A Effectiveness of Multi-Intervention Programme Combining Benson's Relaxation Therapy and Counseling on Perceived Stress among Stroke Victims

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Abstract

> Background:

The global incidence of stroke reached 11.9 million cases in 2021, a 70% rise since 1990, with India contributing 1.25 million new cases, or 10% of the global burden. High perceived stress levels among stroke survivors negatively impact rehabilitation outcomes and quality of life.

> Methods:

His randomized controlled trial employed a quantitative pre-test post-test control group design. Conducted in the Thrissur District, Kerala, the study enrolled 60 stroke patients, selected via simple random sampling. A multi-intervention program, including Benson's relaxation therapy and counseling, was administered to the experimental group. Perceived stress levels were reassessed after one month.

> Results:

After one month, the experimental group demonstrated a 78.77% reduction in perceived stress (pre-test mean score = 70.40, post-test mean score = 14.93), compared to the control group, which showed no significant change. Statistical analysis confirmed a significant decrease in perceived stress across time points in the experimental group (p<0.001) but not in the control group (p=0.700).

> Conclusion:

The multi-intervention program significantly reduced perceived stress among stroke patients, underscoring the value of combining physical and psychological rehabilitation strategies for improved recovery outcomes.

Keywords: Stroke Victims, Perceived Stress, Multi-intervention Program, Benson's Relaxation Therapy, Counseling.

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I. INTRODUCTION

Globally, the number of people affected by strokes rose to 11.9 million in 2021, marking a 70 per cent increase since 1990. With 1.25 million new stroke cases, India made up 10 per cent of the global burden in 2021.¹ Stroke survivors frequently endure high levels of perceived stress, adversely affecting their rehabilitation and quality of life. Stroke can be a life-changing event, with survivors frequently experiencing some level of disability, reduced independence, and an abrupt lifestyle change. Not surprisingly, many stroke survivors report elevated levels of stress during the recovery process, which has been associated with worse outcomes.² Managing stress is critical for stroke victims as chronic stress may hinder rehabilitation, contribute to poorer outcomes, and increase the risk of recurrent strokes. Psychological effects of stroke include depression, anxiety, post-traumatic stress disorder (PTSD), mania, psychosis, irritability, and apathy, among other emotional and behavioral conditions.³

Several interventions have been explored to alleviate perceived stress among stroke victims, ranging from physical rehabilitation to psychological and social support. However, an integrated approach combining relaxation techniques and counseling has shown promise in addressing both the physical and mental health aspects of post-stroke recovery. Benson's Relaxation Therapy, a well-known relaxation technique, helps in reducing stress by promoting a state of calmness through deep breathing and mental focus. Counseling, on the other hand, provides emotional support,

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helping patients cope with the psychological impact of stroke by addressing feelings of fear, anxiety, and helplessness.

> Need for the Study

Psychological problems, such as depression, anxiety, frustration, and anger, are common post-stroke disabilities . stroke victims go through different stages of stress and depression and feel that they have become a burden in the family .From the onset of stroke recovery, even during hospitalization, the stroke survivor's environment changes in potentially stressful ways.⁴ Effects of stroke can be as fundamental as limited mobility and the inability to perform activities of daily living (ADLs), and as transcendental as decreased participation in leisure activities ⁵,⁶ and limitations on meaningful life roles.⁶

For many stroke survivors, recovery is accompanied by feelings of depression and irritability.⁴,⁷ Loss of autonomy caused by even a minor stroke may lead the stroke survivor to feel that he or she is a burden on the caregiver. ⁸ External buffers, such as social support and family dynamics have consistently been found to predict the nature of recovery.⁹ The stroke survivor-caregiver relationship, sometimes referred to as connectedness, coherence, or mutuality, is one aspect of family function that seems to be predictive of stroke survivor astress and the degree of recovery experienced.¹⁰

> Problem statement

We carried out a study to assess the effectiveness of a multi-intervention programmme combining Benson's Relaxation Therapy and Counseling on Perceived Stress Among Stroke Victims in Meloor Panchayat.

➢ Objective

- To evaluate the perceived stress level of stroke victims before and after a multi-intervention programme in Meloor panchayat.
- To compare the SPSS scores from the pretest and posttest
- To find out the association between SSPSS and selected demographic variables

II. MATERIALS AND METHODS

We conducted a randomized controlled study among stroke patients in Meloor Gramapanchayath, Thrissur district Kerala. This study employed a quantitative research approach to evaluate the effectiveness of a multi-intervention program on perceived stress among stroke victims. The study followed an experimental, pre-test post-test control group design. The sample included 60 stroke patients, with 30 participants each in the experimental group and the control group. Samples were selected through a simple random sampling method .The multi-intervention includes Benson's relaxation therapy and counseling.

➤ Inclusion Criteria

- Patients who are diagnosed with stroke
- Patients above 18 years with stroke

• Stroke victims with a disability level of 2 to 4 on the modified Rankin scale, indicating slight to moderate disability.

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- Stroke victims who were willing to participate in the study and could attend all intervention sessions.
- ➢ Exclusion Criteria
- Stroke victims who have recovered and can live independently without assistance.
- Stroke victims and their caregivers who were unable to attend any intervention sessions
- Stroke victims who could not follow instructions due to cognitive impairments or communication barriers.
- Stroke victims who were not willing to participate in the study or complete the required assessments.

> Data Collection Procedure

Data were gathered using a self-structured questionnaire and SSPSS. The first section of the questionnaire was designed to gather data regarding a range of sociodemographic factors including Age, Gender, Marital Status, Education, Previous occupational status, Religion, Type of Family, Monthly Income of the family, Type of Stroke, Family History of Stroke, Previous history of Stroke, Hemiparesis, Aphasia, Any other physical problems, Duration after the current episode of stroke, Modified ranking scale score.

The second section of the questionnaire comprised SSPSS comprising 27 statements. The tools were given to nine experts, and the study's objective was to establish the validity of the tool's content. The experts were from the field of nursing and the medical research department. The score's reliability obtained was 0.960 using Cronbach's Alpha method. Hence, the tool was reliable for proceeding with the data collection. The SSPSS score ranged from low ,moderate to high. Sample size was calaculated using the similar studies.

A list stroke of patients was prepared from Meloor Gramapanchayath with the help of ASHA workers. Patients were visited in their home and were assessed by modified rankin scale in order to evaluate the disability level. The patients who are in the 2-4 disability level and who fullfill the inclusion criteria was included in the study. 60 patients were selected by Simple random sampling method. 30 patients were randomly assigned to experimental and control group. During the first week stroke victims perceived stress was assessed by demographic questionnaire and SSPSS. All the 60 patients were assessed by using the scale. 30 patients in the experimental group were given Bensons relaxation therapy (for 30 minutes in the morning and 30 minutes in the evening) and counselling for 30 minutes. The care givers were taught Bensons relaxation therapy and they were instructed to give Benson's relaxation technique to the stroke patients for two months every day. After 1st month subjects were assessed for perceived stress using SSPSS. The control group received standard post-stroke care without additional interventions.

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This study was approved by the ethics committee of of Amala College Of Nursing - Approval No. 04/EC/23/AIMS-03.The investigator obtained the necessary permission from the concerned authorities and informed consent was obtained from all participants

III. RESULTS

The study was categorized as follows.

> Demographic Information

In the experimental group, 43.33% of participants were aged 48-57 years, while 56.67% were aged 58 and above. In the control group, 30% were aged 48-57, and 70% were 58 and above. The experimental group had a higher proportion of males (63.33%) compared to the control group (53.33%).Nearly all participants in both groups were married, with 93.33% in the experimental group and 100% in the control group. The most common education level in the experimental group was primary school (26.67%), while the control group had the highest percentage of high school graduates (36.67%). Unemployment was more prevalent in the experimental group (30%) than in the control group (36.67%). Christianity was the predominant religion in both groups, comprising 66.67% of the experimental group and 56.67% of the control group. Nuclear families were most common in the experimental group (93.33%), whereas 40% of the control group belonged to three-generation families. Most participants in both groups had an income below 5,000, with 53.33% in the experimental group and 60% in the control group. Haemorrhagic stroke was more frequent in the control group (83.33%) than in the experimental group (53.33%). A majority in both groups had no family history of stroke, with 66.67% in the experimental and 73.33% in the control group. A higher percentage of the experimental group (30%) reported a previous stroke history compared to the control group (6.67%). Hemiparesis was present in all experimental participants (100%) and most in the control group (96.67%). Aphasia was similar across groups, with 13.33% in the experimental and 16.67% in the control.50% of participants in both groups reported additional physical issues. Most participants in both groups were over six months post-stroke. 73.33% of experimental participants and 53.33% of control participants had a disability level of 4 (Figure 1 and 2)

➢ Pre- Test and Post- Test SSPSS Score

At the pretest, the majority (67%) of participants in the experimental group were at a moderate stress level, with 33% experiencing high stress. After the intervention, all participants in the experimental group moved to the low-stress category (100% in the post-test), indicating a complete reduction in moderate and high stress levels. At the pretest, the majority (93%) of participants in the control group were

at a moderate stress level, with 3% experiencing high stress. After the intervention In the control group, there was little change, with most participants remaining in the moderate stress category(90%) and 10% is in the high stress category.

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In the experimental group, the mean Stroke Specific Perceived Stress Scale (SSPSS) score significantly decreased from the pre-test (Mean = 70.40, SD = 5.61) to the post-test (Mean = 14.93, SD = 3.58). The F-value for the within-group comparison in the experimental group was 3434.987, with a p-value of <0.001, indicating a statistically significant reduction in stress levels after the intervention.

In the control group, there was no significant change in SSPSS scores between the pre-test (Mean = 69.03, SD = 3.33) and post-test (Mean = 69.40, SD = 3.42). The F-value for the within-group comparison in the control group was 0.150, with a p-value of 0.700, indicating no significant difference in perceived stress levels over time. The between-group comparison of SSPSS scores yielded an F-value of 1740.27 with a p-value of <0.001, suggesting a significant difference in stress reduction between the experimental and control groups. This indicates that the intervention had a substantial effect on reducing stress levels in the experimental group compared to the control group.

It is observed that there is a significant decrease in the score across different time points in the experimental group (p<0.001) but not in the control group (p=0.700).Also, it was observed from the between group's comparison that there is a significant difference in the SSPSS between experimental group and control group (p<0.001). Significant reductions in perceived stress were observed in the experimental group compared to the control group at all time points. The intervention led to a 78.77% reduction in perceived stress in the experimental group, which is statistically significant. The control group showed a 0.54% increase in perceived stress, indicating no significant change. (Table 1 and Figure 3,4)

Association Between SSPSS and Selected Demographic Variables

It shows that there is significant association between SSPSS scores and previous history of stroke .There is no significant association with other demographic variables (Table 2)

> Descriptive Statistics

• Frequency Distribution of Demographic Variables

The descriptive statistics (frequency and percentage) of demographic variables are given below for both experimental and control groups.

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Fig 1 Graphical Representation of Frequency and Percentage Distribution of Samples According to Their Age



Fig 2 Graphical Representation of Frequency and Percentage Distribution of Samples According to Their Gender

• Effect of Multi-Intervention Programme On SSPSS

A two-way repeated measure mixed ANOVA is performed to check is there any significance deference in the SSPSS across different time points as well as between experimental and control group.

Groups	Time points	SSPSS		Within groups Compariso	on Between groups comparison	
		Mean	SD	F value (p value)	F value (p value)	
Experimental	Pre test	70.40	5.61	3434.987		
group [n=30]	Post test	14.93	3.58	(<0.001*)	1740.27	
Control group	Pre test	69.03	3.33	0.150	(<0.001*)	
[n=30]	Post test	69.40	3.42	(0.700)		
*significant (p<0.05)						

Fable 1	Com	parison	between	Pretest	and H	Post '	Test	SSPSS	in	Ex	perimental	and	Control	Grou	p
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Fig 3 Comparison between Pretest and Post Test SSPSS in Experimental and Control Group



Fig 4 Profile Plot Showing the Effect of Interventions on SSPS Score

• Association of SSPSS with Demographic Variables

Mann Whitney U test/Kruskal Wallis are performed check is there any significant association of outcome variables with various demographic variables as data violates normality details given below.

Association between Demographic			
Variables	U /H Test Value	P Value	Association
Age	U=350	0.295	Not significant
Gender	U=397	0.542	Not significant
Marital status	H=3.497	0.174	Not significant
Education	H=8.636	0.125	Not significant
Previous Occupation	H=3.254	0.776	Not significant
Religion	U=507	0.092	Not significant

Table 2 Association of SSPSS with Demographic Variables n = 60

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Not significant

Not significant

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		1	6 5 1
Type of family	H=1.513	0.469	Not significant
Monthly income of the family	H=1.417	0.701	Not significant
Type of stroke	U=447.50	0.355	Not significant
Family history of stroke	U=349.50	0.644	Not significant
Previous history of stroke	U=162.50	0.040*	Significant
Hemiparesis	U=28.50	0.954	Not significant
Aphasia	U=206.50	0.632	Not significant
Any other physical problems	U=468	0.789	Not significant

*Significant (p<0.05)

H=7.032

U=16.00

IV. DISCUSSION

Comorbidities

Duration after the current episode of stroke

> The Objectives, Hypothesis, and Results Analyze The Findings of the Study

The first objective was to evaluate the perceived stress level of stroke victims before and after a multi-intervention programme in Meloor panchayat.

A study was conducted by Ghauri,. et al assessed the impact of perceived level of stress among post stroke patients . Out of 100 patients, 68 were female and 32 male with mean age of 65.29+3.45 years. ¹¹ In this study ,in the experimental group, 43.33% of participants were aged 48-57 years, while 56.67% were aged 58 and above. In the control group, 30% were aged 48-57, and 70% were 58 and above. The experimental group had a higher proportion of males (63.33%) compared to the control group (53.33%).

> The Second Objective was to Compare the SSPSS Scores from the Pretest and Posttest

It is observed that there is a significant decrease in the score across different time points in the experimental group (p<0.001) but not in the control group (p=0.700). Also, it was observed from the between group's comparison that there is a significant difference in the SSPSS between experimental group and control group (p<0.001). Significant reductions in perceived stress were observed in the experimental group compared to the control group at all time points. The intervention led to a 78.77% reduction in perceived stress in the experimental group, which is statistically significant. The control group showed a 0.54% increase in perceived stress, indicating no significant change. A similar study by Dwi Mulianda et al. aimed to analyze the effects of relaxation response on the physiologic responses with AIS. The results showed any significant differences of physiological responses between intervention dan control groups. The intervention group showed better values than the control group with p=0.001.¹²

> The Third Objective was Identifying a Significant Association between SSPSS and Selected Demographic Variables

This study shows that there is significant association between SSPSS scores and previous history of stroke .There is no significant association with other demographic variables. A similar study by lower quality of life, worse drug compliance, worse functional independence, and more severe mental disorders were significantly associated with increased psychological stress symptoms.¹³

➢ Recommendations

0.426

0.434

Based on the study's findings, the following recommendations are suggested for further research:.

- A similar study can be conducted on a larger sample to generalize findings.
- Future research should explore the long-term effects of such interventions

> Limitations

- This study is limited to selected panchayath in Thrissur district.
- Results could not be generalized due to the small sample size and short duration.

V. CONCLUSION

This study demonstrates that a multi-intervention programme can significantly reduce perceived stress in stroke victims. Given the growing recognition of the psychological factors influencing stroke recovery, integrating stress management techniques into standard rehabilitation programs may offer substantial benefits. The findings of this study suggest that a multi-intervention programme combining Benson's relaxation therapy and counseling can effectively reduce perceived stress in stroke survivors. Relaxation techniques, which focus on eliciting the relaxation response, are known to modulate stress by lowering sympathetic nervous system activity and promoting psychological well-being. Counseling further supports emotional adjustment and coping, particularly in stroke survivors who often face significant psychological burdens.

The results align with previous studies that have emphasized the role of stress management in stroke rehabilitation. Moreover, the involvement of caregivers in the intervention appears to enhance its efficacy, as they play a critical role in the patient's recovery journey

This study shows the strong link between perceived stress and emotional well-being in post-stroke patients. However, it goes a step further by demonstrating the effectiveness of intervention strategies, suggesting that targeted stress management may be a promising approach to preventing or reducing depression in this population.

> Disclosure

The authors have no financial conflicts of interest.

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REFERENCES

- Feigin, Valery L et al Global, regional, and national burden of stroke and its risk factors, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. The Lancet Neurology, Volume 23, Issue 10, 973 – 1003
- [2] Hinwood M, Ilicic M, Gyawali P, Coupland K, Kluge MG, Smith A, Bowden S, Nilsson M, Walker FR. Psychological Stress Management and Stress Reduction Strategies for Stroke Survivors: A Scoping Review. Ann Behav Med. 2023 Feb 4;57(2):111-130. doi: 10.1093/abm/kaac002. PMID: 35689664; PMCID: PMC9899067.
- [3] Robinson, R. G., & Jorge, R. E. (2016, March 1). Poststroke depression: A review. The American Journal of Psychiatry, 173(3), 221–231.
 10.1176/appi.ajp.2015.15030363 [DOI] [PubMed] [Google Scholar]
- [4] Hafsteinsdóttir TB, Grypdonck M. Being a stroke patient: a review of the literature. J Adv Nurs. 1997;26(3):580–588. [PubMed] [Google Scholar]
- [5] Clark MS, Smith DS. Psychological correlates of outcome following rehabilitation from stroke. Clin Rehabil. 1999;13(2):129–40. [PubMed] [Google Scholar]
- [6] Gillen G. A comparison of situational and dispositional coping after a stroke. Occup Ther Ment Health. 2006;22(2):31–59. [Google Scholar]
- [7] Gustafson Y, Nilsson I, Mattsson M, Aström M, Bucht
 G. Epidemiology and treatment of post-stroke depression. Drugs Aging. 1995;7(4):298–309. [PubMed] [Google Scholar]
- [8] Hanger HC, Fogarty B, Wilkinson TJ, Sainsbury R. Stroke patients' views on stroke outcomes: death versus disability. Clin Rehabil. 2000;14(4):417– 424. [PubMed] [Google Scholar]
- [9] Glass TA, Matchar DB, Belyea M, Feussner JR. Impact of social support on outcome in first stroke. Stroke. 1993;24(1):64–70. [PubMed] [Google Scholar]
- [10] Bhogal SK, Teasell RW, Foley NC, Speechley MR. Community reintegration after stroke. Top Stroke Rehabil. 2003;10(2):107–129. [PubMed] [Google Scholar]
- [11] Ghauri, M. W., Hafeez, M., Raza, S., Ahmad, H. I., & Salam, A. (2021). Impact of perceived level of stress among post-stroke patients. *Rawal Medical Journal*, 46(3), 644-647
- [12] Mulianda D, Pudjonarko D, Kusuma H. Effects of Benson's Relaxation Response on Physiological Responses in Patients with Acute Ischemic Stroke in Several Regional Hospitals in Semarang. In: Suhartini S, KartikaSari R, Yulianti NR, Nuraeni A, Kusuma H, Kusumawati FT, Riani S, Larasati AD, editors. Nurse as a Leader to Enhance the Societies in Continuum of Health Outcomes; A Voice to Lead - Health is a Human Right. Semarang: Indonesian National Nurse Association, Central Java Province; 2022. p. [38]. ISBN 978-602-52081-0-2

[13] Zhang S, Yuan Y, Zhuang W, Xiong T, Xu Y, Zhang J, Tao C, Liang J, Wang Y. Contributing factors and induced outcomes of psychological stress response in stroke survivors: A systematic review. *Front Neurol.* 2022;13:843055. doi: 10.3389/fneur.2022.843055. Available from: https://www.frontiersin.org/journals/neurology/article

https://www.frontiersin.org/journals/neurology/article s/10.3389/fneur.2022.843055.)

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