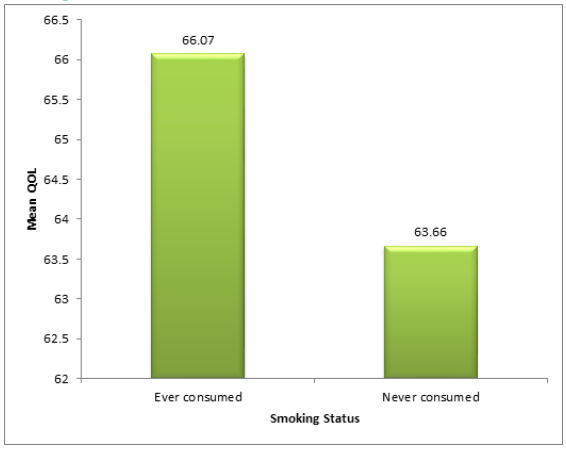


In present study, we found that patients who were never consumed alcohol had better mean QOL than former and ever consumed individuals.

Table - 1.12 Quality of Life of stroke Patients according to Smoking

Smoking	Number (%)	Mean ± SD
Ever smoked	55(57.3)	66.072 ± 10.713
Never smoked	41(42.7)	63.66±8.848
Total	96(100)	65.04±9.982
# t-test ; p=0.230		

Figure - 1.12 Quality of Life of stroke Patients according to Smoking



In present study almost similar mean QOL score in ever smoked and never smoked consumed individuals.

Table - 1.13 Quality of Life of stroke Patients according to Diet

Diet	Number (%)	Mean ± SD
Vegetarian	72(75)	65.97 ± 10.403
Mixed	24(25)	62.25±8.163
Total	96(100)	65.04±9.982
# t-test ; p=0.078		

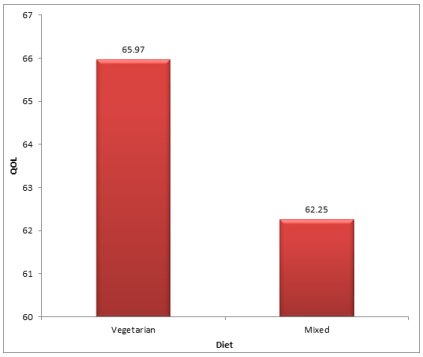


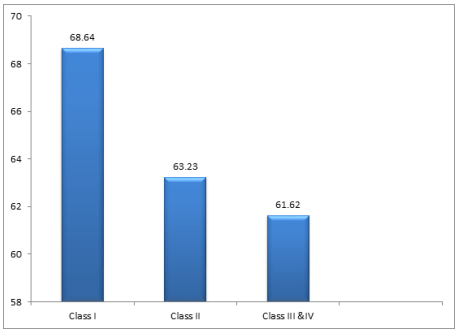
Figure - 1.13 Quality of Life of stroke Patients according to Diet

In present study, vegetarian were better mean QOL (65.97 ± 10.403) than patients who are having mixed diet.

Table - 1.14 Quality of Life of stroke Patients according to socioeconomic status

Socioeconomic status	Number (%)	Mean ± SD
Class I	36(37.5)	68.64 ± 10.524
Class II	47(49)	63.23±9.279
Class III&IV	13(13.5)	61.62±8.451
Total	96(100)	65.04±9.982
# ANOVA test ; p=0.019		

Figure - 1.14 Quality of Life of stroke Patients according to socioeconomic status



In present study, stroke patients from socioeconomic status class I had better QOL (68.64±10.524) than in class II and poor QOL in class III&IV.

Table - 1.15 Quality of Life of stroke Patients according to Hypertension

Hypertension	Number (%)	Mean ± SD
Normal	20(20.8)	68.15 ± 11.132
Pre hypertension	69(71.9)	64.86±9.679
Stage I hypertension	7(7.3)	58.00±5.745
Total	96(100)	65.04±9.982
# ANOVA test ; p=0.064		

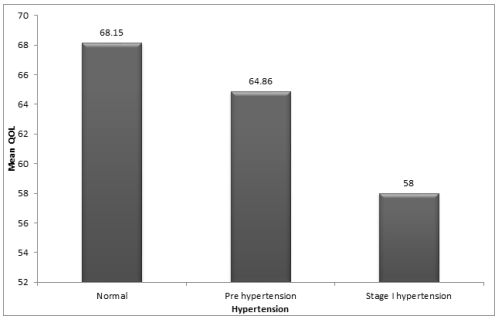


Figure - 1.15 Quality of Life of stroke Patients according to Hypertension

In present study, normal (68.15 ± 11.132) having better QOL than pre hypertension stage having lesser QOL and Stage I hypertension lowest QOL score. Individuals with normal blood pressure were having better QOL (68.15 ± 11.132) than pre -hypertensions and hypertensives.

2. Descriptive summary for the various items according to four domains of QOL.

Table - 2.1 Frequency Responses (%) for the predominant domains of QOL

Domains and Scale Points	QOL Scores				
	1	2	3	4	5
General Quality of Life	0	58(60.4%)	34(35.4%)	4(4.2%)	0
General Health	1(1.0%)	57(59.4%)	31(32.3%0	6(6.3%)	1(1.0%)
Physical Domain					
Pain And Discomfort	0	2(2.1%)	37(38.5%)	48(50.0%)	9(9.4%)
Energy and Fatigue	15(15.6 %)	58(60.4%)	19(19.8%)	3(3.1%)	1(1.0%)
Sleep and Rest	0	34(35.4%)	17(17.7%)	42(42.8%)	3(3.1%)
Dependence on Medication	1(1.0%)	18(18.85%)	73(76%)	3(3.1%)	1(1.0%)
Mobility	1(1.0%)	55(57.3%)	31(32.3%)	9(9.4%)	0
Activities of Daily Living	1(1.0%)	52(54.2%)	31(32.3%)	11(11.5%)	1(1.0%)
Work Capacity	2(2.1%)	58(60.4%)	23(24%)	13(13.5%)	0
Psychological Domain					
Enjoy Life	15 (15.6%)	28(29.2%)	45(46.9%)	7(7.3%)	1(1.0%)
Meaningful Life	12(12.5 %)	28(29.2%)	44(45.8%)	7(7.3%)	5(5.2%)
Self Esteem	0	55(57.3%)	28(29.2%)	11(11.5%)	2(2.1%)
Concentration	10 (10.4%)	32(33.3%)	50(52.1%)	3(3.1%)	1(1.0%)
Body Image	11 (11.5%)	55(57.3%)	26(27.1%)	2(2.1%)	2(2.1%)
Negative feeling	1(1.0%)	7(7.3%)	47(49%)	12(12.5%)	29(30.2 %)
Social Relationships					
Personal Relationships	0	44(45.8%)	40(41.7%)	11(11.5%)	1(1.0%)
Sex	1(1.0%)	38(39.6%)	54(56.3%)	2(2.1%)	1(1.0%)
Social Support	2(2.1%)	21(21.9%)	24(25.0%)	46(47.9%)	3(3.1%)
Environment					
Financial Resources	9(9.4%)	43(44.8%)	38(39.6%)	5(5.2%)	1(1.0%)
Information and Skills	3(3.1%)	40(41.7%)	48(50.0%)	5(5.2%)	0
Recreation and Leisure	4(4.2%)	40(41.7%)	47(49.0%)	5(5.2%)	0
Home environment	0	13(13.5%)	31(32.3%)	50(52.1%)	2(2.1%)
Access to health and Social Care	0	5(5.2%)	18(18.8%)	71(74.0%)	2(2.1%)
Physical safety and Security	10(10.4 %)	30(31.3%)	53(55.2%)	0	3(3.1%)
Physical environment	2(2.1%)	31(32.3%)	55(57.3%)	6(6.3%)	2(2.1%)
Transport	0	8(8.3%)	28(29.2%)	57(59.4%)	3(3.1%)

Table - 2.2 Mean scores for four domains of Quality of life

	Physical	Psychological	Social Relationship	Environmental
Mean	39.698	36.760	46.698	50.427
Std. Deviation	11.47	14.74	14.23	10.43
Minimum	19.0	6.0	19.0	25.0
Maximum	81.0	81.0	94.0	94.0

CONCLUSION

It can be said that quality of life is a multidimensional concept. As stroke cases is among the most devastating of health aspect, having multiple and profound effects upon all aspects of life, hence evaluation of QOL is very important. QOL depends on patients with Physical, Social, Psychological, and Environmental aspects. Each and every effort should be made to improve these aspects and in turn to Activity Daily Living (ADL) and improve the overall quality of stroke patients.

RECOMMENDATIONS

It is important to establish the reasons behind the inability of Rehabilitation to reach those people who can't afford to go to the local health centres.

The required patient to staff levels for effective Rehabilitation during in-patient Physiotherapy needs to be investigated to improve health delivery to patients post-stroke.

REFERENCES

1. Bhattacharjee M, Vairale J, Gawali K and et al. Factors affecting burden on caregivers of stroke survivors, Population based study in Mumbai (India). Ann Indian Acad of Neurol. 2012; 15(2) : 113 – 9.
2. Xie J, Wu QE, Zheng JZ. Impact stroke on Health Related Quality of Life in the Non institutionalized Population in the United States. Stroke 2006; 37: 2567-2572.
3. Paul SL, Sturm JW, Dewey HM, Donnan GA, Macdonell RA, Thrift AG. Long-term outcome in the North East Melbourne Stroke Incidence Study: predictors of quality of life at 5 years after stroke. *Stroke*. 2005;36(10):2082-2086. doi:10.1161/ 01.STR.000 0183621.32045.31
4. Larsen NSD, Clark CP, RN, Factors Influencing Stroke Survivors' Quality of Life during Sub acute Recovery. Stroke.2005; 36: 1480-1484.
5. Sims NR, Muyderman H. Mitochondria, oxidative metabolism and cell death in stroke. *Biochim Biophys Acta*. 2010;1802(1):80-91. doi:10.1016/j.bbadis.2009.09.003
6. Das SK, Banerjee TK, Biswas A, Roy T, Raut DK, Mukherjee. CS, et al. A prospective community-based study of stroke in Kolkata, India. Stroke 2007; 38: 906-10.