



## Psychotherapeutic Nursing Intervention Package For Depression, Anxiety And Emotional Resilience In Stroke Survivors- A Pilot Trial

<sup>1</sup>Betty Koshy and <sup>2</sup>Kritagna Singh Vaghela

<sup>1</sup>Parul Institute of Nursing, Parul University, Gujrat

<sup>2</sup>Department of Psychiatry, PIMSR

\*Email ID: - bettygeorge2912@gmail.com

### ABSTRACT

Stroke survivors are often subjected to anxiety and depression and other neuropsychiatric disorders. However, little is known about this spectrum of disorders post-stroke. Non-pharmacological interventions can be effective in managing the patients, with only handful of studies in Indian context the problem was addressed to be explored in detail. The pilot project was intended to establish the efficacy and study the feasibility of psychotherapeutic nursing intervention package and thereby standardizing the interventional package. 16 patients with post Stroke depression, anxiety and resilience were non-randomly assigned to experimental and control group. Experimental group received planned interventional package twice a week for 4 weeks. The participants were assessed at 3 different observation points during the course of study. Interview for Recruitment (A1), Pre-Test (A2), Post-Test(A3). The study results with PSD, PSA and Emotional Resilience with mean difference of 3.4, 8.5 and 32.75 respectively was found to be statistically significant at  $p < 0.05$  level. The relationship of depression with resilience and anxiety with resilience was found to be negative. **Conclusion:** This pilot program was found to be feasible and the package was found to be suitable thereby the standardization was established in treating the stroke survivors with depression, anxiety and improving resilience.

**Keywords:** - Psychotherapeutic Nursing Intervention Package, Stroke Survivors, Depression, Anxiety, Emotional Resilience

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### INTRODUCTION

Stroke is a unprecedented event that changes life of a person in unimaginable ways and survivors are left with incapacities and disability that often makes reintegration to former existence next to impossible. During the past three decades, Stroke has been the second leading cause of death and disability worldwide. Every year about 5.5 million people are dying due to stroke globally.<sup>[1]</sup> Though the road to recovery is a tough battle but perseverance, resilience and support can help survivors to conquer the combat. Survivors need not only medical and neurological attention but also psychiatric evaluation. Regular psychiatric evaluation, counselling may help the victims of stroke to bounce back and cope with the debilitating life event leading to early recovery, better functionality and improved life expectancy. Were we stand is far from reality- is the place where psychiatric aspect and emotional dimensions of patient is neglected in the health care settings and rehabilitation center. With less attention dedicated to psychiatric aspects the prevalence rate of post-stroke depression, anxiety is increasingly evermore. Post stroke depression and anxiety have a negative effect on functionality, recovery and independence. The need for psychosocial intervention tailored and targeted is redundant and if implemented at an early stage can help the stroke survivors in living the life with better mental health with a prospect of recovery, functionality and independence. Evidence suggests the need and importance of psychiatric evaluation but studies establishing the effectiveness of psychological interventions are limited and the studies done in Indian context or setting is handful.

### MATERIAL AND METHODS

#### Research Design

The study design as depicted in Fig.1 is non- randomized control group design. 8 participants were non-randomly assigned to either of the groups. The participants were assessed at 3 different observation points during the course of study. Interview for Recruitment (A1), Pre-Test (A2), Post-Test(A3). The Sampling design used for the study is non-probability purposive sampling.

## Participants

A total of 41 stroke survivors were interviewed out of which based on criteria of inclusion and exclusion 16 participants were selected and recruited. All patients were recruited from OPD and rehabilitation centers.

## Inclusion Criteria

1. Diagnosed cases of stroke will be included in the study
2. Patients in inpatient rehabilitation units or settings
3. Patients taking follow up services in outpatient setting
4. Patients with post stroke status of duration 3 weeks- 24 weeks
5. Stroke patients who are conscious
6. Patients with depression score >7 and <25 as measured by Hamilton Depression Rating Scale (HDRS) will be included in the study
7. Patients with anxiety score <25 as measured by Hamilton Anxiety Rating Scale (HAMS) will be included in the study.

## Exclusion Criteria

1. Patients with past psychiatric disease will be excluded from the study
2. Patients who are in psychotropic drugs will be excluded from the study
3. Patients with active suicidal ideation
4. Negative event in life within 6 months preceding the stroke
5. Patients who are not willing to participate will be excluded from the study
6. Patients with depression score >25 (severe depression) as measured by Hamilton Depression Rating Scale (HDRS) will be excluded from the study
7. Patients with Aphasia after stroke will be excluded from the study
8. Patients with GCS <10 will be excluded from the study

## Data Collection Instruments

The Data Collection Instrument as this study is intended to measure multivariate is divided into 4 sections Section-I Client Profile Sheet which is further divided into

- A. Socio-demographic Profile Sheet
- B. Clinical Profile

Section-II Hamilton Depression Rating Scale

Section-III Hamilton Anxiety Rating Scale

Section- IV Connor Davidson Resilience Scale.<sup>[2]</sup>

## Psychotherapeutic Nursing Intervention Package

Psychotherapeutic Nursing Intervention Package is a well-tailored bundled interventions which are clubbed together to give a combined effect for stroke survivors with depression, anxiety and emotional resilience. The package is well constructed and validated with the help of experts.

The package contains Cognitive Behavior Therapy, Problem Solving Therapy, Relaxation Training and Psychoeducation. The intervention is given twice a week for 4 weeks with each session of 50 to 60 minutes in length as mentioned in Table No. 2.

## Data Collection and Intervention Procedure

Over 4 weeks, patients assigned to experimental group received package for twice a week. The sessions started with interviewing the patient for establishing rapport, problem identification and case formulation. As illustrated in Table No.1 the very first session psychoeducation as an integral part and continuous process was delivered and the concerns were resolved. The second session began with goals which were mutually set and decided and progressed to plan of treatment with an outcome. The components and principles of problem-solving therapy was integrated. The next 3 sessions were all focused on identifying negative thoughts, cognitive restructuring and activity scheduling and monitoring. The techniques used was cognitive techniques and behavioral activation. This session ideally involved 3 sessions but, in some cases, based on the case may move up to 5. Next session included anxiety management in which the relaxation training programs were taught to the patient. Relapse prevention and end of treatment were intertwined and coupled together which indicates the culmination of planned intervention. Often to avoid dependency the patient is recalled, what he learned and what actions to be take if relapse occur, mutual set up of recovery plan which also leads to comprehension and acceptance of end of treatment. Post test was taken in 5<sup>th</sup> -6<sup>th</sup> week.

## RESULTS AND DISCUSSION

### Participants Demographics

Out of 16 samples 1 (6.2%) belonged to 50 to 65 years of age group, 7(43.8%) belonged to 65 to 80 years and 8 (50%) were patients of age group 80 years or more. In terms of gender distribution 11(68.8%) were

male and 5(31.2%) were female, educational qualification was included in the demography the distribution showed that 5(31.2%) were illiterate and 11(68.8%) were literate. As far as occupation of samples is concerned 8 (50%) were unemployed whereas other half 8 (50%) were (4) self-employed and (4) government employee which indicates that families might have faced financial turmoil post event.

#### **Clinical Profile**

Clinical profile was also assessed primarily which indicated that only 4 (25%) had no past medical history whereas over 12 (75%) had past medical history such as DM, HT which indicates latter being the predecessor.

Past surgical history was interviewed and it was found that over 11 (68.8%) survivors had no surgical history leaving 5(31.2%) with surgical history in the past. No Comorbidities were reported by the patient. The side affected in stroke was extracted from reports and it was found that 5 (31.2%) had lesion in the right side, 9 (56.3%) had lesion in the left side whereas 2(12.5%) had lesion on both sides. Insurance status of the study was interviewed were it was found that 11(68.8%) had no health insurance and only 5 (31.2%) had health insurance. No insurance coverage can increase the caregiver burden and also affects the health outcomes of the patient.

50 % of the samples had history of Pre-stroke hospitalization. In personal history 6(37.4%) patients reported that they actively smoke cigarettes, 7(43.8%) were alcoholics and 3 had habit of tobacco chewing that is an indication of bad habits which impairs health and explains the link to stroke.

#### **Distribution Of Pre-Test Level of Depression, Anxiety and Emotional Resilience Among Stroke Survivors**

As represented in Table No. 3, in experimental Group 6 (75%) samples had mild depression and 2 (25%) had moderate depression during pre-test. In control group 7 (87.5%) had mild depression whereas only 1 (12.5%) sample had moderate depression during pre-test.

Anxiety level was assessed during pre-test in experimental group which was found to be 7 (87.5%) as mild and 1(12.5) as severe. Control group pre-test results showed that 6 (75%) had mild anxiety whereas 2(25%) had moderate anxiety. Emotional resilience pre- test scores in experimental and control group were found to be low in all 8 (100%) stroke survivors.

#### **Effectiveness of psychotherapeutic nursing intervention package on post-stroke depression, anxiety and emotional resilience among stroke survivors (Experimental Group)**

As depicted in Table No.4 in experimental group depression scores in pre-test was found to be  $(11.25 \pm 3.615)$  which was reduced to  $(8.12 \pm 5.515)$  in post-test with mean difference of 3.13 with t-value of 3.416 was found to be statistically significant at  $p = 0.011^*$  ( $p < 0.05$ ).

Anxiety Scores in pre-test was found to be  $(16.25 \pm 4.464)$  which was decreased to  $(7.75 \pm 2.315)$  in post-test with mean difference of 8.5 with t-value of 10.05 was found to be statistically significant at  $p = 0.001$  ( $p < 0.05$ ).

Emotional Resilience in experimental group was found to be very low in pre-test  $(109.25 \pm 6.4775)$  which improved with intervention post-test and was reported to be  $(142.0 \pm 7.783)$  with a mean difference of 32.75 was found to be statistically significant with p value of 0.001 ( $p < 0.05$ )

The result clearly suggest that intervention is effective in the selected samples which establishes the efficacy of the package.

#### **Comparison of post-stroke depression, anxiety and emotional resilience among stroke survivors**

Post stroke depression, anxiety and emotional resilience was compared between both the groups and t-value was determined and as represented in Table No. 5 it clearly indicates that post stroke depression in both groups had marked difference of 5.50 which was found to be statistically significant at  $p = 0.040$  ( $p < 0.05$ ). Post-stroke anxiety when compared in both groups the post-test score had mean difference of 6.87 which was found to be statistically significant at  $p = 0.001$  ( $p < 0.05$ ). Post stroke resilience scores had mean difference of 35.62 on comparison which was found to be statistically significant at  $p = 0.001$  ( $p < 0.05$ ). The results clearly indicates that with intervention, experimental group underwent drastic change over study period in a expected path on the other hand control group took a negative turn were samples reported increased anxiety and depression scores post-test.

**Relationship of post-stroke depression and anxiety with emotional resilience** as depicted in Tab No. 6. The relationship was determined between depression and emotional resilience, anxiety and emotional resilience by Karl Pearson. Strong Negative correlation was found between depression and emotional resilience. Whereas weak negative correlation was found between anxiety and emotional resilience. The negative relationship can be interpreted greater the emotional resilience lesser will be depression and anxiety as it helps to overcome it. The emotional resilience is inversely proportional to the depression and anxiety.

In terms of prevalence of post-stroke depression and anxiety. Similar study supporting the findings of the study has been reported by Schöttke H, Giabbiconi CM with the aim to find prevalence and predictors of

post stroke depression and anxiety. 289 stroke patients were assessed for two periods: for post-stroke and retroactively for the period preceding stroke (lifetime). PSD prevalence was 31.1%, PSA prevalence was 20.4%. [3]

Emotional Resilience as a predictor of stroke recovery has been studied and similar findings have been reported by Lima RJ, Silva CRR, Costa TF, Madruga KMA, Pimenta CJL (2020). Cross-sectional study was done on 108 individuals with sequelae of stroke. The aim of the study was to investigate the relationship between resilience, functional capacity and social support of people with stroke sequelae. The results reported that resilience showed a positive and statistically significant correlation with functional capacity social support thereby highlighting the importance of resilience in stroke.[4]

In terms of effectiveness of psychotherapeutic nursing intervention package, the results as depicted in Table No. 4 clearly indicates the effectiveness which is found to be statistically significant. Similar study has been done by Jessica Ahrens et al systematic review and meta-analysis was done to evaluate the efficacy of cognitive behavioral therapy on anxiety and depression among the stroke population. Pooled analysis was conducted on depression and anxiety. CBT interventions showed large effects on reducing anxiety (SMD±SE: 1.01±0.32, p < .001) and depression (SMD±SE: 0.95±0.22, p < .000) symptoms. CBT interventions maintained anxiety (SDM±SE: 0.779 ± 0.348, p < .025) and depression (SDM±SE: 0.622 ± 0.285, p < .029) scores at 3-months follow-up. CBT was effective in reducing symptoms of depression and anxiety post stroke.[5]

Relationship of emotional resilience has been studied with depression in many studies. Similar findings has been reported by study conducted by Zhao L, Yang F, Sznajder KK, Zou C, Jia Y and Yang X (2021) The aim of the study was to explore whether resilience plays a mediating role in the relationship between sleep disturbance and PSD of stroke patients. A total of 353 stroke patients were enrolled in this study. Resilience was found to be negatively associated with PSD, and acted as a mediator between sleep disturbance and PSD (a \* b = 0.201, Ca 95% CI: 0.156~0.254). Resilience was found to have a mediating effect on the relationship between sleep disturbance and PSD, and could reduce the negative effect of sleep disturbance on the development of PSD.[6]

**Table No. 1 Steps of Planned Psychotherapeutic Intervention Package- Session Wise**

Steps	Components	Time Duration
I	<b>Beginning of Session</b> Checking the Mood and Emotions Setting of Agenda Reviewing Homework/TRS	10 Minutes
II	<b>Discussion &amp; Working on Agenda/ Problem</b> Collaborative discussion on how to approach problem Introducing the intervention paired with psychoeducation Rationale for introduction of intervention Implementing the planned intervention Assessment of agenda set Summary or Reflection by Patient Planning and discussing homework	35 to 40 Minutes
III	Feedback and termination of Session	5 to 10 Minutes

Session	Steps	Elements Of Package Involved
Session I	Clinical Interviewing and Case Conceptualization	Problem Solving Therapy, Psychoeducation
Session II	Goal Setting and Treatment Planning	Problem Solving Therapy
Session III, IV & V	Cognitive Restructuring, Activity Monitoring, Scheduling & Psychoeducation	Cognitive therapy & Behavioral Activation
Session VI	Anxiety Management Training & Psychoeducation	Relaxation Training, Problem Solving Therapy
Session VII	Relapse Prevention	Psychoeducation
Session VIII	End of Treatment	Psychoeducation

**Table No. 2 Structure of Each Session**

Table No. 3 Representing Distribution of Pre-Test and Post-Test Level of Depression, Anxiety and

Level of Depression	Experimental group				Control group			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Normal	0	0	6	75	0	0	0	0
Mild	6	75	2	25	7	87.5	7	87.5
Moderate	2	25	0	0	1	12.5	1	12.5
Severe	0	0	0	0	0	0	0	0
Level of Anxiety	Experimental Group				Control Group			
	Pre-Test		Post-test		Pre-test		Post-test	
	F	%	F	%	F	%	F	%
Mild	7	87.5	8	100	6	75	7	87.5
Moderate	0	0	0	0	2	25	1	12.5
Severe	1	12.5	0	0	0	0	0	0
Level of Emotional Resilience	Experimental Group				Control Group			
	Pre-Test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Low	8	100	0	0	8	100	8	100
Moderate	0	0	4	50	0	0	0	0
High	0	0	4	50	0	0	0	0

## Emotional Resilience Among Stroke Survivors

Table No. 4 Depicting Effectiveness of Psychotherapeutic Nursing Intervention Package

	Pre-test Mean $\pm$ SD	Post-test Mean $\pm$ SD	Mean difference	t value	df	p value
Depression	11.25 $\pm$ 3.615	8.12 $\pm$ 5.515	3.13	3.416	7	<b>0.011*</b>
Anxiety	16.25 $\pm$ 4.464	7.75 $\pm$ 2.315	8.50	10.05	7	<b>0.001*</b>
Emotional resilience	109.25 $\pm$ 6.4775	142.0 $\pm$ 7.783	32.75	11.85	7	<b>0.001*</b>

Table No. 5 Comparison of Post-Stroke Depression, Anxiety and Emotional Resilience Among Stroke Survivors Between Experimental And Control Group.

Group	Correlation	Emotional Resilience	
		Pre-test	Post-test
Experimental Group	Depression	(r = -0.369, p = 0.368 <sup>NS</sup> )	(r = -0.709, p = 0.049 <sup>NS</sup> )
	Anxiety	(r = -0.383, p = 0.349 <sup>NS</sup> )	(r = -0.230, p = 0.584 <sup>NS</sup> )
Control Group	Depression	(r = -0.343, p = 0.405 <sup>NS</sup> )	(r = -0.254, p = 0.544 <sup>NS</sup> )
	Anxiety	(r = -0.442, p = 0.273 <sup>NS</sup> )	(r = -0.296, p = 0.477 <sup>NS</sup> )

Comparison Post-test	Experimental group Mean $\pm$ SD	Control group Mean $\pm$ SD	Mean difference	t value	df	p value
Depression	8.12 $\pm$ 5.515	13.62 $\pm$ 4.069	5.50	2.270	14	<b>0.040*</b>
Anxiety	7.75 $\pm$ 2.315	14.62 $\pm$ 2.774	6.87	5.382	14	<b>0.001*</b>
Emotional Resilience	142.0 $\pm$ 7.783	106.38 $\pm$ 10.43	35.62	7.742	14	<b>0.001*</b>

Table No. 6 Relationship between Depression and Anxiety with Emotional Resilience

## CONCLUSION

With the study findings it can be concluded that psychotherapeutic intervention package as a non-pharmacological intervention can be of incremental value in post stroke depression and anxiety and improving emotional resilience which is a strong predictor of functionality and recovery. With study results the package appears to benefit stroke survivors with depression and anxiety of experimental group beyond what patients of control group experience with standard or usual treatment. The study is a pilot trial of intervention and testing of tool and is limited to small sample size, but with the findings the pilot project was able to yield expected results thereby establishing the efficacy of planned intervention. Client's suggestions as to how approach can be made more user friendly was taken into consideration and needed changes will be incorporated in the main study. Future studies with large sample size will help to unmask the differences in the treatment effects that may be concealed with small sample sizes.

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