Impact of Nurse-led Neurosurgery Clinic and Nurse-Led Brief Intervention for Post-Operative Patients of Intracranial Tumor and their Caregivers on Neuropsychological and Clinical Outcome: Feasibility in a Low-Middle Income Country

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Background

- Patients with intracranial tumors (ICT) suffer from various neuropsychological symptoms that adversely affect the caregivers
- Nurse-led clinics increase the scope for specialized nurses to practice more autonomously for cost-effective health services.

Objectives

- To assess the effectiveness of a Nurse-led Neurosurgery Clinic on behavioural symptoms of post-operative patients with ICT and distress among their caregivers

Methods & Results

- Development & validation of a 'brief nurse-led counselling program' delivered by a nurse counsellor in a nurse-led clinic for patients with ICT and their caregivers: First of its kind
- Randomized control trial after IEC ethical clearance: 80 adult postoperative patients with ICT who were conscious (E4V5M6) at discharge along with their family caregivers
- 40 patient-caregiver pairs who consented were randomly allocated to the control and experimental groups
- The nurse-led brief intervention was provided by the nurse counsellor to both patients and caregivers of the experimental group at the time of discharge and first follow-up.
- Behavioural symptoms of patients and distress among caregivers were assessed by using the Neuropsychiatric Inventory Questionnaire at discharge and three-month follow-up.

Fig 1: Brief Neurosurgery Nurse-Led Counselling Pamphlet in English & Hindi

Fig 2:Brief Neurosurgery Nurse-Led Counselling by the Neurosurgery Nurse Counsellor

Results

- Patients with ICT and their caregivers in both groups were comparable regarding socio-demographic and clinical variables.
- Patients of the experimental group who received the nurse-led intervention had a significantly lesser number (NPI-Q Score:0(0-1)Vs 1(0-2), p=0.01) and severity (Severity score: 0(0-1)Vs 1(0-4), p=0.01) of behavioural symptoms as compared to the control group.
- Caregivers in the experimental group had significantly lesser severity of distress as compared to the control group (0(0-0)Vs. 0.50(0-2), p=0.001).

Tab 1:Comparison of number of behavioral symptoms of patients with intracranial tumor between control and experimental group

Period of assessment	Number of behavioral symptoms (NPI-Q Score)				
	Control group (n_1=40)		Experimental group (n_2=40)		U value (z value) p value
	Median (IQR)	Mean rank	Median (IQR)	Mean rank	
At discharge	2.00 (1-3)	41.14	2.00 (1-3.75)	39.86	774.50 (0.24) 0.80
At 3 months	1 (0-2)	47.25	0 (0-1)	33.75	530.00 (-2.77) 0.01

Tab 2:Comparison of severity of behavioral symptoms of patient's with intracranial tumor between control and experimental group

Period of assessment	Severity of behavioral symptoms (NPI-Q Score)				
	Control group (n_1=40)		Experimental group (n_2=40)		U value (z value) p value
	Median (IQR)	Mean rank	Median (IQR)	Mean rank	
At discharge	3.00 (1.25-5)	40.66	3.00 (1-4.75)	40.34	793.50 (0.06) 0.95
At 3 month	1 (0-4)	47.05	0 (0-1)	33.95	538.00 (-2.68) 0.01

Tab 3:Comparison of the severity of distress among caregivers of patients with intracranial tumor in control and experimental group

Period of assessment	Severity of distress among Caregiver's(NPI-Q Score)				
	Control group (n_1=40)		Experimental group (n_2=40)		U value (z value) p value
	Median (IQR)	Mean rank	Median (IQR)	Mean rank	
At discharge	2.00 (0-5.75)	38.85	3.00 (1-5)	42.15	734.00 (0.64) 0.52
At 3 months	0.50 (0-2)	47.88	0 (0-0)	33.13	505.00 (3.41) 0.001

Tab 4:Prevalence of each behavioral symptoms based on severity in patient's with intracranial tumor in experimental and control group

Behavioral symptoms	Control group f (%)	Experimental Group f (%)
Agitation/Aggression	23 (57.5)	22 (55.0)
Dysphoria/Depression	26 (65.0)	28 (70.0)
Anxiety	28 (70.0)	29 (72.5)
Apathy/Indifference	33 (82.5)	33 (82.5)
Disinhibition	38 (95.0)	38 (95.0)
Irritability/Lability	31 (77.5)	30 (75.0)
Night-time Behaviour	27 (67.5)	25 (62.5)

Tab 5:Co-relation of patient's behavioral symptoms with Caregiver's distress at discharge (n=80) ⟶

Variable	Caregiver's distress	
	r value	p value
No. of behavioral symptoms	0.80	<0.001
Severity of behavioral symptoms	0.92	<0.001

Conclusion

- The nurse-led brief intervention delivered through a nurse-led clinic resulted in significantly fewer behavioural symptoms among patients with ICT and lesser severity of distress among caregivers.
- We must initiate and sustain nurse-led clinics and focus on capacity building and resources for better healthcare delivery.
- Incorporation of telenursing services and technological advancement paves the way for future Nurse-Led clinics

References

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