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

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

Period of		Number of behavioral symptoms (NPI-Q Score)			
assessment	Control group		Experimental group		
	(n ₁ =40)		(n ₂ =40)		U value (z value)
	Median (IQR)	Mean rank	Median (IQR)	Mean rank	p value
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		e)			
assessment	Control group		Experimental group		
	(n ₁ =40)		(n ₂ =40)		U value (z
	Median (IQR)	Mean rank	Median (IQR)	Mean rank	value) p value
At discharge	2 00 (1 25 5)	10.00	2.00(1.4.75)	40.24	793.50 (0.06)
	3.00 (1.25-5)	40.00	3.00 (1-4.75)	40.54	0.95
At 3 month		47.05		22.05	538.00 (-2.68)
	1 (0-4)	47.05	0 (0-1)	33.95	0.01

- 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

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	A Prevalue streament at the meant Bill bettering and extended This for prever is fully written. Billy the prever is fully written Billy the prever is fully written Source for prever for the to Source for the to Source for the to Source for the to Source for prever for the to Source for the to	Access of the particular Access of the particular of the optimizer with a mathematical behaviour of the particular of t		दिक्कत और अन्य अपहार संबंधी परवानी का साधना करना प्रदेश है। मरीज की देखभात करने पाने हर समय मरीज के साथ रहकर उनकी सहायता करने हैं। मरीज की कैसे देखभात करनी बाहिए ये जानने के तिए पढें: 1. दैनिक गतिविधियों को आसान करना: क) देनिक गतिविधियों. - देनिक कार्यों में मरीज वरी	EDI+ जिन कामों को करने में कोटिसई आती है उनको छोटे छोटे काम मैं बाटकर आसान बनाएं, जिनकी मुरीज आसानी से कर सके। अगर मरीज छोटे मोटे काम करने लायक है तो मरीज को सूद कपड़े पहनने वे खाने की मेंच पर, या रसोई से भोजन लेने दें, कपड़े तह लगाने आदि है।
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Fig 2:Brief Neurosurgery Nurse-Led Counselling by the Neurosurgery Nurse Counsellor



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

Period of	Severity of distress among Caregiver's(NPI-Q Score)				
assessment	Control group Ex		Experimental	group	
	(n ₁ =	40)	(n ₂ =40)		U value (z value) p
	Median (IQR)	Mean rank	Median (IQR)	Mean rank	value
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	Experimental Group
	f (%)	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)

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).

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) →

's	Variable	Caregiver's	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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