

Quality of Life of Patients with Ischemic Stroke Versus Hemorrhagic Stroke: Comparative Study

Diaa K. Abd Ali

*Ph.D., Adult Nursing, Department of Adult Nursing, University of Kufa, Faculty of Nursing,
College of Nursing, University of Al-Ameed, Iraq*

Abstract

Quality of life (QOL) is an important aspect of a complete outcomes evaluation, to document the effects of rehabilitation for persons with disabilities, including those with stroke. A Comparative Descriptive Study is carried out in Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate/Al-Forat Center for Neurological Sciences, from Nov. 6th, 2013, to April, 10th, in order to assess the quality of life for ischemic versus hemorrhagic stroke. A non-probability (Quota sample) of 200 patients (100 ischemic stroke patients, and 100 hemorrhagic stroke patients). The data are collected using semi-constructed questionnaire, which consists of three parts (1) Patients' Demographic data. (2) Patients' clinical data. (3) Patients' quality of life (WHOQOL). Validity of the questionnaire is determined through a five experts, who have more than 10 years of experience in nursing field. The data described statistically and analyzed through use of the descriptive and inferential statistical analysis procedures. The findings of the present study indicate that the ischemic stroke patients responses were failure at all the studied domains, except at the level of independency and environmental domain their responses were pass. While the hemorrhagic stroke patients responses were failure at all the studied domains. The study concludes that the ischemic stroke affect all the quality of life domains except the level of independence and environmental domains. While the hemorrhagic stroke affect all the quality of life domains without exceptions. While the study recommends that further studies conducted to involve a large sample size may be at a national level to obviously determine the quality of life for patients with ischemic versus hemorrhagic stroke.

Keywords: *Stroke, Quality Of Life, Hemorrhagic Stroke, Ischemic Stroke, Disabilities.*

Introduction

Cerebrovascular disorders are an umbrella term that refers to a functional abnormality of the central nervous system (CNS) ¹that occurs when the normal blood supply to the brain disrupted. Stroke is the primary cerebrovascular disorder in the United States, and it is the third leading cause of death after heart disease and cancer. Approximately 780,000 people experience a stroke each year in the United States. Approximately 600,000 of these are new strokes, and 180,000 are recurrent strokes ¹. About 5.6 million non-institutionalized stroke survivors are alive today; stroke is a leading cause of serious, long-term disability in the United States. The financial impact of stroke is profound, with estimated direct and indirect costs of \$65.5 billion in 2008 ¹. Strokes divided into two major

categories: ischemic (85%), in which vascular occlusion and significant hypoperfusion occur, and hemorrhagic (15%), in which there is extravasation of blood into the brain or subarachnoid space². Quality of life (QOL) is an important aspect of a complete outcomes evaluation, to document the effects of rehabilitation for persons with disabilities, including those with stroke ³. In addition, there are nine themes in QOL, these themes included, physical, function and independence, accessibility, emotional wellbeing, stigma, spontaneity, relationships and social function, occupation, financial stability, and physical wellbeing ⁴. Stroke can cause a wide variety of neurologic deficits that may affect the patients' quality of life. The patients may present with a group of signs or symptoms. These signs and symptoms may include numbness or weakness of the face, arm, or leg, especially

on one side of the body, Confusion or change in mental status, Trouble speaking or understanding speech, Visual disturbances, Difficulty walking, dizziness, or loss of balance or coordination, Motor Loss. In addition, the communication Loss, Perceptual Disturbances, Sensory Loss, Cognitive Impairment and Psychological Effects may involve.⁵ Living with disability has become a life-long process for many injured persons, with different set of problems presenting themselves at different stages throughout their lifetime. Extended life spans and the need for life-long follow-up make it important to expand the outcome parameters of medical care in order to better understand and promote physical, psychological, and social well-being after stroke. Thus, advances in medical and rehabilitative care have increased interest in studying how several factors may affect the QOL of individuals with stroke⁶. Quality of life has justifiably become both the ultimate goal of rehabilitation following stroke and key outcomes in determining the effectiveness of rehabilitation programs for people with disability⁷. Nursing care has a significant impact on the patient's recovery. Often, many body systems are impaired because of the stroke, and conscientious care and timely interventions can prevent debilitating complications as well as improving the patients' quality of life⁸.

Materials and Method

Design of the Study: A comparative study carried out in order to assess the quality of life for ischemic versus hemorrhagic stroke. The period of the study was from Nov. 6th, 2013, to April, 10th.

Setting of the Study: The study conducted in Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate/Al-Forat Center for Neurological Sciences.

Sample of the Study: A non-probability (Quota sample) of (200) patients with stroke (100 ischemic stroke patients, and 100 hemorrhagic stroke patients); were included in the present study. The selection of sample size based on statistical power analysis with a statistical power more than 90%.

Criteria for Including the Sample within each Stratum (Ischemic and Hemorrhagic Stroke Patients):

1. All participants diagnosed as ischemic or hemorrhagic stroke.
2. The age of the all participants is 20 – 60 years old.
3. All participants are from Arabic Nationality.
4. Alert patients, free from any change in the level of consciousness.
5. Free from renal failure, or undergoing hemodialysis or peritoneal dialysis.
6. Free from cancer or undergoing chemotherapy.
7. Free from psychiatric disorders.

Study Instrument: An assessment tool (WHOQOL) used to assess the quality of life for patients with ischemic and hemorrhagic stroke. The final copy consists of the following parts:

Part I: Patients' Demographic Data.

Part II: Patients' Clinical Data.

Part III: Patients' Quality of Life Scale.

Data Collection: The data were collected through the utilization of the developed questionnaire, and by means of structured interview technique with the subjects who were individually interviewed, by using the Arabic version of the questionnaire and they interviewed in a similar way, by the same questionnaire for all those subjects who were included in the study sample.

Validity of the Instrument: A content validity of the study instrument conducted through a group of experts who have more than 10 years of experience in nursing field.

Statistical Analysis: The data were analyze through application of the descriptive and inferential data analysis method, included:

- Frequency, percentage, and cumulative percentage.
- Mean of scores.
- Chi-square.
- Independent sample t-test.

Study Results and Findings

Table 1: Distribution of the Study Subjects by their Demographic Data

Demographic Data	Rating	Ischemic Stroke		Hemorrhagic Stroke	
		Freq.	%	Freq.	%
Residency	Rural	20	20	20	20
	Urban	80	80	80	80
Gender	Male	80	80	80	80
	Female	20	20	20	20
Age/Years	<= 37.9	40	40	60	60
	38-38.9	0	0	38	38
	40+	60	60	2	2
		Mean/S.D. (38.6/1.517)		Mean/S.D. (37.2/1.720)	
Marital Status	Single	20	20	0	0
	Married	80	80	100	100
Levels of Education	Illiterate	0	0	40	40
	Able to Read and Right	20	20	30	30
	Intermediate School Graduated	40	40	20	20
	Secondary School Graduated	40	40	10	10
Occupational Status	Governmental Employee	20	20	20	20
	Private Worker	60	60	60	60
	Housewife	20	20	20	20
Socio-Economic Status	Satisfied	20	20	0	0
	Satisfied to Some Extent	40	40	40	40
	Unsatisfied	40	40	60	60

This table shows that the majority of the study subjects (80%) were from urban residential area in both ischemic and hemorrhagic groups. In regarding to the patients gender, the study results indicate that the majority of the study subjects were males in both ischemic and hemorrhagic stroke (80%). Also the study result indicate the 40 years old and more is the dominant age group for the patients with ischemic stroke, while for the patients with hemorrhagic stroke the dominant age group is about 37.9 years old (60%). In addition, the study results indicate that the majority of the study subjects were married in both groups. In concerning to the level of education, the study results indicate that the

study subjects distributed in many levels of education: intermediate and secondary schools for the ischemic stroke patients, while for the hemorrhagic stroke patients the (40%) of them were illiterate. Furthermore, the study results indicate that 60% of the ischemic and hemorrhagic stroke patients were private workers. Finally, in this table, the study results indicate that 80% of the study subjects with ischemic stroke were exhibit satisfied to some extent or unsatisfied socio-economic status, while for hemorrhagic stroke the majority of subjects are exhibit unsatisfied socio-economic status (60%).

Table 2: Distribution of the Study Subjects by their Clinical Data

Clinical Data	Rating	Ischemic Stroke		Rating	Hemorrhagic Stroke	
		Freq.	%		Freq.	%
Duration of Disease/Months	<= 1	20	20	1-9	60	60
	2 - 5	40	40	10-18	20	20
	6+	40	40	19+	20	20

Clinical Data	Rating	Ischemic Stroke		Rating	Hemorrhagic Stroke	
		Freq.	%		Freq.	%
Follow up Visits	Yes	80	80	Yes	80	80
	No	20	20	No	20	20
Physiotherapist Visits	Yes	80	80	Yes	80	80
	No	20	20	No	20	20
Use of Supportive Aids	yes	60	60	yes	40	40
	no	40	40	no	60	60
Musculo-Skeletal Complications	Hemiparesis	80	80	Hemiparesis	60	60
	Hemiplegia	20	20	Hemiplegia	40	40
Integumentary Complications (Pressure Sores)	yes	20	20	yes	40	40
	no	80	80	no	60	60

This table shows that the majority of the study subjects with ischemic stroke (80%) presented with more than (2 months) as a duration of disease, while for those with hemorrhagic stroke the (60%) of patients were complaining a stroke for (1-9 months). In regarding to the follow up and physiotherapist visits, the majority of the study subjects (80%) in both groups were adherence to these visits. In concerning the uses of supportive aids

such as crutches and wheel chairs, the study results indicate that (60%) of the patients with ischemic stroke were used these aids, while with the same percentage were for those patients they didn't use these aids. In addition, the common musculoskeletal complications in both groups is the hemiparesis. Moreover, in regarding to the integumentary complication, the more subjects mentioned that they have not a pressure sores.

Table 3: Distribution of the Study Subjects by their Responses to the Quality of Life Domains

Main Domains	Ischemic stroke		Hemorrhagic stroke	
	M.S.	Assessment	M.S.	Assessment
Physical	1.5	Failure	1.3	Failure
Psychological	1.7	Failure	1.5	Failure
Level of Independency	2.08	Pass	1.5	Failure
Social	1.9	Failure	1.6	Failure
Environmental	2.2	Pass	1.8	Failure
Spiritual	1.98	Failure	1.8	Failure
Overall Assessment	1.80	Failure	1.58	Failure

Based on the statistical mean of scores (2), the study results show that the ischemic stroke patients responses were failure at all the studied domains, except at the level of independency and environmental domain their responses were pass. While the hemorrhagic

stroke patients responses were failure at all the studied domains. Also the study results indicate in regarding to the overall assessment for the ischemic and hemorrhagic stroke patients quality of life, the results indicate that both groups overall responses were failure.

Table 4: Association between the Ischemic Stroke Patients Quality of Life and Their Demographic and Clinical Data

Demographic and Clinical Data	Sig. Value	D.F.	p-value	Report
Residency	$\chi^2 = 0.31$	1	0.576	NS
Gender	$\chi^2 = 0.31$	1	0.576	NS
Age	C.C.= 1.87	2	0.392	NS

Demographic and Clinical Data	Sig. Value	D.F.	p-value	Report
Level of education	$\chi^2 = 1.87$	2	0.392	NS
Occupational status	$\chi^2 = 0.83$	2	0.659	NS
Socio-economic status	$\chi^2 = 1.87$	2	0.392	NS
Duration of disease	C.C. = 5.00	4	0.287	NS
Follow up visits	$\chi^2 = 5.00$	1	0.025	S
Physiotherapist visits	$\chi^2 = 5.00$	1	0.025	S
Use of supportive aids	$\chi^2 = 1.87$	1	0.171	NS
Musculoskeletal complications (hemiparesis or hemiplegia)	$\chi^2 = 5.00$	1	0.025	S
Integumentary complications (pressure sores)	$\chi^2 = 0.31$	1	0.576	NS

This table shows that there is a non-significant association between the patients’ quality of life and their demographic and clinical data except with their follow up visits, physiotherapist visits, and musculoskeletal complication, at p-value equal or less than 0.05.

Table 5: Association between the Hemorrhagic Stroke Patients Quality of Life and Their Demographic and Clinical Data

Demographic and Clinical Data	Sig. Value	D.F.	Sig. (p-value)	Report
Residency	$\chi^2 = 0.31$	1	0.576	NS
Gender	$\chi^2 = 0.31$	1	0.576	NS
Age	C.C. = 0.83	2	0.659	NS
Level of education	$\chi^2 = 1.87$	3	0.599	NS
Occupational status	$\chi^2 = 0.83$	2	0.659	NS
Socio-economic status	$\chi^2 = 1.87$	1	0.171	NS
Duration of disease	C.C. = 5.00	1	0.025	S
Follow up visits	$\chi^2 = 5.00$	1	0.025	S
Physiotherapist visits	$\chi^2 = 5.00$	1	0.025	S
Use of supportive aids	$\chi^2 = 5.00$	1	0.025	S
Musculoskeletal complications (hemiparesis or hemiplegia)	$\chi^2 = 5.00$	1	0.025	S
Integumentary complications (pressure sores)	$\chi^2 = 0.83$	1	0.361	NS

Table (5) shows that there is a non-significant association between the patients quality of life and their demographic and clinical data except with their duration of disease, follow up and physiotherapist visits, use of supportive aids, and musculoskeletal complications, at p-value equal or less than 0.05.

Table 6: Differences Between the Studied Quality of life Domains between the Different Studied Groups (Ischemic and Hemorrhagic Stroke) according to the Means Differences

Main Domains	T- value	D.f.	Sig. (p – value)
Physical	4.000	8	0.004
Psychological	1.265	8	0.242
Level of Independence	1.265	8	0.242
Social	2.449	8	0.040
Environmental	0.632	8	0.545
Spiritual	1.265	8	0.242
Overall Assessment	2.121	8	0.067

This table shows that there is a significant difference at the physical and social domains between the ischemic and hemorrhagic stroke patients, at p-value less than 0.05. While there is a non-significant differences at the other studied domains, at p-value more than 0.05.

Discussion

American Heart Association reported that the advanced age will contributing in increased incidence of ischemic stroke, Specifically, high-risk groups include people over the age of 55, because the incidence of stroke more than doubles in each successive decade, and men, who have a higher rate of stroke than women⁹. In addition, the cerebrovascular accident more common in population lived in a more popular, industrial, and overcrowded areas. In addition, ischemic stroke can affect all the human dimensions, as well as affect the quality of life. Also, the hemorrhagic stroke might occurs earlier than the ischemic stroke, and can affect all the human dimensions more than in ischemic stroke due to the fast progression of the hemorrhagic stroke. Furthermore, stroke can affect the quality of life in a variety of method. The stroke can affect the patients to communicate and activity of daily living, so it can affect the patients' quality of life. However, these effects can be vary according to the type of stroke. Because of the ischemic stroke affect, the body gradually so the body and the affected tissues can adopted and sometimes need a long time to destroy. But in case of hemorrhagic stroke affect the body suddenly, the affected tissues have no time to adapted, so the tissues will destroyed earlier⁸.

Conclusion

Based on the study results the study concluded the following:

1. The patients in urban residential area are more vulnerable to get stroke than those in rural areas.
2. Male also more vulnerable to get stroke than female.
3. All the patients with stroke are adhere to follow up and physiotherapist visits.
4. Both ischemic and hemorrhagic stroke patients require to use a supportive aids as a result to hemiparesis or hemiplegia.
5. The ischemic stroke affect all the quality of life domains except the level of independence and environmental domains. While the hemorrhagic stroke affect all the quality of life domains without exceptions.
6. The follow up visits; physiotherapist visits, and musculoskeletal complications, affect the patients quality of life after ischemic stroke.

7. The duration of disease, follow up and physiotherapist visits, use of supportive aids and the musculoskeletal complications affect the quality of life for patients with hemorrhagic stroke
8. As the both types of stroke affect the patients quality of life, but the study result indicate that the hemorrhagic stroke affect the patients quality of life more than the ischemic stroke.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the University of Kufa and all experiments were carried out in accordance with approved guidelines.

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