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Researchers uncover new findings about cluster headaches

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Debilitating cluster headaches commonly begin in childhood, but patients are not typically diagnosed until they are adults, according to research from The University of Texas Health Science Center at

Houston.

A team of researchers led by Mark Burish, MD, Ph.D., assistant professor in the Vivian L. Smith Department of Neurosurgery with McGovern Medical School at UTHealth Houston, conducted the Cluster Headache Questionnaire, an international, internet-based survey of 1,604 participants with cluster headache. Results from the survey were recently published in *Headache: The Journal of Head and Face Pain*.

Cluster headache is a rare headache disorder, occurring in about one in every 1,000 individuals. They are extremely painful and occur in cyclical patterns known as cluster periods, with most attacks taking place at the same time each day. Cluster headache is diagnosed as "episodic" when the attacks occur in periods lasting between seven days and one year and are separated by pain-free periods lasting three months or longer. Meanwhile, in "chronic" cluster headache, attacks occur for more than one year without remission or with remissions lasting less than three months.

The headaches are similar to migraines, but there are some key differences. Unlike migraines, which can last an entire day or potentially several days if left untreated, cluster headaches typically last anywhere from 15 to 180 minutes. While it's uncommon to have more than one migraine a day, it is possible for someone to have up to eight cluster headaches over a 24-hour period. Moreover, migraine pain can vary in location; by contrast, cluster headaches involve only one side of the head, typically at the temple or around the eye. Lastly, people who have migraines tend to rest in a quiet, dark room, whereas people who have cluster headaches tend to become restless and often pace around the room.

There is extremely limited information on several characteristics of cluster headache, namely pediatric-onset cluster headache and

comparative effectiveness of cluster headache treatments.

"I hope that this study will change the traditional thinking that cluster headache only affects adult men," said Burish, who is also with The University of Texas MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences. "Our study shows that it commonly starts in childhood, and that many children go years without the correct diagnosis, presumably suffering the entire time because they don't have the correct treatments."

Significantly, pediatric onset was found in 27.5% of survey participants, but only 15.2% of participants with pediatric onset were diagnosed before the age of 18.

While the reasons behind this trend remain unknown, Burish has come up with several theories based on conversations with pediatric neurologists, patients, and their parents. Family members and doctors are not recognizing it because it is rare, and patients are not being referred to the appropriate specialists. Also, features of cluster headache in children could be different than they are in adults, considering that there are small differences between children and adults in other headaches like migraine.

Burish said the study also revealed that women who have cluster headaches report higher pain intensity, more nausea, and higher depression scores than men.

Other key survey findings include:

- While previous studies have shown that women are more likely to have migraines between ages 10 and 50, the inverse is true for cluster headaches: Men were more likely to have episodic cluster headache between ages 10 and 50. The sex ratio was

approximately equal for other ages.

- An overwhelming majority of respondents had at least one symptom featuring a reaction of the autonomic nervous system, like red eye or nasal congestion (99.0%) and had restlessness (96.6%), but many also had prototypical migraine features, including sensitivity to light and sound (50.1%), pain aggravated by physical activity (31.4%), or nausea and vomiting (27.5%).
- Interestingly, the first-line medications for acute treatment (oxygen) and preventive treatment (calcium channel blockers) were perceived as significantly less effective in chronic cluster headache compared with episodic cluster headache.

In addition to this epidemiological data, Burish said the study unearthed some smaller tidbits of information worthy of future research.

"Cluster headache seems to start at a younger age in patients with a family history of cluster headache, compared to an older age in patients without a family history," Burish said. "In genetics, this is called 'anticipation,' which suggests there may be a gene or genes involved. Identifying those genes could be a huge breakthrough for cluster headache."

More information: Larry I. Schor et al, Cluster headache epidemiology including pediatric onset, sex, and ICHD criteria: Results from the International Cluster Headache Questionnaire, *Headache: The Journal of Head and Face Pain* (2021). DOI: 10.1111/head.14237

Provided by University of Texas Health Science Center at Houston

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