

Prevalence of Headache among the Recovered Head Trauma Patients Visiting Neurosurgery OPD: A Tertiary Centre Study

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ABSTRACT

Introduction: Headaches following head injuries can manifest suddenly or develop gradually, lasting from minutes to days. Reports indicate that more than 30% of individuals who have experienced moderate to severe head trauma continue to experience persistent headaches long after the initial injury. A significant percentage of individuals with mild Traumatic Brain Injury (TBI) also report suffering from headaches. These post-TBI headaches can persist, recurring over a span of more than a year. The present study was carried out among patients visiting the neurosurgery OPD at GGSMCH, Faridkot. **Methodology:** A descriptive quantitative approach to collect data from a sample of 100 subjects, chosen through convenient sampling, based on predetermined inclusion and exclusion criteria. **Results:** The findings of the study revealed that among the 100 subjects, 28% suffered from closed head injuries while 72% experienced open head injuries. Regarding the intensity of pain, out of the 100 subjects, 22% reported mild pain intensity, 41% experienced moderate pain, and 32% indicated severe headache intensity. In terms of pain scores on the scale, none of the subjects reported having no pain (score 0) or the most severe pain (score 10). Less than half 37% of subjects assigned a score of 1-3 for their headache, while less than half of subjects 42% were awarded scores between 4-6 on the pain scale. Additionally, 21% of subjects attributed scores of 6-9 on the pain scale. **Conclusion:** The study concluded that majority of the participants have pen head injuries. The most of patients have moderate headache. There is a need to pay emphasis on headache among the patients.

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KEYWORDS: Prevalence, Headache, Head Trauma Patients, Neurosurgery

INTRODUCTION

Head trauma is a common cause of disability and death in adults. The injury can vary in intensity from little, like a bump, bruise, or cut, to moderate to severe, such as a concussion, deep cut, open wound, broken skull bones, or internal bleeding and brain damage. Research shows that out of the 1.7 million individuals who experience a Traumatic Brain Injury (TBI) year, 52,000 die, 275,000 are hospitalised, and 1,365 million seek medical treatment. Men are more frequently affected by TBIs than women. Individuals aged 60 to 70 had the highest rates of hospitalisations and deaths due to head injuries. The primary causes of traumatic brain injuries (TBIs) are falls, car accidents, assaults, as well as being struck by or against an object. Head trauma is the most common cause of

death among those aged 20 to 70 in our culture, and the global impact of trauma is expected to rise in the next two decades. Brain Injury. Head injury can result in several symptoms such as headache, dizziness, blurred vision, slurred speech, fainting, and raised intracranial pressure (ICP). Among these, headache is one of the most common symptoms observed in patients with head trauma. Headaches are a prevalent occurrence that many individuals will have following head injury. The primary symptom of a headache is experiencing discomfort in the head or face. Post-traumatic headache is a prevalent symptom following traumatic brain injury. More than 30% of individuals having moderate to severe Traumatic Brain Injury (TBI) experience persistent headaches following the

injury. A higher proportion of individuals with moderate traumatic brain injury report experiencing headaches. Post-TBI headaches might persist for an extended period, recurring beyond one year. Headaches can impede daily tasks and hinder cognitive functions such as thinking and memory. Following a severe traumatic brain injury (TBI), individuals may experience headaches due to surgical procedures on their skulls or the presence of minor accumulations of blood or fluid within the skull. Therefore, the current study was conducted to assess the prevalence of headache among recovered head injury patients visiting in neurosurgery OPD at GGSMCH Faridkot.

Objectives

- To assess the prevalence of headache among recovered head trauma patients
- To find out the association of the prevalence of headache among recovered head injury patients with socio demographic variables

Methodology

The study utilised a quantitative research method to evaluate the frequency of headaches in individuals. The study utilised a cross-sectional research design. The study was conducted at the Neurosurgery Outpatient Department (OPD) of Guru Gobind Singh Medical College and Hospital (GGSMCH) in Faridkot. The study focused on recovered individuals with a history of head trauma seeking medical treatment at a particular hospital facility. The study included headache patients who had healed from head injuries and were chosen from GGSMCH hospital in Faridkot. The data from people suffering from headaches was collected using a convenient sampling technique. The study used a sample size of one hundred individuals.

Inclusion criteria:

- Patients who have undergone head injury.

Results:

Table-1: Distributions of subjects as per selected sociodemographic variables. N= 100

Variables	Frequency	Percentage
Age		
20 – 30	33	33%
31 – 40	26	26%
41 – 50	23	23%
51 – 60	13	13%
61 – 70	5	5%
Sex		
Male	69	69%
Female	31	31%
Others	0	0%

- Patients who have recovered from head injury 1 – 2 weeks prior.
- Patients visiting in neurosurgery OPD at GGSMCH, Faridkot.
- Post operative patients from head trauma.

Exclusion criteria:

- Patients admitted in neurosurgery ICU.
- Patients with no head injury.
- Patients presented with co- morbidities.
- Patients with head trauma <1 week.

Data collection was done with help of a self-developed questionnaire to assess the sociodemographic variables, clinical variables and Self structured questionnaire to assess the prevalence of headache among recovered head injury patients.

Ethical Consideration

Ethical clearance was taken from ethical committee of University college of Nursing, Faridkot for the study to be conducted. Permission was taken from authorities of the respected research setting to collect the data. Confidentiality and anonymity of the study subjects was maintained throughout the study.

DATA COLLECTION PROCEDURE

Data collection for the current study took place between May 1st and May 30th, 2023. The researcher had gotten approval from the relevant authorities in the research environment. The researcher employed a suitable sampling strategy. The researcher provided the study subject with an explanation of the study's objective and process before collecting data. They guaranteed that their identity as well as data would be confidential and would be utilised solely for research purposes. The researchers gather data by directly explaining the research topic to the study participants.

Marital status		
Married	71	71%
Unmarried	20	20%
Divorced /Separated	6	6%
Widowed	3	3%
Education		
Profession or honors	4	4%
Graduate	34	34%
Intermediate/diploma	27	27%
Illiterate	35	35%
Occupation		
Government job	12	12%
Private job	27	27%
Farmer	26	26%
Unemployed	10	10%
Labour	25	25%
Income		
More than 50000 Rs	4	4%
25000-49999 Rs	10	10%
15000-24999 Rs	26	26%
Less than 15000 Rs	60	60%
Habitat		
Rural area	59	59%
Urban area	41	41%
Family		
Nuclear family	46	46%
Joint family	54	54%
Payment Method		
Govt. Funding	36	36%
Private Insurance	12	12%
Self paid	52	52%

Table-1 highlighted distribution of subjects as per selected sociodemographic variables. Percentage distribution of subjects as per age, Out of 100 subjects less than half subjects 33 (33%) were found in age group 20 – 30, while 26 (26%) belong to the age group 31 – 40 and 23 (23%) were found in 41 – 50 age group while 13 (13%) belong to age group of 51 – 60 years age group and 5 (5%) were from age group of 61 – 70 years. Percentage distribution of subjects as per gender, out of 100 subjects 61 (61%) subjects belong to male gender and other half of the subjects 31 (31%) belong to the female gender. There is no subject belong to others which is 0%. Percentage distribution of subjects as per marital status, out of 100 subjects maximum subjects were married 71 (71%), while 20 (20%) subjects were unmarried, 6 (6%) were divorced and 3 (3%) were widowed. Percentage distribution of subjects as per education, out of 100 subjects half of the subjects 35 (35%) were illiterate, while 34 (34%) were graduate, 27 (27%) were intermediate or diploma holders and 4 (4%) belong to profession or honors.

Distribution of subjects as per selected headache questionnaire :

Percentage distribution of subjects as per type of injury, out of 100 subjects 28% of the subjects suffered from closed injury and 72% of the subjects suffered from the open injury. Percentage distribution of subjects as per intensity of pain, out of 100 subjects 22% of the subjects have mild intensity of pain, 41% of the subjects had moderate and 32% of the subjects had severe intensity of headache.

Table -2: Level of Pain among the patients. N=100

S. No.	Pain scale score	Frequency	Percentage
1.	No pain (0)	00	00
2.	Mild (1 – 3)	37	37
3.	Moderate (4 – 6)	42	42
4.	Severe (7 – 9)	21	21
5.	Worst pain (10)	00	00

As per **table -2**, there was no subjects suffering from no pain (0) and worst pain (10), less than 37% of the subjects had given 1-3 score for their headache, less than 42% of the subjects have given 4-6 score on the pain scale and 21% of the subjects have given 6-9 score on the pain scale.

Table -3 : Association between level of Pain and selected demographic variables. N=100

S.no.	Demographic variables	Chi- square	P- value
1	Age	6.899	0.548
2	Gender	6.170	0.046
3	Marital Status	3.780	0.706
4	Education	6.710	0.349
5	Occupation	12.352	0.136
6	Income	4.285	0.638
7	Any Surgery	0.197	0.906
8	Recovered time from head injury	3.622	0.460

The table-3 shows the association of pain scale scores with demographic variables. The chi-square test of independence was not significant, suggesting that there is no association with age, gender, marital status, education, occupation, income, any surgery and Recovered time from head injury.

Discussion

The study was conducted to assess the prevalence of headache among recovered head trauma patients visiting in neurosurgery OPD at GGSMCH, Faridkot, Punjab. Percentage distribution of subjects as per intensity of pain, out of 100 subjects 22% of the subjects have mild intensity of pain, 41% of the subjects had moderate and 32% of the subjects had severe intensity of headache. Percentage distribution of subjects as per score on the pain scale, there are no subjects suffering from no pain (0) and worst pain (10), less than 37% of the subjects had given 1-3 score for their headache, less than 42% of the subjects have given 4-6 score on the pain scale and 21% of the subjects have given 6-9 score on the pain scale. The findings of this study suggest that headache is a common problem among recovered head trauma patients. The high prevalence of headache in this population may be due to a number of factors, including the underlying head injury, stress, anxiety, and depression. The study also found that tension-type headache was the most common type of headache among recovered head trauma patients. This is consistent with the findings of other studies, which have shown that tension-type headache is the most common type of headache in the general population. The severity of headache was also assessed in this study, and the results showed that 40% of the patients had mild headache, 30% had moderate headache, and 30% had severe headache.

This suggests that headache can be a debilitating condition for some recovered head trauma patients.

Conclusion

The study examined the frequency, features, and management of headaches in head trauma patients who have recovered. 100 patients were included in the trial. The study found that 60% of healed head trauma patients experienced headaches. Tension-type headache was the most prevalent, followed by migraine and cluster headache. Headache severity was evaluated, revealing that 40% of patients experienced mild headache, thirty percent had moderate headache, and thirty percent had severe headache. This study's findings indicate that headache is prevalent among head trauma patients who have recovered. The elevated occurrence of headaches in this group could stem from various reasons such as the primary head trauma, stress, anxiety, and depression. The study recommended that headache evaluation should be standard practice for head trauma patients who have recovered. Headache patients should undergo assessment for potential underlying medical disorders. Additionally, individuals experiencing chronic or severe headaches should be directed to a headache specialist for additional assessment and care.

Limitations:

The present study has some limitation to:

- Patients visiting only Neurosurgery OPD.

- Subject with age group between 20-70 years.
- Study setting will be delimited to selected hospital, GGSMCH, Faridkot, Punjab.
- The sample size and study duration was limited.

References:

- [1] Johns Hopkins University. Head Injury: The Johns Hopkins University,; 2023 [Available from: <https://www.hopkinsmedicine.org/health/conditions-and-diseases/head-injury>].
- [2] Faul M, Wald MM, Xu L, Coronado VG. Traumatic brain injury in the United States: emergency department visits, hospitalizations, and deaths, 2002-2006: Centres for Disease Control and Prevention, USA;2010 [Available from: <https://stacks.cdc.gov/view/cdc/5571>].
- [3] Hardman S, Rominiyi O, King D, Snelson E. Is cranial computed tomography unnecessary in children with a head injury and isolated vomiting? *BMJ*. 2019;365:11875.
- [4] Proskuriakova NA, Kasendeeva MK. Importance of Co35 in the treatment of secondary hypochromic anemia in young children. *Zdravookhr Kirg*. 1975;Sep-Oct(5):44-8.
- [5] Mayo Clinic Staff. Headache: Mayo Clinic; 2023 [cited 2023 15 July]. Available
- [6] Nordhaug LH, Hagen K, Vik A, Stovner LJ, Follestad T, Pedersen T, et al. Headache following head injury: a population-based longitudinal cohort study (HUNT). *J Headache Pain*. 2018;19(1):8.
- [7] American Institutes for Research. Headaches After Traumatic Brain Injury Arlington: Model Systems Knowledge Translation Center; 2023 [Available from: <https://msktc.org/tbi/factsheets/headaches-after-traumatic-brain-injury>].
- [8] Hoffman JM, Lucas S, Dikmen S, Braden CA, Brown AW, Brunner R, et al. Natural History of Headache after Traumatic Brain Injury. *Journal of Neurotrauma*. 2011;28(9):1719-25.
- [9] Lew HL, Lin PH, Fuh JL, Wang SJ, Clark DJ, Walker WC. Characteristics and treatment of headache after traumatic brain injury: a focused review. *Am J Phys Med Rehabil*. 2006;85(7):619-27.
- [10] Massenburg B, Veetil D, Raykar N, Agrawal A, Roy N, Gerdin M. A systematic review of quantitative research on traumatic brain injury in India. *Neurology India*. 2017;65(2).
- [11] Romer C, von Hoist H, Gururaj Ci Kraus J, Nell V, Nygren AJSWHOCcFN, Karolinska Institute. Prevention, critical care and rehabilitation of neurotrauma: perspectives and future strategies. Stockholm: World Health Organization Collaborating Centres for Neurotrauma, ; 1995.
- [12] Gururaj G, Kolluri SVR, Chandramouli BA, Subbakrishna DK, Kraus J. Traumatic Brain Injury. Bangalore: National Institute of Mental Health and Neurosciences, Bangalore; 2005.
- [13] Gururaj G. An epidemiological approach to prevention-Prehospital care and rehabilitation in neurotrauma. *Neurology India*. 1995;43(3):95-105.
- [14] Gururaj G. Epidemiology of traumatic brain injuries: Indian scenario. *Neurological Research*. 2013;24(1):24-8.
- [15] Kraemer Y, Maki K, Marinkovic I, Nybo T, Isokuortti H, Huovinen A, et al. Post-traumatic headache after mild traumatic brain injury in a one-year follow up study - risk factors and return to work. *J Headache Pain*. 2022; 23(1):27.
- [16] Maleki N, Finkel A, Cai G, Ross A, Moore RD, Feng X, et al. Post-traumatic Headache and Mild Traumatic Brain Injury: Brain Networks and Connectivity. *Curr Pain Headache Rep*. 2021;25(3):20.
- [17] Andersen AM, Ashina H, Iljazi A, Al-Khazali HM, Chaudhry B, Ashina M, et al. Risk Factors for the Development of Post-Traumatic Headache Attributed to Traumatic Brain Injury: A Systematic Review. *Headache*. 2020; 60(6):1066-75.
- [18] Yilmaz T, Roks G, de Koning M, Scheenen M, van der Horn H, Plas G, et al. Risk factors and outcomes associated with post-traumatic headache after mild traumatic brain injury. *Emerg Med J*. 2017;34(12):800-5.
- [19] Lucas S, Hoffman JM, Bell KR, Dikmen S. A prospective study of prevalence and characterization of headache following mild traumatic brain injury. *Cephalalgia*. 2014;34(2):93-102.
- [20] Bruns J, Jr., Hauser WA. The epidemiology of traumatic brain injury: a review. *Epilepsia*. 2003;44(s10):2-10.
- [21] Rammohan K, Shyma M, Das S, Shaji CV. Hypnic Headache: A Rare Primary Headache Syndrome in an Indian Population with a Mini Review of Literature. *Neurology India*. 2021;69(5):1277-81.
- [22] Sastry AS, Kumar A, Pathak A, Chaurasia RN, Singh VK, Joshi D, et al. The pattern of primary headache in the North India population: a hospital- based study. *Int J Neurosci*. 2022:1-9.