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Original Article

Mediation of "Rehabilitation Motivation" between Stroke Impact and Quality of Life Among Heart Stroke Patients

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Abstract

Background: Heart stroke is one of the ever burning worldwide concern due to its high impact on global burden of morbidity, mortality and disability.
Objective: The present study examined the mediating role of stroke rehabilitation motivation between stroke impact and stroke specific quality of life among heart stroke patients.
Study type settings & duration: This cross sectional study was conducted in different hospitals of Sargodha from February 2016 to March 2017.
Methodology: Cross-sectional research design was used for data collection from heart stroke patients (*N* = 200) using purposive sampling technique from different hospitals of Sargodha. The Stroke Impact Scale (Version-3), The Stroke Rehabilitation Motivation Scale, SS-QOL Scale were used for data collection.
Results: Findings revealed that stroke rehabilitation motivation mediated between stroke impact and quality of life of heart stroke patients (p <.001). Further it was also assessed that males showed higher rehabilitation motivation (p <.001) and quality of life (p <.01) as compared to females. But females scored high on stroke impact as compared to males (p <.001).
Conclusion: The study predicted the usefulness of rehabilitation motivation for stroke patients, which is the indication towards the fact that authorities need to take some serious concerns in improving quality of rehabilitation programs.
Key words: Stroke impact, quality of life, rehabilitation motivation, heart stroke.

Introduction

Heart stroke is one of the burning global concerns and is the significant cause of mortality and disability. Developed countries have decreased the ratio of heart stroke by adopting preventive measures; however, it is increasing in developing countries. Worldwide, annually almost 15 million people suffered from heart stroke.[1] Women as compared to men have high chances of developing ischemic heart disease, however males are at higher risk of developing coronary artery disease.[2] There is increased recognition about the disease and care management of the patient. However, the focus is only on physical outcome while health related quality of life is also very important.[3] Besides the direct impact of stroke, individual's characteristics such as patients' internal reactions towards illnesses, environmental factors (social and psychological support) are the basic factors affecting better quality of life.[4]

The stroke has direct and indirect impact on the quality of life of cardiac patients. Through in indirect impact, the patients' rehabilitation motivation plays a vital role in the determining the impact of stroke on patients life quality. Psychological factors plays important role in the prognosis of heart diseases. Acute psychological factors i.e. extreme stressful events, sudden bursts of anger, and excessive mood swings, can cause sudden cardiac death.[5] Cardiac rehabilitation programs played on important role in making improvements in the mental health related factors of cardiac patients.[6] WHO defined preventive measure as Cardiac

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Authors Contribution

SA, MNR & MAR conceptualized the project performed the data collection, Literature search, statistical analysis and drafting, revision & writing of manuscript.

Rehabilitation (CR). CR is known as set of activities that can positively influence in the management of cardiac disease. These activities improve the physical, mental and social conditions.[7] Patients' understanding about the disease, recognition of signs of disease and modifying behavior can significantly progress positive in all stages of disease.[8] Patients' perception about their cardiac conditions is effective in prevention of disease.[8,9] Patients with negative perception about the disease depicts more anxiety, physical disability and lower levels of activity.[10] Effective therapeutic relationships between patients and physicians, adherence to the treatment recommendations can increase the chances of improvement.[11] The present study assess the mediating role of stroke rehabilitation motivation between stroke impact and stroke specific quality of life in heart stroke patients.

Methodology

The present study was cross-sectional, conducted in different hospitals of Sargodha. The sample size was (*N* = 200) hospitalized stroke patients with age ranged from 24 to 80 years (*M* = 44.32, *SD* = 7.85). The patients were approached through purposive sampling. Informed consent was taken from the participants. The inclusion criteria was having heart stroke in last year. The exclusion criteria was "co-morbidity with any other major medical disease".

Permission was obtained from authorities before starting the study. Data was collected from patients fulfilling the inclusion criteria. Initially, the researcher provided necessary information regarding the study and then informed consent was obtained from the participants. The questionnaires consumed 20 to 30 minutes of the participants.

The Stroke Impact Scale (Version-3) developed by Jenkinson, Fitzpatrick, Crocker and Peters [12] consisted of 8 items which are rated by the cardiac patients on five-point Likert type scale. There is no reverse item. The scores on the scale are interpreted in terms of low and high scores. The Stroke Rehabilitation Motivation Scale was developed by White et al.[13] comprised of 28 items and 7 subscales. The scale is based on 5-point Likert type response pattern. Both reverse and positively worded items are included in the scale. High scores indicates high stroke rehabilitation motivation and low scores indicate low stroke rehabilitation motivation. SS-QOL Scale developed by Williams, Weinberger, Harris, and Clark [14] consisted of 49 items and 12 subscales. Responses were rated by the participants on five-point Likert type scale. The scale was translated into Urdu by the researchers. All items in the scale were positively worded as there was no reverse item. Low scores indicate low stroke impact and high scores indicate high stroke impact.

The mediating role of stroke rehabilitation motivation between stroke impact and health related quality of life was examined through PROCESS mediation analysis. Independent sample *t*-test was also applied for gender differences.

The ethical clearance was taken from Institutional Review Board of Advance Studies and Research, University of Lahore, Lahore.

Results

The demographic features of cardiac patients are presented in Table-1. Table-2 shows psychometric properties and correlations among study variables. Reliability analysis shows that alpha

Table 1: Frequency and percentage of cardiac patients.

Demographic variables	*f*	*%*
Gender		
Male	117	58.5
Female	83	41.5
Age		
Age group 24-40 years	15	7.5
Age group 41-65 years	92	46.0
Age group 66 & above years	93	46.5
Number of heart strokes		
1	167	83.5
2	27	13.5
3	6	3.0
Method of treatment		
Medicine	169	84.5
Operation	31	15.5
Perceived Effeteness of treatment		
Yes	179	89.5
No	21	10.5

Table 2: Psychometric properties of study variables among heart stroke patients.

Variables	*M*	*SD*	*α*	*Range*		*Skewness*	*Kurtosis*	*1*	*2*	*3*
				Potential	*Actual*					
Stroke Impact	26.5	6.7	.79	8-40	8-39	.60	.60	-	-.63*	-.57*
Stroke Rehabilitation Motivation	16.5	6.6	.84	7-35	7-35	1.10	.58		-	.89*
Health related Quality of Life	42.7	12.2	.85	17-77	17-77	.66	.31			-

*p <.001

Table 3: Process mediational model indicting direct and indirect effect of stroke impact on health related quality of life of heart stroke patients.

		Direct effect		*Indirect effect*	
Outcome	*Predictors*	*B*	*95%CI LL,UL*	*B*	*95%CI LL,UL*
Stroke rehabilitation motivation	Stroke impact	-.62***	-.72,-.51		
Health related quality of life	Stroke rehabilitation motivation	1.62***	1.46, 1.77	[a].59***	.51, .67
	Stroke impact	-.14*	.19, .11		

Note: [a]Sobel's Z = -10.05; ***p* < .01.

Table 4: Mean, standard deviation and *t*-values for male and female on stroke impact, rehabilitation motivation and quality of life among heart stroke patients.

	Female (n =83)		*Male (n = 117)*				*95% CI*		
Variables	*M*	*SD*	*M*	*SD*	*t (198)*	*p*	*LL*	*UL*	*Cohen's d*
Stroke impact	28.77	5.64	24.97	7.10	4.05	.000	5.65	1.95	.79
Stroke rehabilitation motivation	25.43	5.40	27.91	3.12	4.09	.000	1.28	3.67	.84
Health related quality of life	39.39	10.08	45.14	13.09	3.35	.001	2.37	9.13	.85

coefficients among heart stroke patients ranged from .79 to .85 for scales used in the present research shows satisfactory internal consistency. The values of skewness and kurtosis were less than 1 which is satisfactory. Results showed that stroke impact has significant negative correlation with stroke rehabilitation motivation and quality of life among heart stroke patients. Stroke rehabilitation motivation has significant positive correlation with quality of life.

Table-3 shows direct and indirect (through stroke rehabilitation motivation) effect of stroke impact on quality of life. The R^2 value of .40 indicates that stroke impact explained 40% variance in stroke rehabilitation motivation with F (1, 198) = 132.38, p <.001. The R^2 value of .78 indicates that stroke rehabilitation motivation and stroke impact explained 78% variance in quality of life with F (2,197) = 368.91, p <001. The Sobel's Z value of 10.05, p <.001 confirmed the mediating effect of stroke rehabilitation motivation between stroke impact and quality of life.

Table-4 showed that female patients significantly scored higher on stroke impact as compared to the male patients. The male patients significantly scored higher on rehabilitation motivation and quality of life.

Discussion

The first and second hypothesis "stroke impact is likely to negatively predict stroke specific quality of life and rehabilitation motivation among stroke patients" of present study were supported by the literature. Many studies shown decrease in quality of life in individuals with heart disease and chronic obstructive pulmonary disease.[14] A study showed that control of risk factors and regular medication are positive predictors of HRQOL in individuals with CVD.[15] Studies from the global and indigenous context confirmed that stroke has direct and severe impact on the quality of life of stroke patients.[16,17] According to research heart stroke causes excessive range of physical and cognitive infirmities than any other chronic disease. These disabilities have a significant impact on mental health of patients as various patients exhibit emotional responses to stroke that pose challenges during rehabilitation**.** The stroke patients also showed discontinuity in adherence to the treatment and being more reliant on care. Stroke survivors experience major psychological problems such as lack of control and sense of uncertainty. Thus the stroke has direct impact on the rehabilitation motivation of the stroke patients.[18]

Clinically, "low motivation" is considered as a common symptom of depression in stroke patients.[19] The third hypothesis "stroke rehabilitation motivation is likely to positively predict stroke specific quality of life among stroke patients" was supported by literature. Research in Pakistan has confirmed that stroke rehabilitation motivation is positively related to good quality of life in stroke patients.[20] According to WHO, cardiac rehabilitation is "the sum of activities required to influence the cause of the disease so that patients may regain normal place in the community".[7] Research clearly demonstrated that rehabilitation strategies can be effectively used for improving the quality of life of stroke patients.[21]

The fourth hypothesis "Stroke rehabilitation motivation is likely to mediate between stroke impact and stroke specific quality of life among stroke patients" is supported by literature. The

results revealed that stroke impact has negatively predicted the quality of life but stroke rehabilitation motivation has played a mediating role between quality of life and stroke impact, due to which there is improvement in quality of life among stroke patients having high level of rehabilitation motivation. This may be due to the motivation is enhanced by psychological support from health team and family care giver meanwhile life satisfaction were significantly related to patient's functioning in everyday life.[16]

The fifth hypothesis "Female will significantly score higher on stroke impact as compared to male stroke patients" of present study is also supported by literature. As studies have revealed that female acute ischemic stroke patients had a higher early case mortality rate than male patients. Thus, female patients generally had more severe strokes.[22] Furthermore studies revealed that women experience more strokes and are more likely to show negligence in seeking urgent treatment, which might be the result of delays in seeking treatment.[23] The sixth hypothesis "Male will significantly score higher on rehabilitation motivation as compared to female stroke patients" of present study is supported by literature. Studies have revealed that women are likely to recover less fully than men. Previous researches have suggested that women are more likely to be confronted with continuing demands in the home environment, and more likely to neglect health care needs.[24] The seventh hypothesis "Male will significantly score higher on stroke specific quality of life as compared to female stroke patients" of present study is supported by literature. Previous researches found lower rate of hospitalization in men, which suggest that women display more difficulty with emotional adjustment after cardiac stroke.It has also been observed that female have significantly poor health related quality of life and their copying ability is weaker than men.[25]

The present study supported the hypotheses related to the mediation of stroke rehabilitation motivation between impact of stroke on quality of life of stroke patients. Thus in the light of these findings from indigenous context, the stroke rehabilitation can be effectively used for better outcomes in the stroke patients, consistent with the global evidences.[26] Results of the study showed that female have significantly scored higher on stroke impact as compared to male stroke patients. Male have significantly scored higher on stroke rehabilitation motivation and stroke specific quality of life.

The unavailability of any funding source was the major problem in collecting data from different cities. Therefore the data collection was limited to the hospital situated in one city only. Due to time constrant and inaccessibility to the heart stroke patients, probability sampling techniques were not used.

Conflict of interest: None declared.

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