

DEPRESSION, COGNITIVE DISORDER AND QUALITY OF LIFE IN STROKE PATIENT

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Abstract

Aim: The aim of the study was to examine the relationship between the quality of life (QOL) with depression and cognitive disorder in stroke survivors after 3 months. **Material and Method:** For this study, 90 patients with stroke were recruited at the Hue Central Hospital. The patients were evaluated using the MoCA scale, the Beck Depression Inventory and the WHOQOL-BREF. mRS was used for assessing the disability level. **Results:** The results showed significant negative correlations between depression, the Activity of Daily Living -ADL scale and quality of life in patients with stroke. **Conclusion:** Depression and cognitive disorder were major factors directly related to quality of life in patient after stroke.

Keywords: quality of life, stroke patient, Beck Depression Inventory, The WHOQOL-BREF

1. INTRODUCTION

Stroke is the third most common cause of disability and second most common cause of death worldwide. Stroke is one of the most prevalent disorders of old age. It is increasing in incidence mainly as a consequence of the growing population of elderly people [15]. Improvements in acute stroke care have helped more people to survive the initial event but, while mortality has been reduced, stroke remains a major cause of disability [11]

Stroke often results in major changes in a person's life: a stroke survivor can suffer loss of health, occupation, social role, and independence [16]. Stroke has a huge impact on the patient's capacity to perform activities of daily living (ADL) [8]. Prevalence of patients who survived stroke and who required care in at least one activity of daily living (ADL) has been estimated in 173/100000 [6]. ADL involves activities of self-care, such as eating, washing and dressing, and are usually defined as physical self-maintenance tasks.

Depression is an important contribution to poor quality of life. It occurs in about a third of stroke survivors in the first months after stroke (Hackett et al 2006).

Various studies have shown a reduced QoL in patients with stroke compared with healthy individuals [7].

There are a number of studies that have shown the relationship between depression in stroke patients and ADL or QOL [9], [10]. Depression has negative effects on the QOL [12].

The aim of this study is to evaluate the relationship between the activity of daily living

performances and the level of depression, as well as, the quality of life (QOL) in patient with stroke at Hue central hospital

2. MATERIAL AND METHODS

2.1. Participants

90 patients with stroke were recruited at Hue Central Hospital from September 2014 to July 2015.

Participants were selected based on the inclusion criteria that consisted of: stroke diagnosis by a neurologist according to the WHO (1983)-criteria and confirmed by clinical history, neurological examination, and imaging via computed tomography or magnetic resonance imaging [2].

2.2. Instruments

There were four tools for collecting data including:

1. A socio-demographic questionnaire who collected data on age, gender, years of education, number of stroke episodes, marital status and history of prior psychological disorders to stroke.

2. The degree of disability was evaluated using The modified Rankin Scale (mRS): **0** - No symptoms. **1** - No significant disability. Able to carry out all usual activities, despite some symptoms. **2** - Slight disability. Able to look after own affairs without assistance, but unable to carry out all previous activities. **3** - Moderate disability. Requires some help, but able to walk unassisted. **4** - Moderately severe disability. Unable to attend to own bodily needs without assistance, and unable to walk unassisted. **5** - Severe disability. Requires constant nursing care and attention, bedridden, incontinent. **6** - Dead.

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3. The Montreal Cognitive Assessment (MoCA) is a brief screening instrument originally designed to identify MCI in elderly patients attending a memory clinic.⁴ MoCA is a 1-page, 30-point test, administrable in ≈ 10 minutes, which evaluates different domains: visuospatial abilities, executive functions, short-term memory recall, attention, concentration, working memory, language, and orientation to time and space

4. The Beck Depression Inventory (BDI) was used to assess depression among patients (Beck 1961). BDI is a questionnaire who consisted of 21 questions about how the subject has been feeling in the last week. Each question has four possible answer choices based on intensity, including the following scores: zero ("I do not feel sad"), 1 ("I feel sad"), 2 ("I am sad all the time and I can't snap out of it"), and 3 ("I am so sad or unhappy that I can't stand it").

The total score is calculated to determine the depression's severity. The BDI-II has the standard cut-off points as below: 0–9 no depression, 10–15 minimal depression; 16–19 mild depression; 20–28 moderate depression; and 29–63: severe depression (sensitivity of 88.2% and a specificity of 92.1%)

5. The WHOQOL-BREF is a 26-item instrument consisting of four domains: physical health (7 items), psychological health (6 items), social relationships (3 items), and environmental health (8 items); and two overall QOL and general health items. The physical health domain includes items on mobility, daily activities, functional capacity and energy, pain, and sleep. The psychological domain measures self-image, negative thoughts, positive attitudes, self-esteem, mentality, learning ability, memory and concentration, religion, and the mental status. The social relationships domain contains questions on

personal relationships, social support, and sex life. The environmental health domain covers issues related to financial resources, safety, health and social services, living physical environment, opportunities to acquire new skills and knowledge, recreation, general environment (noise, air pollution, etc.), and transportation (World Health Organization's Quality of Life group, US version 1997) [4].

All the questionnaire are translated and validated in Vietnamese language.

2.3. Statistical analysis

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 22.

3. RESULTS

3.1. Demographic characteristics of the study sample

In the study group there were 54.4% males and 45.6% female. Mean age was 65.57 ± 13.38 . Almost the patient live in countryside (66.7%). Unemployee was 40%, manual labour was 36.7%.

3.2. Disability degree following mRS

There were 60 patients had disability with mRS 2-5 (66.7%) and 30 patients were in the range 1-2 (33.33%).

3.3. Depression rate following the BDI in study group

Based on BDI, there were 58 patients (46.44%) having moderate to severe depression and the remaining 32 (53.56%) were not depressed. Mean score on the BDI was 19.82 ± 14.03 .

3.4. MoCA score in study group

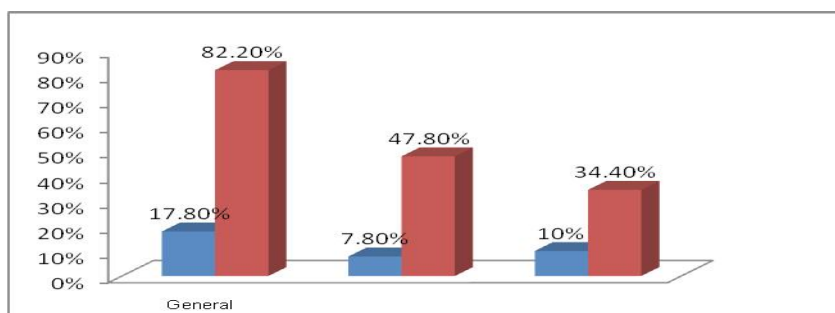
Mean MoCA 22.42 ± 2.92 , min 17, max 28. There were not difference between mean MoCA in ischemic and hemorrhagic stroke ($p > 0.05$) (Table 1).

Table 1. MoCA score in study group

MoCA score	Study group		
	Total (1) n = 90	Ischemic stroke (2) n = 50	Hemorrhagic stroke (3) n = 40
min	17	17	17
max	28	28	28
mean	22.42	22.34	22.53
SD	2.92	2.70	3.20
ANOVA test (F-ratio)	0.0884		
p(2) – (3)	0.767		

Demetia rate evaluated by MoCA scale in patient with stroke was 82,2%. This rate was higher in the hemorrhagic stroke group than those in ischemic

stroke group but the differentiation was not significant ($p > 0,05$). (picture 1).



Picture 1. Demetia rate evaluated by MoCA scale in patient with stroke

Table 2. Quality of life in the study group assessed by WHOQOL-BREF

The domains of WHOQOL-BREF	Mean score (X ± SD)	Normal range mean of WHOQOL-BREF
Overall QOL	2.71± 0.74	3 (1-5)
General health	2.72± 0.96	3 (1-5)
Physical health	10.67±2.65	12 (4-20)
Psychological health	10.72±2.85	12 (4-20)
Social relationships	11.14±1.93	12 (4-20)
Environmental health	11.18± 2.89	12 (4-20)

QOL of patient assessed by WHOQOL-BREF in study group was low in all domains compared with the normal range mean

Table 3. The correlation between WHOQOL-BREF with MoCA scale, mRS, BDI

Variables	WHOQOL-BREF	
	r	p
MoCA	-0.302	<0.05
mRS	-0.365	<0.001
BDI	-0.421	<0.001

There were a significant negative correlation between WHOQOL-BREF and MoCA scale, mRS, BDI

Table 4. WHOQOL-BREF scores in stroke patients with and without depression

Variables		median	min	max	p
Overall QOL	With depression	2.35	2.13	2.85	<0.05
	Without depression	2.87	2.76	3.8	
General health	With depression	2.23	2.1	2.76	<0.05
	Without depression	2.85	2.4	3.2	
Physical health	With depression	10.9	6.8	14.23	<0.05
	Without depression	10.65	6.78	14.85	
Psychological health	With depression	11.63	7.2	16.1	<0.001
	Without depression	12.43	8.65	14.82	
Social relationships	With depression	10.62	5.6	16.2	<0.001
	Without depression	12.55	6.8	16	
Environmental health	With depression	12.68	7.65	17	<0.001
	Without depression	15.8	12	18.3	

4. DISCUSSION

Quality of Life (QoL) assessment has been an important part of the evaluation of stroke patients and their treatment for more than 30 years. QoL is difficult to define and no universal definition of this term exists.

However, there is a general agreement that QoL is a multi-dimensional construct that consists of at least three broad domains: physical, mental and social [13]. In some international studies 14-18 using the WHOQOL-BREF instrument, it was observed that the quality of life of an individual is greatly affected after a stroke.

In our study, QOL decreased in all domains compared with the normal range mean (table 2)

Mental health, physical and cognitive impairment are related to decreased quality of life, but it is possible to decrease the influence of functional status on the quality of life through social support, education of both patients and members of their families and suitable support from the community. Patients who can re-integrate into normal life have better outcome of the disease and better quality of life.

In the study by Baune and Aljeesh, it was compared the QoL of hypertensive people with and without CVA. People with stroke had a significantly lower QoL than those with hypertensive patients who have not had a CVA. Zalihic et al.15 compared the quality of life of individuals who have had a CVA with individuals who have had an acute myocardial infarction. The quality of life was significantly worse in patients with stroke compared with those with acute myocardial infarction [3], [17].

Gupta et al observed in their research with neurological patients, of whom 40% were affected by a CVA, the mean scores of the WHOQOL-BREF was lower in the physical domain (38.83) followed by psychological (50.76), social (48.53) and the environment (49.13). Also was concluded that all domains of quality of life are affected and those people affected need to participate in a rehabilitation program. The area most affected in the study by Pan et al.17 was physical, followed by psychological, social relationships and

environment.

In the Bölsche et al study the physical domain acquired improvement during his intervention, while the social relations domain was most affected.

Dementia rate evaluated by MoCA scale in our study was at 82.2%. This percentage was higher in the hemorrhagic stroke group than those in ischemic stroke group but the difference was not significant ($p>0.05$). (picture 1).

Pohjasvaara T and al was studied on 107 patients with stroke used DSM-IV concluded that dementia rate was 91.6% [14].

In another study of Cumming TB observed on 294 stroke patients showed that 65% patients having dementia assessed by MoCA scale [3]. This rate was 68.2% following the study of Trần Công Thắng [5], [1].

Post stroke depression rate in our study was 46.44% compared with Bao Hung (35.16%), Timothy K 36%. Our result was higher than the others study can explain by mean age was high in the study group. Our result was similar to the study of Jönsson AC (41%).

Poststroke depression is a treatable condition; early diagnosis is of paramount importance to prevent progression to a chronic depressive disorder. Depression slows down the process of rehabilitation, exerting a negative influence on all aspects of the process of recovery.

In the table 4, Quality of life evaluated in all items was significantly different between depression group and non-depression group ($p<0.05$). Quality of life was significantly lower in patients with depression than those without depression

Following Abubakar, Functional status and depression were identified as independent factors affecting the Quality of life of stroke survivors.

5. CONCLUSION

It is concluded that stroke has significant impact on the quality of life of survivor post-stroke patients. Depression and cognitive disorder were major factors directly related to quality of life in patient after stroke.

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