POST CEREBROVASCULAR ACCIDENT PATIENTS' QUALITY OF LIFE ATTENDS TO DUHOK SPECIALIZED CENTER OF RHEUMATIC DISEASES AND MEDICAL REHABILITATION

SARA J. KADHIM and SANA T. AHMED
Dept. Adult Nursing, of, College of Nursing, University of Duhok, Kurdistan Region-Iraq.

ABSTRACT

Background and objectives: The neurological dysfunction caused by cerebrovascular accident (CVA), could compromise the persons physical and/or psychosocial health related quality of life (HRQoL). The study aimed to assess physical and psychosocial of health-related quality of life (HRQoL) domains in patients with post-cerebrovascular accidents. In addition, the role of socio-demographic aspects such as age, gender, educational status, patients' caregivers and residential area on domains of HRQoL was explored in this study.

Patients and Methods: The study design was a cross-sectional descriptive design conducted to assess post-cerebrovascular accident patient's HRQoL domains. A nonprobability convenience sample of 185 CVA patients was selected according to the criteria of the study. The data were taken from the participants by direct individualized interview therefore the Stroke Specific Quality of Life (SS-QOL) scale assigned to the study. The period of data collection lasted from 4th of November 2018 to 6th of April 2019 on patients attends the physiotherapy and rehabilitation department in rheumatic disease and medical rehabilitation center.

Results: The study revealed that the patients between age 55-64 groups were females and housewives. They were from primary school graduation and less. As well, most of the patients with moderate HRQoL reside in urban areas and their caregivers were the patients' spouse. Furthermore, the association between independents variables such as age, gender, educational status and patient caregivers with physical and psychosocial HRQoL affected significantly at p-value ≤ 0.05.

Conclusion: The physical and psychosocial HRQoL domains had significant association with independents studied variables of the CVA patient. The residential area of the sample did not adversely affect the physical HRQoL domain at p-value > 0.05.

KEYWORDS: Cerebrovascular accident (CVA), Adult patient, HRQoL, Physical HRQoL, Psychosocial HRQoL

1. INTRODUCTION

Cerebrovascular accident (CVA) is a clinical syndrome of neurological dysfunction as a consequence of assumed non-traumatic vascular event that may generates focal cerebral, spinal or retinal infarction or bleeding. The CVA symptoms characterized by gradual or immediate progress for twenty-four hours or more unless the result is suddenly fatal (Sacco *et al.*, 2013). It is potential to cause an unexpected loss of certain anatomical characteristics and functions of the brain, which can be induce a variety of physical and psychological manifestation arises like, weakness in a half or both body sides, problems in the balance and coordination, trouble in speaking and eyesight. Additionally, there is a possibility of sudden or incremental changes in sensorium the cognitive function and emotional disturbances (Ribbers and Bushnik , 2018; Serda *et al.,* 2015).

Health-related quality of life (HRQoL) is assessed in a number of dimensions which include physical activity and capacity, emotional and social well-being. Hence that the world health organization (WHO) in 1948 defined "health" that made it virtually coextensive with quality of life: "not merely the absence of disease, but a state of complete physical, mental, and social well-being."(Wasserman *et al.*, 2005). Health-related

Sa-sara-s@yahoo.com

quality of life it can be affected by physical wellness of an individual's, intellectually state, emotional status and relationships to the environment and comprising spiritual, religious and personal beliefs (Lam, 2010).

The health-related quality of life in CVA patients is challenging for them because of a sudden changes in the dimensionality of physical and psychosocial life domains (Abolfathi *et al.,* 2018). The physical health of the individuals is influenced by physiological interference of illness. In fact, it is not merely represented in changes in the mobility function to perform personal care of everyday tasks, but it comprises also communication and visual aspect problems (Brown *et al.,* 2014). Likewise, psychosocial life demonstrates an individual's perception of their psychological and social status in relation with health, where interconnected of thought, coping behavior and memory status, together with a healthy communication with others (De Wit *et al.,* 2017). The aim of this study was to assess the post-cerebrovascular accident sequels on patient's health-related quality of life (HRQoL) and identify the consequences of that effect on the specific domains that include physical and psychosocial well-being.

2. PATIENT AND METHODS

Design of the study: The cross-sectional descriptive design conducted to assess post-cerebrovascular accident patient's (HRQoL) domains. The nonprobability convenience sampling method of 185 rehabilitated patients where 108 females and 77 males selected according to criteria of the study; patients were within (3) months since their diagnosed with a stroke, in the oriented and reasonable communication state, they should confirmed having a stroke not stroke mimics. Patients who have sever cognitive dysfunction like dementia and Alzheimer diseases were excluded from the study. The period of data collection lasted from the 4th of November 2018 to the 6th of April 2019 on patients attends the physiotherapy and rehabilitation department in rheumatic disease and medical rehabilitation center.

Method of data collection: The data were obtained by direct individualized interview technique, according to the questionnaire assigned to the study consists of two parts; part one: sociodemographic characteristics sheet involves age, gender, occupation, marital status, educational level, residential area and patient caregivers. Part two: The Stroke Specific Quality of Life(SS-QOL) questionnaire form which was developed by (Williams *et al.*, 1999). The modifications were applied in both items and scoring of scale to facilitate assessed HRQoL following the CVA.

Tool of collecting data: The SS-QOL scale is divided into main domains includes: The Physical HRQoL domain consists of six detailed subdivided items; language (7sub items), mobility (10 sub items), self-care (8 sub items), upper extremity function (6 sub items), vision (4 sub items) and work/productivity(3 sub items).Likewise , the psychosocial HRQoL domain again consists of six detailed subdivided items: fatigue (4 sub items), family roles (5sub items), mood (8 sub items), personality (4 sub items), social roles (6 sub items) and memory/thinking (4 sub items). The SSQOL scale recorded from (1-5) Likert type scale, with three potential responses to the given statements. Thus, the higher rate indicated a better HRQoL in both physical and psychosocial domains.

Statistical analysis methods

The statistical analysis methods include the following:

A. Descriptive data analysis through tabulation was expressed as frequencies and percentages.

B. Inferential statistical analysis as Pearson Chi-square and fisher's exact tests were used for the comparison of categorical variables. The outcome of the analysis considered statistically significant at (P-value ≤ 0.05).

C. Stratification of the level of HRQoL domains:

The item numbers of Health related quality of life (HRQoL) domains has been arranging and totality separately. Cut-Of point score calculated as following;

1. According to the physical HRQoL items, the range categories were calculated by this equation as follows:

Minimum score = Number of all physical HRQoL items$\times$ 1

$$38\times 1 = 38$$

Maximum score = Number of all physical HRQoL items $\times$ 5

$$38 \times 5 = 190$$

From the equations above the intervals level of physical HRQoL as follow: (Maximum-Minimum= Equal intervals among three categories involve (lowest physical HRQoL, moderate physical HRQoL and better physical HRQoL). Thus, category from (38-88) signified lowest HRQoL which highly affected by CVA, (89-139) signified the moderate HRQoL which partially affected by CVA and (140-190) the better HRQoL which less affected by CVA.

2. According to the psychosocial HRQoL items, the range categories were calculated by this equation as follows:

Minimum score = Number of all psychosocial HRQol items× 1

$$31 \times 1 = 31$$

Maximum score = Number of all psychosocial HRQoL items $\times$ 5

$$31 \times 5 = 155$$

From the equations above the intervals level of psychosocial HRQoL domain as follow: (Maximum- Minimum= intervals among three categories involve (lowest psychosocial HRQoL, moderate psychosocial HRQoL and better psychosocial HRQoL). Thus, category from (31-72) signified lowest HRQoL which highly affected by CVA, (73-114) signified the moderate HRQoL which partially affected by CVA and (115-155) better HRQoL which less affected by CVA.

3. RESULTS OF THE STUDY

The study showed that the age of samples ranged between 35 years and more than 75 years old with calculated mean of 62.66 (±10.4), the predominant age groups were between (65-74) years old, which represented (34.1%) . Regarding to the gender, most of them were females which represented (58.4%).The occupation of the majority patients were housewives which exist (52.4%). Furthermore, the majority of samples signified at (70.3%) were married. Concerning the educational status, the study represented that (19.5%) were illiterates, whereas those have the ability to read and write, in conjunction of primary school graduation showed similar percentages (20.0%) (20.5%)respectively. Two-third of the patients was resident in urban areas at (75.1%). Related the patients caregivers, half of them took care by a spouse at (50.8%), see Table 1

Table (1): Distributions of sociodemographic characteristic of study sample**.**

	Demographic Data	Frequency (185)	% (100)
Age groups /years	Mean (± SD)		
35-44	62.66 (±10.4)	9	4.9
45-54		26	14
55-64		62	33.5
65-74		63	34.1
75-more		25	13.5
Gender			
Male		77	41.6
Female		108	58.4
Occupation-before disease			
Unemployed		4	2.2
Private sector		34	17.3
Governmental employee		29	15.7
Housewife		97	52.4
Retired		23	12.4
Marital status			
Married		130	70.3
Widowed		55	29.7

Table 1 continues: Distributions of sociodemographic characteristic of study sample**.**

Demographic Data	Frequency (185)	% (100)
Educational status		
Illiterate	36	19.5
read and write	37	20.0
Primary school	38	20.5
Intermediate school	10	5.4
Secondary school	19	10.3
Institute	29	15.7
University graduation	16	8.6
Residential area		
Rural	46	24.9
Urban	139	75.1
Patient care giver		
Partner	94	50.8
Daughter or son	70	37.8
Other	21	11.4

The study referred that the physical HRQoL of participants was moderate affected by CVA which represented at proportion (44.3**%**). Likewise, the psychosocial HRQoL of the participants was affected to the moderate by CVA which was represented at proportion (56.2**%**), see Table 2

Table (2): Distribution of study samples according to their responses to the physical and psychosocial HRQoL domains.

	Categories	F (%)		Categories	F (%)
Physical HRQoL	Lowest HRQoL	30(16.2)	**Psychosocial HRQoL**	Lowest HRQoL	37(20.0)
	Moderate HRQoL	82(44.3)		Moderate HRQoL	104(56.2)
	Better HRQoL	73(39.5)		Better HRQoL	44(23.8)

HRQoL= Health related Quality of life, F= Frequency, (**%**) = percentage.

The study indicated that there was a highly significant association between the ages of the participants and the physical HRQoL at the p-value (= 0.006).Further, there was a significant association between the ages and psychosocial HRQoL at p-value (=0.041), see Table 3

Table (3): Association between ages of CVA patients with physical and psychosocial QOL

Age groups	Physical HRQoL			P-value	Psychosocial HRQoL			P-value
	Lowest	Moderate	Better		Lowest	Moderate	Better	
35-44	1	3	5		2	4	3	
45-54	1	11	14		0	15	11	
55-64	7	55	30	= 0.006** HS	11	36	15	= 0.041* S
65-74	11	31	21		18	32	13	
75-more	10	12	13		6	17	2	

* Pearson Chi-Square Test, ****** Fisher's Exact Test, S= Significant, HS= highly significant.

The study demonstrated that there was a highly significant association between the gender of the CVA patient and physical HRQoL domain at p-value (< 0.0o1).

Moreover, both genders of patients were a significant association with psychosocial HRQoL at p-value (=0.011), see Table 4.

Table (4): Association between the gender of CVA patients with physical and psychosocial HRQoL

Gender	Physical HRQoL			P-value	Psychosocial HRQoL			P-value
	Lowest	Moderate	Better		Lowest	Moderate	Better	
Male	6	28	43	<	10	41	26	=
Female	24	54	30	0.001* HS	27	63	18	0.011* S

* Pearson Chi-Square Test, S= Significant, HS= highly significant.

The study indicated that there was a significant association between the educational status of CVA patient and physical HRQoL domain at p-value (=0.010). Furthermore, the educational statues of patients highly significant affected on psychosocial HRQoL domain at the p-value (=0.006), see Table 5.

Table (5): Association between educational status of CVA patients with physical and psychosocial HRQoL

Educational status	Physical HRQoL			P-value	Psychosocial HRQoL			P-value
	Lowest	Moderate	Better		Lowest	Moderate	better	
Illiterate	9	21	6		9	26	1	
Read& write	6	18	13		8	19	10	
Primary school	7	20	11	=	11	23	4	=
Intermediate school	3	3	4	0.010**	2	6	2	0.006**
Secondary school	2	6	11	S	3	9	7	HS
Institute	1	11	17		2	13	14	
University graduation	2	3	11		2	8	6	

** Fisher's Exact Test, S= Significant, HS= highly significant.

The study showed that there was non-significant relationship between the residential area of CVA patients with physical HRQoL domain at p-value (=0.446). While, the psychosocial HRQoL domain were significantly affected by residential area at (=0.021), see Table 6.

Sa-sara-s@yahoo.com

Table (6): Association between Residential area of CVA patients with physical and psychosocial HRQoL

Residential area	Physical HRQoL			P-value	Psychosocial HRQoL			P-value
	Lowest	Moderate	Better		Lowest	Moderate	Better	
Rural	7	24	15	=	14	27	5	=
Urban	23	58	58	0.446* NS	23	77	39	0.021* S

* Pearson Chi-Square Test, S= Significant, NS= Non-significant.

The study revealed that the caregivers of CVA patients were at the highly significant association with physical and psychosocial HRQoL at p-value (<0.001) (=0.004) respectively, see Table 7

Table (7): Association between caregivers of CVA patients with physical and psychosocial HRQoL

Caregivers	Physical HRQoL			P-value	Psychosocial HRQoL			P-value
	Lowest	Moderate	Better		Lowest	Moderate	Better	
Spouse	8	33	51	<	10	53	29	=
Daughter or son	14	37	19	0.001**	21	35	14	0.004**
Others	8	12	3	HS	6	16	1	HS

** Fisher's Exact Test, HS=highly significant

4. DISSUASION

The result of this study represented that most of the study sample at the proportion (34.1%) were between sixties and seventies years old. The calculated mean was 62.66 (±10.4) years in the total age groups. In fact, CVA is more likely to occur in older people, aging considers the beginning of many physiological changes in the blood vessels that supply the blood to the brain sections and have the potential to induce hardening them. This finding was confirmed by (Rajan *et al*., 2019) in India, which stated that the proportion of age at (30.7%) dropped within (65-74) as well as the mean (±SD) was 61.33 (±15) years in the total age groups.

Regarding the gender, the current study demonstrates that the highest proportion at (58.4%) were females. The potential of finding that females are more likely to deteriorate in health in the early phase following of disease, resulting in stimulating them to be enrolled and obtaining the medical services, which may contribute for return to the previous activities

in the shortest possible time. This finding was supported by (Delbari *et al.,* 2016) revealed that most of the Iranian CVA patients (52.2%) were females. They found that females are more likely to have a CVA in term of existence and recovery; especially in their living style either socially or economically which may raise the chance of the poorer outcomes.

According to the occupation status before CVA occurrence, the majority of the samples at proportion (52.4%) were housewives. The finding is more likely to be that the majority of participants were older women, which affected the occupation ratio of the study samples. This result is comparable with (Salehi *et al*., 2019) in Arak, Iran, which detected that most of the samples at (45.9%) were housewives.

Moreover, the current finding shows that the majority of cases at a substantial proportion (70.3%) were married. It was fairly close to the finding of study by (Ali, 2018) in Kufa, Iraq, who found that predominant of the samples (80%) were married. In contrast, a study by (Dutra *et al*., 2017) in Brazil, reported that most of the samples were widowed. They

interpretations in their result, the finding was worrisome because the CVA caused disability, and the people likelihood of exposure to dependence on others, in these cases practiced the help of the spouse in order to meet their essential needs.

Related the educational status of this study, the predominance qualification of samples was primary school graduation and less. Identifying the educational level is necessary may lead to exposing to CVA at any time due to knowledge deficit. This result agreed with (Jun *et al*., 2015; Ali and Al-Qadi., 2017) demonstrated that most of the samples were from primary school graduation and less.

Regarding the residency site of the present study, revealed that the majority of cases were from urban at proportion (75.1%). Possible of the finding due to the distance factor, which patients living in the city center had better access and receive care as needed. The result was in agreement with the finding of (Cevik *et al.,* 2018) in Turkey, emphasized that the highest proportion of participants (62.9%) were from the city resident.

The primary source of caregiving in the current sample at proportion (49.7%) was a spouse. In fact, in the Kurdish culture, the nature of the family system is followed by a manner of families bonding, every member of the family contributes in providing the required care, starting with the spouse, son and daughter as well as other people who were living with them under one roof like the brother, sister and nephew. This finding consistent with (Rachpukdee *et al*., 2013) concluded that at the (48.0%) who takes care of Thailand samples was a spouse.

The study finding indicated that physical and psychosocial HRQoL domains were moderate affected by CVA as represented in table 2. Regarding to the association between ages of the sample with physical and psychosocial HRQoL, it was at strongly significant relationship. Due to the ageing process, and suddenly changing in the health behaviors of survivors, starting from emotional and physical limitations. This finding was parallel with (Rasul,2010) in Hawler, Kurdistan region, Iraq, found that physical HRQoL was much affected by the age. Further, a study by (Sharma *et al*., 2019) revealed that there was a highly association between ages of

survivors and psychosocial HRQoL. They found in their result, the constant feeling of helplessness, guilty, anger as well as thinking about their physical capabilities that had become a burden on the family and reluctance to ask for help might be able to the alterations of the psychosocial well-being.

The presented data of the current study specified that there was a significant association between genders of participants with HRQoL domains. This finding confirmed with (Serda *et al*., 2015) who stated that there was a higher significant relationship between gender and physical HRQoL. They claimed that females were more experienced the performance of sex-related to activities like raising children, caring others also providing to housekeeping and management may adversely affect their health. Similarly, a study by Vincent-Onabajo and Shaphan (2019) concluded that patients gender was considered as important and independent effects on the psychosocial HRQoL, in which females tend to prioritize the emotional factors in comparison with male, this can produce a radical change in their lifestyle.

There was a significant association between educational status with physical and psychosocial HRQoL domains. Basically, the dominant patients were at the primary level and less, this will have a close impact on their awareness about the phenomenon of illness and taking treatment on a continuous basis that minimize the complications of the illness. Comparable to this, a study by (Horasan *et al*., 2019) demonstrated that there was a great influence of educational level on physical well-being caused by some cultural and climatic perspective factors. Likewise, a study by (Mahran *et al*., 2015) in Saudi Arabia, established that the higher qualification of the human, the better their social and mental life as well as the efficient educational level significantly reduces the risk of post-cerebrovascular accident depression.

The present study pointed out that there was no significant relationship between the residency and physical HRQoL. While, there was a significant relationship between the residential area of participants and psychosocial HRQoL domain. This more likely depend on the individual's patterns of living .This finding were agreed by Dayapoglu and

Tan (2010) who presented that the residential area was significant association with psychosocial HRQoL domains, they supposed that, reside at an urban which had features as a variation in thinking among people, lack of social support and require a lot of expenses since their earnings declined after CVA, so these factors might induce psychological pressure.

Regarding caregivers of CVA patients, there was a highly significant association between them and patients' with HRQoL domains. This finding referred to the necessities of continuous stimulation from family to find out properly management, also the contact skills from caregivers enable patients to vent their feelings since they suffer from frustration and unwillingness to join and share with daily activities. A study by (Khalid *et al.,* 2016) was supported of current finding, who assumed that the presence of family members and spouse next to the patient was positively effect on their daily tasks and seek to improve to carry out their personal needs. Similarly, a study by (Rachpukdee *et al*., 2013) stated that informal home care provided consider sources of financial, intellectual and spiritual support.

Limitations of the current study were the inability of determining the effect of CVA on patients HRQoL in a period far from the rehabilitation phase. Although the assessment of HRQoL may more accurate after several months and even years from an event, this is due to study selected design and narrow time for data collection. Further, it was the only medical rehabilitation and physiotherapy center to manage CVA patients, which affect the sample size

5. CONCLUSION: The physical and psychosocial HRQoL had significant association with independent studied variables of the CVA patients such as age of participants, gender, educational status and patient caregivers. The study represented that the residential area of the sample did not adversely affect the physical HRQoL.

6. RECOMMENDATION: Conduct further studies regarding the assessment of HRQoL on a larger sample size and enrolling the patients at different stages of the recovery period, as well as from more different specialized setting

in the follow-up of the CVA to prove the current finding.

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