

Effect of Nursing Intervention on Stress, Coping And Burden on Care Givers of Critically Ill Traumatic Brain Injury Patients

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Abstract- Admission to the Critical care unit is a stressful and difficult event experienced by patients and family members. Seriously ill patients require several complex interventions. Patients with severe brain injury (TBI) require critical care with physical, functional, psychological support depending on the risk of injury. Admission to the Critical Care Unit is an unexpected crisis for caregivers. The burden and stress crises in caregivers in the ICU are unclear. Therefore, the goal of the current study is to assess the effect of nursing intervention on stress, coping and burden on care givers of critically ill traumatic brain injury (TBI) patients in the emergency critical care unit while in the hospital.

Methods: The research approach adopted for the study was cross over design. The selection of subject was done by simple random sampling method by using Tippett's random table numbers was adopted to assign the subjects to experimental and control group and sample consists of 60 care givers who met the inclusion criteria for the study constitutes the sample out of which 30 subjects allocated to experimental group and 30 to control group in PESIMR at Kuppam, Andhrapradesh. The data was collected by administering questionnaires on stress, coping and burden before and after administering the nursing intervention package of six sessions to the experimental group. The validity and reliability of tool was obtained. The tool was administered to the care givers of critically ill TBI patients in the emergency critical care unit. The collected data were analysed by using descriptive and inferential statistics in terms of Frequencies, Percentage distribution and chi-square test and independent 't' test.

Results: Majority of the caregivers both in experimental and control group were 31-40 old, were male, married, belonging to Hindu religion, had primary education, work profile of private employment, living in nuclear family and earn 3000-5000 per month. There was a statistical significance was noted in independent t test between post-test mean scores of experimental and control group. It was found that the effectiveness of nursing intervention on stress, coping and burden in experimental group was statistically significant

when compared to that of the control group. There were no statistical association was found in chi-square analysis between the socio demographic variables with the pre-test scores of stress, coping and burden on the caregivers of traumatic brain injury patients hospitalized in critical care units.

Conclusion: Caregivers of traumatic brain injury patients hospitalized in critical care units face increased stress and burden and making themselves unable to cope up with the challenges faced during care giving. This nursing intervention package helped those caregivers to reduce the stress and burden and helped them to enhance coping skills effectively and function in society as normal as possible.

Keywords: Stress, Coping, Burden, Care givers, Traumatic Brain Injury, Nursing Intervention.

I. INTRODUCTION

“The greatest weapon against stress is our ability to choose one thought over another “

Traumatic brain injury (TBI) is a common multifaceted injury that occurs when an external force causes brain damage, a fall, a motor-vehicle accident, a gunshot wound to the head, an attack or another form of sport injured.

Nationally, 5.3 million Americans live with chronic disability from TBI. According to the Centres for Disease Control, 1.7 million people manage TBI each year. Researchers estimate that as a result of managing TBI, 3.2 million Americans need long-term and lifelong support to manage daily living activities. It is estimated that nearly 1.5 to 2 million persons are injured and 1 million succumb to death every year in India. According to the Ministry of Road Transport of India (2007), there were 1.4 lakh road accidents in 2007, killing 40,612 people and injuring 1.5 lakh. People with TBI often rely on caregivers for long-term and lifelong support.

Admission to the Critical care unit is a stressful and difficult event experienced by patients and family members. Seriously ill patients require several complex interventions. Patients with severe traumatic brain injury (TBI) require critical care with physical, functional, psychological support depending on the risk of injury. Traumatic brain injury not only affects the patient but also family members during the patient's stay in the critical care unit. In critical care unit increases the caregiver's responsibility in providing daily care, treatment and rehabilitation of patients with stress and burden.

The caregiver may experience fatigue and loneliness as a result of the caregiver's challenges and responsibilities with TBI, especially if they do not receive adequate support as they need support education and regular rest. Furthermore, the unpredictability of TBI does not take into account how long the caregiver can play and how long the patient is alive. Caregivers feel that their role is misleading and leads to stress. It affects the whole family, including the person with TBI.

The caregiver's well-being affects both his ability and his willingness to care for the injured person. Thereby affecting the overall quality of life of TBI and other family members. Therefore, caregivers with better health may have some protective effects on the caregiver's health. Parts of the intervention program will help caregivers in problem-solving strategies to overcome difficulties. An important factor appears to be to reduce the stress, coping and burden on the caregiver of TBI patients.

II. REVIEW OF LITERATURE

Literature related to stress, coping and burden on care givers of critically ill traumatic brain injury patients:

Thiruchengodu Raju Kanmani. et.al (2019) undertook a detailed study to assess the Burden and Psychological Distress of Intensive Care Unit Caregivers of Traumatic Brain Injury Patients. A total of 60 caregivers were recruited by using purposive sampling method. A family interview program was conducted for depression, anxiety, and stress scale (DAS-21). The study results showed that male caregivers (75%) and female caregivers (25%) participated in the study. Most of the TBI survivors who were admitted to the ICU sustained serious injuries. Average scores showed that caregivers experienced financial burden (6.28 severe 2.36), severe depression (12.15 84 4.84) and moderate anxiety (12.85 ± 5.20). Independent T-tests showed a significant difference in the care burden between men and women in the ICU. Overall, caregivers experienced high family burden and severe trauma in the ICU, the results of the study cited to assess stress and

family burden of caregivers in the ICU and provide timely psychosocial interventions.

N Kusuma.et al (2015) performed a descriptive study to assess the level of stress on care givers of critically ill traumatic brain injury patients hospitalized in critical care units at NIMHANS. Descriptive research design was used for the study. Data were collected from 100 caregivers selected by a simple random sample over a three-month period. Percentage pressure questionnaire (Levenstein et al. 1993) was used to gather information. The results showed that the average score of stress was 115.46 and 4.319. Significant relationship between age and marital status with stress scores statistically significant associations suggest that those variables influence stress.

MandiBroodryk, Chrisma Pretorius (2015) conducted a study to evaluate the Coping and Health Problems of Caregivers of Survivors with Traumatic Brain Injury. Eighty-five dyads of survivors with traumatic brain injury and their caregivers were included. The tools used for data collection were the Coping and Adaptation Processing Scale - a 27-item Thai version of the short form, a health issues questionnaire for caregivers and a disability rating scale for survivors. The study results showed that no statistical differences were found between coping and health problems in caregivers. Health problems that caregivers often report are headaches on the day of discharge and no health problems occur even after one month of care. Caregiver disability level and marital status are associated with negatively with coping. Caregivers were able to manage the difficulties in caring for survivors at home with fewer health problems. Married caregivers are more likely to handle this burden better than other caregivers.

III. STATEMENT OF THE PROBLEM

A Study To Assess The Effect Of Nursing Intervention On Stress, Coping And Burden On Care Givers Of Critically Ill Traumatic Brain Injury Patients Hospitalized In Critical Care Units At Pesimr, Andhrapradesh.

IV. OBJECTIVES

- To assess the pre-test scores of stress, coping and burden in the caregivers of traumatic brain injury patients in the control and experimental group.
- To compare the pre and post-test scores between experimental and control groups to find out the effectiveness of nursing intervention.
- To investigate the association between the socio demographic variables with the pre-test scores of stress,

coping and burden on the caregivers of traumatic brain injury patients hospitalized in critical care units.

V. MATERIALS AND METHODS

Research design: A crossover design was adopted for this study.

Setting of the study: The study was conducted in PESIMR Hospital, Kuppam, Andhra Pradesh.

Sample: Care givers of critically ill TBI patients in the emergency critical care unit at PESIMR Hospital, Kuppam, Andhra Pradesh.

Sample size: The total sample size was 60, out of which, 30 subjects allocated to experimental group and 30 to control group.

Sampling technique: Simple Random sampling method by using Tippet's random table numbers was adopted to assign the subjects to experimental and control group.

Tools of Data Collection: This study was conducted by using Socio-demographic data, Perceived stress questionnaire, coping style questionnaire, Zarit burden interview structured questionnaire to assess the stress, coping and burden on care givers of traumatic brain injury patient. The nursing intervention package consists of 5 components. First component educates on traumatic brain injury, its signs and symptoms, adverse effects on patient and the families and importance of care giver's role. Second component educates on concept of stress, its signs and symptoms, warning signs of care giver's stress, methods of handling stressors and stress management strategies. Third component educates on concept of coping, its categories and its components. Fourth component educates on concept of burden, its indicators and management. Fifth component educates on various behavioural approaches and coping styles. The nursing intervention package was provided in six session's group wise each group consisted of 5 subjects.

VI. RESULTS

Table: 1 Frequency & percentage distribution of selected demographic variable:

S. No	Demographic variables	Experimental Group (n=30)		Control Group (n=30)	
		Frequency	%	Frequency	%
1	Age (years)				
	20-30 years	6	20	8	27
	31-40 years	16	53	13	43
	41-50 years	8	27	9	30
2	Gender				
	Male	19	63	17	57
	Female	11	37	13	43
3	Marital status				
	Married	23	77	20	67
	Unmarried	7	23	10	33
	Widowed	0	0	0	0
	Divorced	0	0	0	0
	Separated	0	0	0	0
4	Religion				
	Hindu	17	57	20	67
	Christian	6	20	5	16.5
	Muslim	7	23	5	16.5
	Others	0	0	0	0
5	Education				
	Illiterate	3	10	5	17
	Primary	11	36	14	47
	Secondary	8	27	6	20
	Collegiate	8	27	5	16
6	Occupation				
	Government Employee	0	0	0	0
	Private Employee	15	50	17	57
	Self-employment	7	23	5	17
	Unemployed	3	10	4	13
	Student	5	17	4	13
7	Type of family				
	Nuclear	20	67	18	60
	Joint	8	27	9	30
8	Monthly Income (Rs.)				
	Extended	2	6	3	10
	1001-3000	10	33	11	37
	3000-5000	15	50	14	46
	5001-7000	3	10	3	10
	7001 and above	2	7	2	7

The above table indicated that majority of the caregivers both in experimental and control group were 31-40 old, were male, married, belonging to Hindu religion, had primary education, work profile of private employment, living in nuclear family and earn 3000-5000 per month.

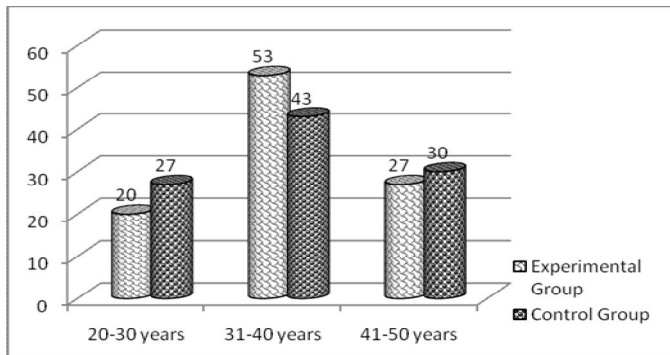


Fig 1: Frequency & percentage distribution of age of the caregivers of traumatic brain injury patients in the experimental and control group

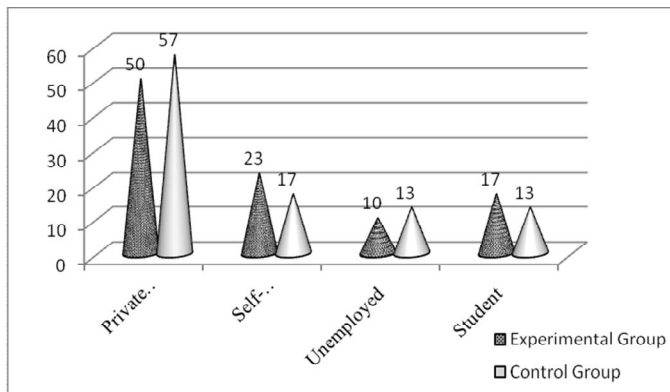


Fig 2: Frequency & percentage distribution of occupation of the caregivers of traumatic brain injury patients in the experimental and control group

Table 2: Mean dimension wise stress scores of experimental and control group in the pre-test:

S.No	Dimension	Experimental Group	Control group
1	Harassment	13.58	13.7
2	Overload	15.54	15.632
3	Irritability	8.36	8.5
4	Lack of joy	30.34	30.48
5	Fatigue	16.8	16.74
6	Worries	17.3	17.02
7	Tension	13.42	13.66
Overall		115.34	115.58

The table 2 clarified that the caregivers of traumatic brain injury patients in the experimental and control group had similar stress scores before intervention.

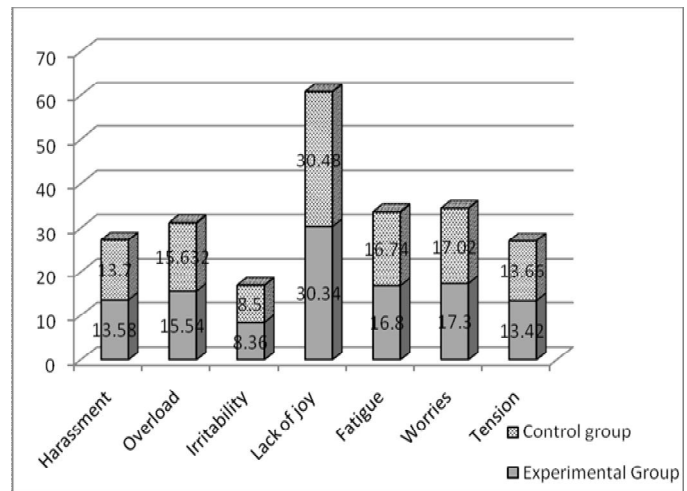


Fig.3 Mean dimension wise stress scores of experimental and controlgroup in the pre-test

Table 3: Mean dimension wise coping scores of experimental and control group in the pre-test:

S. No	Dimension	Experimental Group	Control group
1	Detached coping	18.56	17.74
2	Rational coping	12.16	12.44
3	Emotional coping	23.62	23
4	Avoidance coping	18.78	18.08
Overall		73.12	71.26

The table 3 depicted that the coping scores of the caregivers of traumatic brain injury patients in the experimental and control group were similar before intervention.

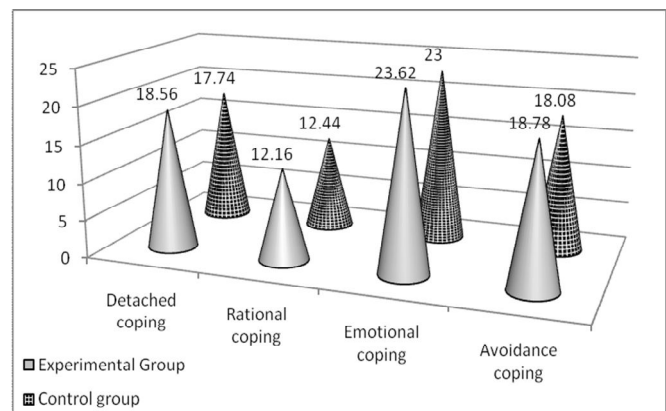


Fig.4 Mean dimension wise coping scores of experimental and controlgroup in the pre-test

Table 4: Effectiveness of nursing intervention on stress, coping and burden in the caregivers of traumatic brain injury patients in the experimental and control group:

Variable	Post-test mean score		t Value
	Experimental group	Control group	
Stress	85.84	109.34	22.66*
Coping	79.85	71.66	5.068*
Burden	45.21	67.42	66.121*

*Statistically significant at $p < 0.001$.

As stated in the table 4, there was a statistical significance was noted in independent t test between post-test mean scores of experimental and control group. It was found that the effectiveness of nursing intervention on stress, coping and burden in experimental group was statistically significant when compared to that of the control group. The nursing intervention package was effective in reducing the stress and burden and improving the utilization of coping strategy in the subjects. This was evident from the significance shown in the post intervention scores as revealed by the independent 't' test among the experimental group than control group where the nursing intervention package was not given

Table 5: Association between the socio demographic variables with the pre-test scores of stress in the caregivers of traumatic brain injury patients in experimental group:

S. No	Demographic variables	Experimental Group (n=30)		Chi-square value
		Frequency	%	
1	Age (years)			1.729 NS
	20-30 years	6	20	
	31-40 years	16	53	
	41-50 years	8	27	
2	Gender			2.38 NS
	Male	19	63	
	Female	11	37	
3	Marital status			4.3 NS
	Married	23	77	
	Unmarried	7	23	
4	Religion			3.01 NS
	Hindu	17	57	
	Christian	6	20	
	Muslim	7	23	
5	Education			2.74 NS
	Illiterate	3	10	
	Primary	11	36	
	Secondary	8	27	
	Collegiate	8	27	
6	Occupation			3.71 NS
	Private Employee	15	50	
	Self-employment	7	23	
	Unemployed	3	10	
	Student	5	17	
7	Type of family			1.05 NS
	Nuclear	20	67	
	Joint	8	27	
	Extended	2	6	
8	Monthly Income (Rs.)			0.87 NS
	1001-3000	10	33	
	3000-5000	15	50	
	5001-7000	3	10	
	7001 and above	2	7	

There were no statistical association was found in chi-square analysis between the socio demographic variables with the pre-test scores of stress, coping and burden on the caregivers of traumatic brain injury patients hospitalized in critical care units.

VII. CONCLUSION

Caregivers of traumatic brain injury patients hospitalized in critical care units face increased stress and burden and making themselves unable to cope up with the challenges faced during care giving. This nursing intervention package helped those caregivers to reduce the stress and burden and helped them to enhance coping skills effectively and function in society as normal as possible.

VIII. RECOMMENDATIONS

1. A comparative study on stress, coping and burden can be conducted between the traumatic brain injured patients and their care givers.
2. A study can be conducted in other areas of trauma centers in a different setting to assess a severity of stress, coping and burden in the caregivers.

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