

Quality of life in post stroke aphasia patients

Maimoona Ismail¹, Nazia Mumtaz², Muhammad Naveed Babur³, Ghulam Saqulain⁴

ABSTRACT

Objective: To measure the quality of life in post stroke patients with aphasia.

Study Design: A Cross-sectional descriptive study

Place and Duration: Speech Therapy Department at National Institute of Rehabilitation Medicine and Speech Clinic at Yusra Institute of Rehabilitation Sciences, Islamabad, Pakistan, over a period of four months from 1st May 2017 to 31st August 2017.

Methodology: Post stroke aphasic patients of both genders were assessed through 49 item Stroke Specific Quality of Life Scale (SS-QOL). The data was collected by using both verbal and non-verbal method and patient's response on a five-point rating scale. Variables specially studied included the domains of Energy, Family roles, Language, Mobility, Mood, Personality, Self-care, Social roles, Thinking, Upper extremity function, Vision and Work productivity scores which were calculated and noted.

Results: The sample population (n=50) consisted of 62% males and 38% female respondents, with a mean age 55.46 ± 15.59 years. A high prevalence of 54%, was noted with low quality of life with score of 50-99, and only 2% having good quality of life (200-245), and another 12% and 2% having lesser quality of life with scores of 150-199 and 100-149 respectively. Most patients faced difficulty in performing the domain tasks with a Mean score of 2.60 ± 0.808 , consistent with moderately low level of quality of life.

Conclusion: Stroke patients with aphasia have low level of quality of life.

Keywords: Post stroke, Aphasia, Quality of life, Acquired language disorder, Quality of life scale

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INTRODUCTION

Stroke being the main cause of mortality worldwide, is also the leading cause of handicap¹, with incidence ranging from of 76

to 119/ 100,000 population per year in different parts of the world². It also has a very high prevalence of 4.8% in Pakistani population³, and an even higher prevalence in the elderly⁴. Stroke is associated with variable extent of physical, psychological, social and financial issues⁵ with its effects extending from mild disability to death⁶. These outcomes not only influence the individual, they affect the caregivers as well as society as a whole⁷.

Stroke also results in language impairments like aphasia and cognitive deficits⁸ with aphasia, an acquired language disorder, being a severe consequence of stroke. It is commonly classified as "Fluent" and "Non-Fluent" aphasia⁹. In Fluent Aphasia patient is able to produce connected speech and though the sentence structure is intact, it lacks meaning e.g., Wernicke's Aphasia and Conduction Aphasia. While in Non-fluent aphasia the production of speech is halted and effortful and is also associated with impaired grammar with preservation of content words e.g., Broca's and Global Aphasia.

Quality of Life (QOL) associated with stroke, incorporates all aspects of the life of an individual and is defined by world health organization quality of life (WHOQOL) group (1995) as "An individual's perception of his/her position in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"¹⁰.

Incapacity and mortality following stroke may be reduced by using appropriate measures and same is true for aphasia following mild strokes¹¹. Since the last few decades, advancements in medical field have improved the survival rate

1. Speech Language Pathologist, Institute of Medical Rehabilitation (IMR), Islamabad, Pakistan.
2. Head of Department of SLP & Hearing Sciences, Isra Institute of Rehabilitation Sciences, Isra University, Islamabad, Pakistan
3. Professor, DEAN Faculty of Allied Medical Sciences, ISRA University, Pakistan
4. Associate Professor & Head of Department of Otorhinolaryngology & Head and Neck Surgery, Capital Hospital PGMI, CDA Islamabad, Pakistan.

Correspondence:

Dr. Ghulam Saqulain

Associate Professor & Head of Department of Otorhinolaryngology & Head and Neck Surgery, Capital Hospital PGMI, CDA Islamabad, Pakistan.

Email: ghulam_saqulain@yahoo.com

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of victims, however with reduced mortality, the burden of disability is increasing and so is the awareness about the QOL. Hilari et al., suggests aphasia as a predictor of emotional misery, social isolation, and low quality of life after stroke¹². Keeping in view these facts and the magnitude of the problem in Pakistan with lack of local literature on this important medical and public health issue, this study was designed. It could help in providing reliable statistical data regarding QOL in Stroke patients with suffering from aphasia to plan effective coping strategies and for research purposes. This study was conducted with the objective to measure the quality of life in post stroke patients with aphasia.

METHODOLOGY

This cross-sectional descriptive study recruited a sample of 50 post stroke aphasia patients of both genders, above 20 years of age, using convenience sampling. Sample population was collected from clinics of Speech Therapy departments of The National Institute of Rehabilitation Medicine (NIRM) and Yusra Institute of Rehabilitation Sciences (YIRS), Pakistan, over a period of 4 months from 1st May 2017 to 31st August 2017. These included patients in whom stroke confirmed by neurologists and aphasia diagnosed by speech language pathologist. Patients admitted in intensive care units and cases of childhood aphasia were excluded from the study.

After collecting demographic detail, Stroke Specific Quality of Life Scale (SS-QOL)¹³ was used to collect data. This was based totally on the patients' subjective perception of his/her fitness and well-being. SS-QOL Scale has 49 items from 12 domains, each domain consists of 3 to 6 questions. Each question has lowest score of 1 and highest score of 5, and is rated on a 5-point Likert scale. The minimum possible score being 49 points and the maximum 245 points. The Response options are scored as 5 "no help needed/ no trouble at all/ strongly disagree", 4 "a little help needed/ moderately disagree", 3 "some help needed/ neither agree nor disagree", 2 "a lot of help/ moderately agree" and 1 "total help/ strongly agree". The higher score is consistent with better QOL and the lower score with compromised QOL¹³.

Ethics committee approval was obtained from advanced studies and Research Committee, ISRA University and written consent was obtained from all participants and wherever patient was not able to give consent, it was obtained from caregiver. Following this demographic data was collected and SS-QOL Scale was used to collect data by the researcher, using both verbal and non-verbal methods. Verbal methods being the method where verbal symbols are used to communicate, being both oral and written, however where patient was unable give response by these methods nonverbal communication including gestures like nodding, bowing, clapping, etc., was used. Also caregiver's help was obtained where necessary.

Data Analysis: Data was collected and tabulated using Microsoft Excel Worksheet and analyzed statistically using Statistical Package for Social Studies (SPSS) Version- 21. Age

and other demographic variables were presented as frequency and percentage, while SS-QOL Scale Domain scores and Item scores were presented as mean and standard deviation.

RESULTS

Our study population comprised of 50 post stroke aphasic patients, aged above 20 to 80 years with mean age of 55.46 ± 15.59 years, of which 62% (n=31) were males and 38% (n=19) females with male: female ratio of 1.36: 1. Hypertension (HTN) was the main comorbidity noted, with 46% patients having hemorrhagic while 54% Ischemic stroke and Non fluent aphasia was seen in 76%. (Table-I)

Table-I: Demographic Data of Study Population (N=50)

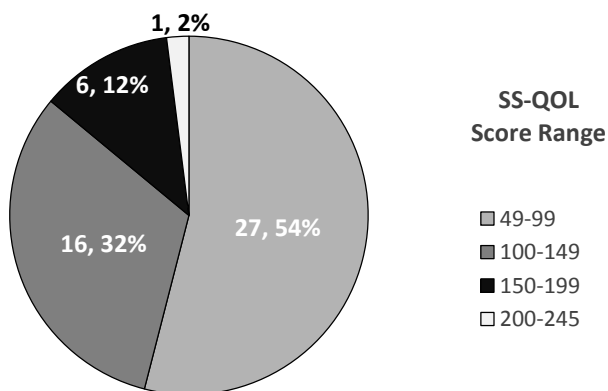
Variable	Variable Characteristic	Frequency n (%)	Valid Percent	Cumulative Percent
Gender	Male	31 (62%)	62	62
	Female	19 (38%)	38	100
Type of Stroke	Hemorrhagic	23 (46%)	46	46
	Ischemic	27 (54%)	54	100
Type of Aphasia	Fluent	12 (24%)	24	24
	Non fluent	38 (76%)	76	100
Co-Morbidities	Hypertension	29 (58%)	58	58
	Diabetes	7 (14%)	14	72
	Cardiac disease	14 (28%)	28	100

The result of current study reveal that most stroke patients face a lot of trouble in performing domain tasks with a mean score of 2.60 and Std. deviation of 0.808. As evident from Table-II, the mean score in the Energy domain in current study was $2.27 + .785$, and for Family role domain it was $2.42 + .906$, which shows that post- stroke aphasia patients need lot of help. Also with mean score of $2.78 + .679$ in the language domain, and with mean score of $2.62 + .830$, in the mobility domain, they require lot of help in language and mobility. In the mood domain the mean score was $2.66 + .848$ indicating that these patients suffer from worse mood changes and have lot of anger, thus requiring lot of support in moods. Mean score of Personality domain was $2.54 + .788$, indicating that victims of stroke with aphasia need more help about their personality. The Social Role domain mean score was $2.58 + .785$, thus these patients need a lot of help in playing social role in community. In the Self-care domain the mean score was $2.82 + .873$, thus the people need some help in doing their self-care tasks. The mean score of Thinking domain was $2.58 + .883$, thus after stroke aphasic patients need a lot help in thinking positively regarding their condition and recovery. The mean Upper Extremity Function domain score was $2.80 + .926$, thus these people need some help in upper extremity function. Mean score of vision domain was $3.44 + .861$, thus after stroke aphasic patients have better results in this domain compare to other domains. The mean score in Work productivity domain was $2.58 + .928$, thus these people face great difficulty in work and productivity.

Table-II: Descriptive Statistics of SS-QOL Score in Aphasic Stroke patients (N=50)

SS-QOL Scale Domain	Domain Level		Item Level		
	Total Score	Mean/SD. Score	Min. Score	Max. Score	Mean/SD Score
Energy	15	6.70 + 2.44	1	4	2.27 ± .785
Family Roles	15	6.46 + 2.64	1	5	2.42 ± .906
Language	25	11.84 + 3.31	1	4	2.78 ± .679
Mobility	30	10.84 + 4.31	1	4	2.62 ± .830
Mood	25	11.38 + 4.34	2	5	2.66 ± .848
Personality	15	6.74 + 2.31	1	4	2.54 ± .788
Self-care	25	12.40 + 4.85	1	5	2.82 ± .873
Social Roles	25	11.06 + 3.68	2	5	2.58 ± .785
Thinking	15	7.16 + 2.53	1	5	2.58 ± .883
Upper Extremity Function	25	12.10 + 4.54	1	5	2.80 ± .926
Vision	15	9.54 + 2.40	2	5	3.44 ± .861
Work Productivity	15	6.84 + 2.54	1	5	2.58 ± .928
Total Score	245	114 + 31.37	1	5	2.60 ± .808

Result shows that there is high prevalence of post stroke aphasic patients with low quality of life with a mean score of 114 ± 31.376 . As shown in Fig-1, the frequencies of patients in the SS-QOL Scale score range of 49 to 99 was found to be highest i.e., 54% (n=27), while patients in the score range of 200-245 was very low i.e., 2%(n=1), this score is presenting the better quality of life.

**Fig-1: Frequency of cases with observed ss-qol scale scores ranges (N=50, SS-QOL Score Range 49-245)**

DISCUSSION

The quality of life in aphasia after stroke can be assessed by knowing the impairments related to stroke and their relative negative impact on quality of life inclusive of social relationships, activities, depression, language impairment, physical disabilities, family roles, thinking, vision and many other different medical issues¹³. Therefore, in this study was conducted to measure QOL of post stroke aphasic patients, using SS-QOL Scale.

Results of the current study revealed that mostly stroke

patients face a lot of difficulty in performing tasks of different SS-QOL domains with a Mean score of 2.56 ± 0.81 out of 5 and an overall mean score is 114 ± 31.37 , consistent with moderately low level of quality of life. In contrast, in a similar study by Sinanovic et al. from Bosnia and Herzegovina found better quality of life results with a mean value of 3.24 ± 0.97 with significant correlation of aphasia severity with QOL¹⁴. Similarly in a Italian study a mean score value of 3.59 was reported¹⁵. In a local study by Khalid et al. conducted to measure post stroke QOL revealed better results with mean SSQOL score of 164.18 ± 32.30 ¹⁶, which was better than some low middle income countries (LMIC) like Nigeria and Brazil^{17,18}. The lower SSQOL score in our study can be explained, since the study is designed to include cases of post-stroke aphasia only and aphasia is associated with emotional misery, social isolation, and low quality of life¹², thus multiplying the effects of stroke on QOL.

Khalid et al., with SSQOL scores of 164.18 ± 32.30 , in their study claimed that the better SSQOL scores in their patients may have been at the cost of more caregiver burden¹⁶. Also, Morimoto et al, also found increased caregiver burden which was also associated with depreciating mental health in caregivers of stroke patients¹⁹. Also in an Asian study with the purpose to find out the QOL in victims of stroke, found poor quality of life in patients after stroke with a noteworthy association of support that was given by their circle of relatives²⁰. In the present study the caregivers were not the target of the study and their QOL score was not taken into account.

In the current study domain wise at item level there was low mean score of the Energy domain and Family domain, indicated that the post stroke aphasic patients had lot of trouble and required help, while in contrast in the Vision domain the scores were better and patients had some trouble and required some help. All the other domains showed a mean score between 2.5 and 3 indicating that they required help more than in the vision domain. Similarly in a study by Sinanovic et al. revealed that patients with post-stroke aphasia suffer reduced QOL in the energy, physical, communicational and psychosocial domains and noted highest mean scores in the Physical domain of 3.38 ± 1.09 , followed by 3.36 ± 1.07 in psychological and 2.91 ± 1.05 in the communication domains¹⁴. They also noted a very low means score of 2.86 in the energy domain similar to the current study. However, Mutai et al in their study noted that on the whole the QOL was low²¹.

The low mean score in language domain ($2.78 \pm .679$) in current study is consistent with low communication score in study by Sinanovic et al.¹⁴ and similar other studies and can be explained on the basis of reduced ability of verbal communication in aphasic patients. Similarly in the energy domain current study shows low scores consistent with other studies¹⁴, and are explained on the basis of general fatigue which is prevalent in stroke and associated with anxiety, right sided lesion of brainstem or thalamus²¹.

Choudhury et al in a local review updated the risk factors related to stroke²². Mutai et al, noted that the important predictor of poor QOL were depression, marital status, social

status and functional status²¹. A study conducted by Hilari et al. synthesized the results of 14 studies and found that the quality of life was negatively influenced by despair; and severity of aphasia and language difficulties; recovery issues; functional limits; socialization and cooperation²³. Literature search did not reveal any study regarding QOL in post stroke Aphasia patients from Pakistan.

Limitations of Study: This study was limited to outdoor clinic of two institutes, therefore the QOL assessment in acute setting, cannot be commented on. Also this is a small study limited to two centers only

CONCLUSION

Stroke patients with aphasia have low level of quality of life.

CONTRIBUTION OF AUTHORS

Ismail M: Data collection, Statistical analysis, Data interpretation

Mumtaz N: Conceived idea, Designed research methodology

Babur MN: Literature search, Manuscript final reading and approval

Saqulain G: Manuscript writing, Literature review

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REFERENCES

1. Lavados PM, Hennis AJ, Fernandes JG, Medina MT, Legetic B, Hoppe A. et al. Stroke epidemiology, prevention, and management strategies at a regional level: Latin America and the Caribbean. *Lancet Neurol*. 2007; 6(4):362-372
2. Thrift AG, Thayabaranathan T, Howard G, Howard VJ, Rothwell PM, Feigin VL et al. Global stroke statistics. *Int J Stroke*. 2017; 2(1):13-32.
3. Khan MI, Khan JI, Ahmed SI, Haq U. The Epidemiology of Stroke in a Developing Country (Pakistan). *J Neurol Stroke*. 2019; 8(1): 32-40.
4. Teh WL, Abdin E, Vaingankar JA, Sagayadevan V, Shafie S, Shahwan S. et al Prevalence of stroke, risk factors, disability and care needs in older adults in Singapore: results from the WiSE study. *BMJ Open*. 2018; 8(3). doi: 10.1136/bmjopen-2017-020285
5. Khealani BA, Hameed B, Mapari UU. Stroke in Pakistan. *J Pak Med Assoc*. 2008; 58(7):400-403.
6. Nkusi AE, Muneza S, Nshuti S, Hakizimana D, Munyemana P, Nkeshimana M et al. Stroke Burden in Rwanda: A Multicenter Study of Stroke Management and Outcome. *World Neurosurg*. 2017; 106:462-469.
7. Khalid W, Rozi S, Ali TS, Azam I, Mullen MT, Illyas S. Quality of life after stroke in Pakistan. *BMC Neurol*. 2016; 16(1):250.
8. Bonini MV, Radanovic M. Cognitive deficits in post-stroke aphasia. *Arq Neuropsiquiatr*. 2015; 73(10):840-847.
9. Dronkers N, Baldo JV. Language: Aphasia. In *Encyclopedia of Neuroscience*. Elsevier Ltd. 2010. p. 343-348 <https://doi.org/10.1016/B978-008045046-9.01876-3>
10. Whoqol Group. The World Health Organization Quality of Life assessment (WHOQOL): position paper from the World Health Organization. *Soc Sci Med*. 1995;41(10):1403-409
11. Maas M B, Lev M H, Ay H, Singhal A B, Greer D M, Smith WS, et al. The prognosis for aphasia in stroke. *J Stroke Cerebrovasc Dis*. 2012; 21(5): 350-357.
12. Hilari K, Cruice M, Sorin-Peters R, Worrall L. Quality of life in aphasia: State of the art. *Folia Phoniatr Logop* 2015;67:114–118
13. Williams LS, Weinberger M, Harris LE, Clark DO, Biller J. Development of a stroke-specific quality of life scale. *Stroke* 1999; 30(7):1362-1369.
14. Sinanović O, Mrkonjić Z, Zečić S. Quality of life and post-stroke aphasic syndromes. *Periodicumbiologorum*. 2012; 114(3):435-440.
15. Posteraro L, Formis A, Grassi E, Bighi M, Nati P, Bocchini P et al. Quality of life and aphasia. Multicentric standardization of a questionnaire. *Eura Medicophys*. 2006; 42: 227-230
16. Khalid W, Rozi S, Ali TS, Azam I, Mullen MT, Illyas S et al. Quality of life after stroke in Pakistan. *BMC Neurology*. 2016; 16(1):250.
17. Rangel ESS, Belasco AGS, Diccini S. Quality of life of patients with stroke rehabilitation. *Acta Paulista de Enfermagem*. 2013; 26(2):205–212. doi: 10.1590/S0103-21002013000200016.
18. Akosile CO, Adegoke B, Ezeife CA, Maruf FA, Ibikunle PO, Johnson OE, et al. Quality of life and sex-differences in a south-eastern Nigerian stroke sample. *Afr J Neurol Sci*. 2013; 32(1):19–25.
19. Morimoto T, Schreiner AS, Asano H. Caregiver burden and health-related quality of life among Japanese stroke caregivers. *Age Ageing*. 2003; 32(2):218-223.
20. Raju RS, Sarma PS, Pandian JD. Psychosocial problems, quality of life, and functional independence among Indian stroke survivors. *Stroke*. 2010; 41(12):2932-2937.
21. Mutai H, Furukawa T, Hourai A, Suzuki A, Hanihara T. Factors associated with multidimensional aspect of post-stroke fatigue in acute stroke period. *Asian J Psych*. 2017; 26:1-5. doi: 10.1016/j.ajp.2016.12.015.
22. Choudhury MJ, Chowdhury MT, Nayeem A, Jahan WA. Modifiable and Non-Modifiable Risk Factors of Stroke: A Review Update. *J of Nat Inst of Neurosci Bangladesh*. 2015; 1(1):22-26
23. Hilari K, Needle JJ, Harrison KL. What are the important factors in health-related quality of life for people with aphasia? A systematic review. *Arch Phys Med Rehabil*. 2012;93(1 Suppl):S86-95. doi: 10.1016/j.apmr.2011.05.028.