



Better understanding of “21st century headache” via real-world data

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Throughout the world, headache is one of the main causes of limitations in daily life and/or unfitness to work. 50% of sufferers never consult a doctor and instead turn to self-medication. A recently published expert consensus investigated this phenomenon in more detail and associated it with a scientific concept called “21st century headache”.

Headache triggers in modern life

Scientific studies have produced increasing evidence that the modern lifestyle in industrialised countries impacts the occurrence and effects of headache [1]. This phenomenon has been named “21st century headache” (Fig. 1). Unhealthy diet, stress and poor posture have long been recognised as risk factors not only for obesity and fatigue but also for headache. Another important trigger factor recently added, was increased use of digital technology. The COVID-19 pandemic has made the situation even worse: not only stress and

nervous tension increased, but also the time that people spend seated in front of a screen, with poor posture, participating in business meetings remotely and maintaining virtual social contacts for long hours.

Negative headache impact on daily life and high level of suffering

The effects of the latest increase in headache - especially in those aged 15 to 49 - are many and varied: concentration, attention, motivation and social contacts decrease, whereas

21st century headache



Triggers

21st century lifestyles have a significant impact on headache

- Increased use of technology, e.g. mobile (smart) phone use, increased screen time
- Bad posture resulting from increased use of computers, e.g. resulting in neck pain

In the current pandemic, the risk of 21st century headache may increase

- Increased screen time resulting from greater use of social media platforms to connect with friends/family and to replace face to face meetings at work
- The number of Zoom meeting participants increased from 10 million in December 2019, to 300 million in April 2020

Mental clarity/cognitive function negatively impacted

Reduced

- Concentration
- Attention
- Problem solving
- Reasoning
- Perception
- Coordination
- Motivation

Headache related lack of mental clarity is associated with reduced productivity and social interaction

- Reduction in social activity
- Absenteeism and presenteeism
- Lack/impaired progress in educational career

Fig. 1. “21st century headache”: causes and effects

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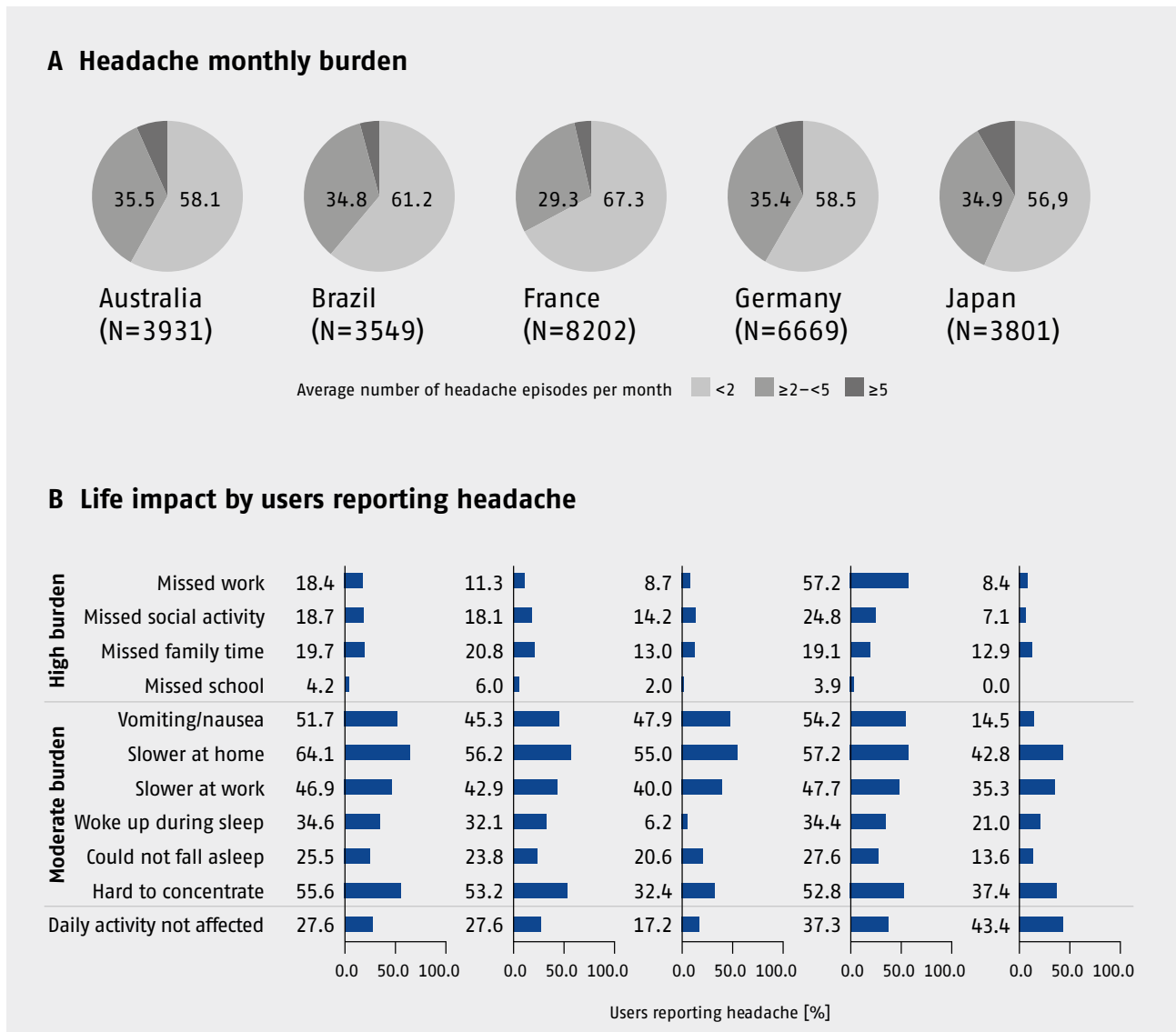


Fig. 2. Real-world data from an app-based study on the frequency of headache and its impact on daily life [2]

unfitness to work, presenteeism (presence at the workplace despite being unwell) and absenteeism increase (Fig. 1). Even though effective treatments exist, 60% of migraine sufferers and 80% of tension type headache (TTH) sufferers never go to the doctor and rely on self-medication for symptom relief. Until now, little was known about the actual negative impact in addition to the level of pain experienced by this group of sufferers, or about their self-treatment methods. This so called 'non-doctor treated headache' (NDH) phenomenon is the reason why randomized controlled trials (RCTs) targeting the NDH population are not possible as they only address professionally diagnosed headache. Therefore, real-world data e.g., from apps are needed to learn more about these NDH sufferers.

Real-world data from self-treating app users

To shed more light on this problem, Goadsby et al. [2] used an app-based study collecting real-world data from 60,474 people from five countries. The retrospective cross-sectional study analysed the self-reported data from "Migraine Buddy" app* smartphone users over 25 months. This population was not selected or recruited, but existing users of the app were offered

the chance to opt out of data collection. The data of all users who did not opt out and who had used the app at least 45 days during the study period were included in the analysis. The data associated with headache are shown in Figure 2.

Most suffers experience headache or migraine episodes up to 4 times per month

Transnationally, 57–67% of users reported they had fewer than 2 episodes of headache per month, whereas 29–36% suffered from headache between 2 and 5 times per month (Fig. 2A). The average reported pain intensity on a scale of 0 to 10 was about 5, but was slightly lower in Japan. Overall, the most frequently mentioned triggers were neck pain, stress and lack of sleep. Roughly half of all subjects reported nausea or vomiting associated with headache, except in Japan where the figure was only 14.5%. 35–64% of subjects reported that their everyday activities at home or at work were slower, 32–56% had difficulties to concentrate, 7–25% missed out on social activities and 13–21% on time with their family (Fig. 2B).

* Migraine Buddy App = smartphone application to track headache and migraine, available at <https://migrainebuddy.com/>

The most common non-pharmacological interventions for relief were sleep, drinking water, spending time indoors or in a darkened room, and drinking coffee.

In summary, it was shown, which profound impact headache has on the lives of those affected and that the genesis of headache through modern lifestyle triggers, like digital media and their enhanced use during the COVID-19 pandemic, is becoming more complex.

Literature

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