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Effect of Depression on Stroke Specific Quality of Life: A Survey in Urban Settings of Lahore City

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Research Article

Abstract

Background: Stroke has significant effect on physical and mental functioning of the patients. The impact on functionality and activities of daily living can further have profound effect on post stroke depression and quality of life of the patients. Objective of this study was to determine the effect of depression on stroke specific quality of life.

Method and findings: A sample of 195 post stroke patients was selected using convenient sampling. Male or female Post stroke patients, Age 30 to 55 years, 1 to 6 months after their first stroke and with a level of disability of 2 to 4 on Modified Rankin Scale (MRS) were included in the study. Diagnostic and statistical manual of mental disorders-IV (DSM IV) criterion for the diagnosis of depression was used in the form of questionnaire to determine the frequency of depression among stroke patients. The quality of life of both depressed and non-depressed stroke patients was assessed using Stroke Specific Quality of life Scale. Most of the respondents were diagnosed as depressed (n=135, 69.2%). Most of the respondents had a poor quality of life (n=133, 68.2%) as measured on the stroke specific quality of life scale. A moderate negative correlation was found between depression and quality of life (r=-0.677, p-value<0.05).

Conclusion: Depression and a poor quality of life are frequent post-stroke. Depression negatively affects the stroke specific quality of life of the patients and the more strongly effected domains of the quality of life are social roles, family roles, thinking and energy.

Keywords: Depression; Depressive disorders; Psychotherapy; Quality of life; Stroke.

Abbreviations: DSM-IV: Diagnostic and Statistical Manual of Mental Disorders-IV; MRS: Modified Ranking Scale; SPSS: Statistical Package for Social Sciences; SRF: Social Role Functioning; SS-QOL: Stroke Specific Quality of Life

1. Introduction

Stroke is a standout amongst the most widely recognized illnesses, which has lasting effects on the nervous system. Stroke has been found to be the third most regular reason for increased death rates after cancer and coronary illness [1].

Stroke has significant effect on physical and mental functioning of the patients. The impact on functionality and activities of daily living can further have profound effect on post stroke depression and quality of life of the patients [1].

Depressive symptoms have been found to be common post stroke. Many studies have reported various incidence rates for post stroke depression, ranging from 18% to 61%. Depression after stroke is reported to continue from few weeks till months and even for many years. Even though depressive signs are quite frequently found in patients post stroke, yet late evaluation and assessment leads to delayed management. Late intervention can have unfavourable effects on patient's psychological and physical recovery [1].

Even among those patients who have no post stroke disability, depression negatively affects the quality of life [2].

Bartoli et al. concluded a potentially strong relation between post stroke depression and mortality [3].

A study conducted by Haghgoo et al. [1] on Iranian stroke survivors to find the association between the daily life activities and severity of post-depression, along with, the quality of life. The study resulted in direct relation between patient's functional status and Quality of life. Moreover it was found that higher depression leads to more dependency in Activities of daily life [1].

A study by Abubakar and Isezuo [4] to determine the factors associated with quality of life of stroke population in which sixty two stroke survivors were seen which found that both post stroke depression and decreased functional status were independent factors of poor quality of life.

This study will help us to determine the association between depression and quality of life of stroke patients. The Health care providers would be aware of the fact that for achieving successful goals in the therapy they must be aware of patient's mental

status and motivation towards improved quality of life. Moreover after the post stroke depression assessment, Physical therapist would understand the need of referral of depressive patients.

Literature review showed that depression and lower functional status is related to poor Quality of life in patients following stroke. However, there are few, society bound studies which focus on the relationship between these two variables i.e. Post stroke depression and Quality of life. Concerning disabling outcomes of stroke and its long term impacts on the individual's capacity it is important to study the relationship between Post stroke depression and Quality of life before planning the patient management [1].

Although the effect of post stroke depression on quality of life has been studied previously but this study is focused specifically on the effect of depression on the stroke specific quality of life. The point of importance is the stroke specific quality of life because it is based on outcomes that are specific to stroke.

Several regional studies have been conducted on depression and quality of life post stroke in specific populations. This study is focussed on a population that is socio demographically different from the other populations on which the problem at hand has been studied previously. Objective of this study was to determine the effect of depression on stroke specific quality of life in urban settings of Lahore city.

2. Materials and Methods

The cross sectional survey was conducted after the approval from ethical review board of the concerned institute. Data was taken from Physical therapy and Neurology Department of Public Hospitals in Lahore. Male or female Post stroke patients, Age 30 to 55 years, 1 to 6 months after their first stroke and with a level of disability 2 to 4 on Modified Rankin Scale (MRS) were included in the study. Post stroke patients with History of some other neurological disorder or head injury, Pre stroke history of Antidepressants use and Second episode of stroke were excluded from the study. After the approval, informed consent was taken from the patients. All 195 participants fulfilling the inclusion criteria were selected through convenient sampling technique. Diagnostic and statistical manual of mental disorders-IV (DSM IV) criterion for the diagnosis of depression was used in the form of questionnaire to determine the frequency of depression among stroke patients. For a patient to be diagnosed as depressed he must possess at least five out of the nine symptoms and the five symptoms must include one of either sad mood or lack of interest or pleasure. Less than 5 symptoms indicated no depression [5]. DSN-IV criteria was used because it is simple and easy to administer.

The quality of life of both depressed and non-depressed stroke patients was assessed using Stroke Specific Quality of life Scale. All disciplines of SS-QOL have good internal reliability value of Cronbach's alpha ≥ 0.73 [6].

Stroke Specific Quality of Life scale is used to measure the quality of life specific to stroke patients. The scale measures 49 items under 12 domains (energy, family roles, language, mobility, mood, personality, self-care, social roles, thinking, upper extremity function and vision and work productivity). The domains scores are composed of unweight averages and the total score from 49-245 based on patient's response where a higher score indicates better functioning [7]. Due to the language barriers the data collection instruments were filled in for the respondents. SPSS version 20 was used for data analysis. Pearson Correlation coefficient was used to determine the effect of depression on stroke specific quality of life. P-value of 0.05 was considered significant.

3. Results

Average age in years of the participants was 40.21 (SD=6.23). Average number of months post stroke were 3.00 (SD=1.37) (Table 1).

Most of the participants (n=114, 58.5%) were males. highest frequencies on marital status, residence status and employment status were seen for married (n=144, 73.8%), urban (n=147, 75.4%) and employed (n=127, 65.1%), respectively (Table 1).

Most of the respondents resorted to have studied till secondary school (n=62, 31.8%) and the majority of participants had monthly income below 10,000 rupees (n=98, 50.3%) (Table 1).

Table 1. Socio-demographic profile of the patients.

		Frequency	Percentage
Gender	Males	114	58.5
	Females	81	41.5
Marital Status	Married	144	73.8
	Unmarried	29	14.9
	Widowed	14	7.2
	Divorced	8	4.1
Residence Status	Rural	48	24.6
	Urban	147	75.4
Employment Status	Employed	127	65.1
	Unemployed	68	34.9
Education Status	Illiterate	45	23.1
	Primary	34	17.4
	Secondary	62	31.8
	Higher	54	27.7
Monthly Income	<10,000	98	50.3
	10,000-40,000	87	44.6
	>40,000	10	5.1
Age	Mean (SD)	40.21	
Months post stroke	Mean (SD)	3.00	

Table 2. Frequency distribution of depression and individual items on DSM-IV criteria of diagnosis of depression.

		Frequency Yes	Percentage No
Depression Diagnosis		135 (69.2%)	60 (30.8%)
Depressed Mood		154 (79%)	41 (21%)
Loss of Interest In Activities Previously Enjoyed		124 (63.6%)	71 (36.4%)
Significant Weight Changes	Weight Loss >5%	58 (29.7%)	137 (70.3%)
	Weight Gain >5%	25 (12.8%)	170 (87.2%)
Sleep Disturbance	Late Onset Sleep	96 (49.2%)	99 (50.8%)
	Feeling Un-Fresh In The Morning	17 (8.7%)	178 (91.3%)
Psychomotor	Agitation	95 (48.7%)	100 (51.3%)
	Retardation	26 (13.3%)	196 (86.7%)
Loss of Energy		126 (64.6%)	69 (35.4%)
Feelings of Worthlessness		141 (72.3%)	54 (27.7%)
Diminished Ability to Concentrate		142 (72.8%)	53 (27.2%)
Recurrent Thoughts of Death or Suicidal Ideation		105 (53.8%)	90 (46.2%)

Highest frequencies were seen for presence of depressed mood (n=154, 79%), loss of interest in activities (n=124, 63.6%), loss of energy (n=126, 64.6%), feelings of worthlessness (n=141, 72.3%), diminished ability to concentrate (n=142, 72.8%) and recurrent thoughts of death (n=105, 53.8%) (Table 2).

Most of the respondents were diagnosed as depressed (n=135, 69.2%) according to the DSM-IV criteria of diagnosis (Table 2).

Total Mean score of stroke specific quality of life was 129.07 (SD=36). Minimum value was 61 and maximum was 243). Most of the respondents had a poor quality of life (n=133, 68.2%) as measured on the stroke specific quality of life scale (Table 3).

Moderate negative correlation was found between depression and stroke specific quality of life (r=-0.677, p<0.05). Mean score of depression of DSM-IV was 5.07 ± 2.12 and average score of stroke specific quality of life was 129.07 ± 36 (Table 4).

Depression had a significant negative correlation with all of 12 domains of stroke specific quality of life (p-value<0.05). Depression showed Moderate negative correlation with social roles (r=-0.633), family roles (r=-0.628), thinking (r=-0.607) and energy (r=-0.602) (Table 4).

Table 3. Frequency distribution of stroke specific quality of life.

		Frequency (n=195)	Percentage
SS-QOL	Poor	133	68.2
	Good	62	31.8

Table 4. Correlation of post stroke depression with stroke specific quality of life.

	Mean ± SD	r	P value
SS-QOL	129.07 ± 36	-0.677	0.000
Domains of SS-QOL			
Energy	7.34 ± 3.58	-0.602	0.000
Family roles	7.46 ± 4.01	-0.628	0.000
Language	13.47 ± 5.63	-0.544	0.000
Mobility	16.33 ± 6.56	-0.578	0.000
Mood	12.87 ± 5.98	-0.567	0.000
Personality	7.94 ± 4.33	-0.503	0.000
Self-care	14.73 ± 6.88	-0.497	0.000
Social roles	12.19 ± 5.98	-0.633	0.000
Thinking	7.4 ± 3.60	-0.607	0.000
Upper extremity function	13.16 ± 5.61	-0.526	0.000
Vision	8.23 ± 3.59	-0.532	0.000
Work productivity	7.92 ± 3.59	-0.556	0.000

4. Discussion

Current study was focused on post stroke depression and quality of life among Pakistani stroke survivors in during first six months post stroke. Most of the previous literature is focused on effect of depression on quality of life in chronic stroke patients. The results of this study have shown that post stroke depression was common among the stroke patients which had a negative impact on their quality of life these result are consistent with the previous studies which narrate that risk of depressive disorders was ranging from 25% to 79% among the people which were suffering from stroke [3,4]. In another study negative effect of post stroke depression has been reported that female patients had lower quality of life at six months compared with men specially in domain of physical and mental functions in an acute ischemic stroke this study did not find any relationship between gender and stroke outcome including quality of life in three months after stroke [4].

A study by Schmid et al. [8] was conducted to assess whether depression improvement is related to 4-month Social Role Functioning involving people with a new stroke (recruited during the inpatient stay, All survived an ischemic stroke), narrates that treating depression will result in improved SRF; or conversely, that if intervene to improve SRF, may reduce the symptoms of depression after stroke. It is therefore important for therapists to remember to screen for depression and communicate the findings with the rehabilitation team, patient and family [8].

Naess et al. [9] conducted a study on stroke patients to find effects of fatigue, pain and depression on quality of life, which concluded that all these variables were common symptoms after stroke and to a broader degree; these factors closely affect the patient's Quality of life.

A study by Visser et al. [10] was conducted to find the effect of depression on life quality in the later stages of stroke which resulted that patients' managing strategies and depression score both have an effect on Emotional Health. It was also found that post stroke higher depression leads to lower quality of life.

Disability had negative impact on quality of life, disabled stroke patients had poor quality of life but some studies have demonstrated poor quality of life for those patients who were not disabled such studies focused more on other factors that have major impact on quality of life. Stroke causes significant decline in quality of life because of psychological thought in patient's mind such as feeling worthlessness, suicidal attempts, isolation, disability and lac of energy. In our research among 195 post stroke patients 135 were depressive and out of them 112 were with poor quality of life. Literature also narrates that depression slows down the process of rehabilitation and was found to negatively affect quality of life [4]. Literature showed that higher quality of life in developed countries after stroke is associated with non-dependent living better education, daily living, good socio economic status and better social support while lower quality of life has been associated with stress, depression and fatigue [2].

It has been reported that Post-stroke depression is has an independent association with disability and poor quality of life measured 1 year post stroke. The depression post stroke has strong adverse impacts on quality of life even after minor stroke [11].

van Mierlo et al. have emphasized the importance of psychological rehabilitation in early stages of stroke. They concluded that psychological factors put the patients at increased risk of a poor quality of life [12].

Rehabilitation along with focus on psychotherapy would increases the chances of improving quality of life; moreover pre psychotherapy sessions to post stroke patients will aid rehabilitation centers in monitoring and managing the patients well.

5. Conclusion

Depression and a poor quality of life are frequent post-stroke. Depression negatively affects the stroke specific quality of life of the patients and the more strongly effected domains of the quality of life are social roles, family roles, thinking and energy. This emphasizes the importance of psychotherapy along with physical rehabilitation for achieving better outcomes. Counselling sessions for caregivers are also important in order to improve the caregiving process and to minimize the negative impact it can have on the patients' recovery.

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