

Prevalence of Helmet Induced Headache among Bikers

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ABSTRACT

Aim: To find prevalence of helmet induced headache among bikers.

Methods: A cross sectional study using convenient sampling was conducted on male bike riders of Lahore. After approval from ethical committee participants were selected on the basis of inclusion and exclusion criteria. Informed consent was taken. 102 participants filled out self-made questionnaire. Data was analyzed by using SPSS version 21 in form of frequencies, mean, standard deviation and pie chart.

Results: The mean age of participants was 22.77±1.72 years. A total of 52 participants (51%) were reported having headache. Prevalence of helmet induced headache came out to be 6(11.5%) among bikers. A total of 83% used helmet occasionally and 18.17% reported to use it always. The duration of headache for half of the participants (50%) was 20-30 min after wearing helmet, 38.5% had headache duration lasting for 1-5 days in a month. Majority had stabbing (25%) type of pain, among them only (9.6%) visited hospital due to headache.

Conclusion: There was high prevalence of headache (stabbing and aching) in bikers but mostly didn't report complaint of headache specifically while wearing helmet or after removing it.

Keywords: Headache, helmet, prevalence, primary prevention

INTRODUCTION

A helmet can effectively protect wearers in traffic incidents from potentially fatal injuries (RTA). The use of helmets has been shown to reduce head injuries². World Health Organization's (WHO) list of the ten most medical complications, headache is among the top ten³. Headaches are among the most common medical symptoms. All headache categories are operationally defined by the current International Classification of Headache Disorder, which also categorises headaches into primary and secondary headache disorders. The majority of headaches in clinical settings fall under the category of primary headaches, 10% of headaches in practise are secondary headaches⁴. It has been in the literature that wearing devices tight bands or straps around the head can cause headaches to develop over time, such as hats, helmets, goggles use during swimming or frontal lux devices⁵.

According to (IHD) headache caused by external compression has been included as external-pressure headache. The ECH is classified as a "other primary headache" in the heading 4 of the ICHD-3 when the following criteria are met: there must be at least two episodes of headache that are caused by external pressure and appear within 60 minutes of that stress, have maximum pain at the site of tension, and resolve within an hour of the pressure being released. ECH's pathophysiology is largely unknown⁶. The most common primary headache disease globally is tension-type headache⁷, THa Several factors contribute to its look.

Shoulder girdle and muscles of neck contracted (prolonged stay in a monotonous or non-physiological position). Vasospasm is brought on by scalp tension, which makes the pain worse. Tough circumstances that result in an increase in muscle tone. Sleep issues, which prevent (CNS) from having enough time to heal. Clinical forms of THa include episodic (ETHa), chronic (CTHa) ETHa can endure for a week or just 30 minutes. CTHa can occur everyday and non-stop for longer than three months, at least 15 days a month. "Helmet of a neurasthenic" is being squeezed by them ("helmet of a Beard")⁸. The use of devices on the head,

which might result in occupational incapacity, is a contributing factor of headache, which is caused by sustained compression of the soft tissues of the epicrania. The harm may be more severe for persons who already experience primary headaches like migraines because prolonged usage of the accessory by pressing on sensitive areas increases the risk of triggering a problem⁹. According to the patient's history, assess a headache patient is to identify or rule out secondary headache. To rule out a secondary form during the initial screening whenever a main headache develops in an unusual way or when the IHS criteria are not met. Similar to this, a skilled doctor must watch out for "headache alarms" or "red flags" that could indicate a secondary headache problem⁴. The mechanics and pathophysiology of nerve compression result in a distinct presentation for nerve compression headaches¹⁰. After proper diagnosis there some treatment method application of a cold band to the forehead was discovered to have a positive impact on quality of life and pain intensity¹¹. Myofascial release, neck muscle trigger point in the cervical thoracic muscle, stretching, superficial heat, massage progressive muscle relaxation, pressure release, muscular energy technique, and mobilisation of the thoracic and cervical spine are all used to cure tension-type headaches IASTM, also known as instrument-assisted soft tissue mobilisation³.

In Pakistan there are very few studies on helmet induce headaches. Therefore, the purpose of this research was to find prevalence of helmet induce headache among bikers.

METHODOLOGY

A cross sectional study was conducted through convenient sampling from 20th September 2021 to 10th January 2022. After approval of Ethical review committee of department of physical medicine and rehabilitation, university of management and technology Lahore, data was collected from 102 participant's from different parking stands of Lahore. Male bike riders from Lahore who were riding on bike at least 4 days a week from at least last 3 months, between ages 18 to 30 were included. Bike riders having any past history of trauma or head injury, subjects having any bacterial, fungal infection or any diagnosed tumor were excluded. Informed consent was taken from participants meeting inclusion

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and exclusion criteria. Participants were asked to fill out self-made questionnaire related to the topic. Sample size was 102 calculated using formula $n = Z^2 (1 - P) d^2$ Estimated Proportion=4% Desired precision of estimate=5% Confidence level=99%. All data was analyzed using SPSS vr 25.

RESULTS

Prevalence of helmet induced headache came out to be 11.5% among bikers. 6 participants (11.5%) were having helmet induced headache while 46 participants (88.5%) reported that their headache was not because of helmet. The mean age of participants was 22.77 ± 1.72 . 52 participants (51%) were reported having headache while 50 participants (49%) were not having headache. Figure 1 shows most of the participants (83%) reported using helmet occasionally, 18 participants (18.17%) reported wearing helmet always. The duration of headache for half of the participants (50%) was 20-30 min after wearing helmet, 38.5% had headache duration lasting for 1-5 days in a month. Majority had stabbing (25%) type of pain, among them only (9.6%) visited hospital due to headache (Table 2).

Fig. 1 How often do you wear helmet?

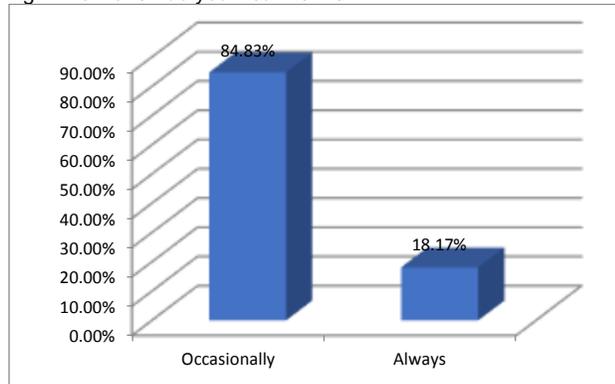


Table 1: Prevalence of Headache in Bikers wearing helmet

	Frequency	%age
Headache		
Yes	52	51.0%
No	50	49.0%
Helmet Induced Pain		
Yes	06	11.5%
No	46	88.5%

Table 2: Descriptive Statistics

	Frequency	%age
Pain After Removing Helmet		
20-30min	03	50%
30-60min	01	16.7%
> 1 hour	02	33.3%
No: of Days Having Headache		
01-05 days	20	38.5%
05-10days	19	36.5%
10-15days	10	19.2%
>15 days	03	5.8%
Type of Pain		
Throbbing	04	7.7%
Aching	11	21.2%
Tight	11	21.2%
Dull	06	11.5%
Stabing	13	25.0%
Pressure	04	7.7%
Shooting	02	3.8
Burning	01	1.9
Visit to Hospital		
Yes	05	9.6%
No	95	90.4

DISCUSSION

The objective of the study was to find prevalence of helmet induced headache among bikers of Lahore, Pakistan. In this study 102 participants were included out of which 51.0% had headache, and 11.5% were having helmet induce headache. Another study was performed in 2020, in contrast to this study, the study was conducted on healthcare professionals in Nearly every participant who had a headache before said it got worse, and more than half of the people in the study got headaches for the first time after using personal protective equipment¹². Recently a study conducted about coverings or things that can cause pressure around head in 2021_hat, headband, helme, glasses, goggles, or ponytail that is too tight can cause a headache^{13,14}.

In the study the duration of headache after removal of headache was also asked. 6 participants had pain after removal of helmet. Out of these 6 participants 3(50%) used to experiecned headache for 20-30 minutes. Out of 6, 2 participants (38.5%) experiecned headache for 5 days after removal of helmet. According to previous study conducted in 2020 on health care professions, showed that most healthcare professionals either experience headaches related to Personal Protective Equipment (PPE) used for long time^{5,15,16}.

In the study participants had different type of pain, stabbing 25% followed by aching and tightness 21.2% each. According to the previous study tension headache is becoming common because of different contributing factors, Also neck pain also gets involves along with heacadche in person wearing helmets^{1,8}.

There was also study that went on women who used hijab it was observed majority of the females cover their head with the accessories and these accessories causes the harmful effects on musculoskeletal system, contributing to neck pain^{17,18,19}. In the study it was also evaluated different methods to relieved headache out of 102 participants 13.5% participants stated by getting cold compress their headache was relieved. On the other hand 40.4% participants' headache was relieved by getting massage in previous 2018 study conducted which stated that, Acupuncture, stretching, and hands-on physiotherapy techniques were all beneficial for TTH headache sufferers. It is highly advised to combine these treatments with microwave diathermy, myo-fascial released, and acupuncture to relieved headache symptoms²⁰⁻²². In 2020 a self-controlled research design was applied to minimize individual differences. The sample group participating in the study were monitored over the course of four migraine attacks: two before and two during application period. It was discovered that placing a cold band around the forehead reduced pain intensity while also enhancing quality of life¹¹. The study showed that Out of 52 participants having headache only 5 participants 9.6% reported that they visited hospital because of headache that In contrast to preventive treatment, a study in 2021 indicated that the majority of general practitioners were familiar with the diagnostic criteria and acute management of migraine²³.

CONCLUSION

There was high prevalence of headache (stabbing and aching) in bikers but mostly didn't report complaint of headache specifically while wearing helmet or after removing it.

We acknowledge some limitations of our study. First, The study could be done on larger scale including different areas and populations. other predisposing factors such as psychological stress and sleep disturbances that could have contributed to the development headache associated headaches were not assessed in this study

Conflict of interest: Nil

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