

HEADACHE

Lessons from lockdown — behavioural interventions in migraine

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A recent study reports an improvement in migraine symptoms during a COVID-19 lockdown in the Netherlands. The findings suggest that lifestyle changes can substantially alter the course of migraine, opening the door for greater use of behavioural interventions alongside existing pharmacological therapies.

Refers to Verhagen, E. et al. Effect of lockdown during COVID-19 on migraine: A longitudinal cohort study. *Cephalalgia* <https://doi.org/10.1177/0333102420981739> (2021).

The shutdown caused by the COVID-19 pandemic dramatically altered both our clinical practices and the day-to-day lives of our patients. Patients' jobs changed substantially or disappeared altogether. Months were spent sheltering in place at home, and in-person clinical visits and hospital therapies were cancelled or modified in accordance with government-imposed quarantine rules. In response, novel approaches, such as telemedicine services and electronic diaries, were introduced to enable patients to receive medical care in the absence of face-to-face services^{1,2}.

Several studies have investigated the influence of lockdown on the behaviour and habits of individuals with migraine and have explored ways in which the new circumstances have altered exposure to typical migraine triggers and migraine-aggravating behaviours¹⁻⁴. Interestingly, the results of a recent study by Verhagen et al.¹ suggest that, in some ways, the change in lifestyle caused by the pandemic has been beneficial for individuals with migraine. In their study, Verhagen et al.¹ used an electronic diary to collect data from 592 patients with migraine treated at a headache center in the Netherlands. On 12 March 2020, an 'intelligent lockdown' was adopted in the Netherlands, preventing gatherings and allowing only limited, socially distanced, outdoor activities. Further restrictions,

including the closure of schools, sports clubs and restaurants, were introduced on 15 March 2020.

Verhagen et al.¹ analysed participants' electronic diary entries from 28 baseline days (13 February to 11 March 2020) and the first 28 days of lockdown (12 March to 8 April 2020). For a subset of participants, electronic diary data were available for 1 additional baseline month and 1 additional lockdown month. Perhaps surprisingly, the researchers found a decrease in the number of migraine days and acute medication intake days, and an increase in general well-being, during the first month of lockdown compared with the preceding month. In participants for whom extended electronic diary data were available, this change was maintained during the second month of lockdown.

Verhagen et al.¹ suggested that — despite the many negative effects of the pandemic — flexible home working, reduction in social demands and greater scheduling freedom had led to a reduction in migraine frequency, intensity and resulting disability. Although speculative, this explanation suggests that greater consideration of the impact of work and social demands on migraine activity would be beneficial from both a clinical and a therapeutic standpoint.

The findings of Verhagen et al.¹ build on the results of an earlier study in children and

adolescents with primary headache disorders in Italy³. In this study, performed by Papetti et al. and published in 2020, an online questionnaire was used to investigate whether the course of primary headache disorders in young patients was altered during the COVID-19 lockdown. The results showed a trend towards a reduction in reported headache intensity and frequency during the lockdown. Multivariate analysis indicated that the lifestyle modifications resulting from lockdown had a major effect on the course of primary headache disorders in this category of patients. In particular, the lower level of school-related stress during the lockdown seemed to explain the reduction in the intensity and frequency of headache and migraine.

Migraine is considered to be a high-impact disease with a substantial burden, which makes it an important public health concern⁵. Although performed during extremely unusual circumstances, the results from the studies by Verhagen et al.¹ and Papetti et al.³ indicate that changes in some elements of lifestyle and behaviour can have a substantial influence on the course of migraine. Pain, in particular head pain, is multidimensional — consisting of interconnected sensory and affective biological components⁶ — and previous evidence indicates that the course of migraine can be modified by behavioural interventions, including education, persuasive communication, empathic understanding and supporting the patient in making changes to their habits, lifestyle, pain management approach and use of medication⁵. Considering this evidence and the recent studies discussed above, we suggest that combining behavioural approaches with preventive medications would substantially improve therapeutic success in patients with migraine.

“lifestyle modifications resulting from lockdown had a major effect”

Despite evidence for the benefits of behavioural interventions in patients with migraine, use of these approaches is still limited⁷. Nevertheless, the lack of face-to-face consultations during periods of the pandemic has encouraged some patients with migraine to take a more active role in the therapeutic process by monitoring their own symptoms

“ We should act on this evidence by making full use of behavioural interventions ”

and tracking the course of the disease^{1,2}. This shift could increase recognition of the behaviours, including lifestyle habits and patterns of medication intake, that have a negative effect on migraine^{2,8}. Thus, the pandemic has produced an extraordinary opportunity for us and our patients to develop new competencies. For example, in addition to the electronic diary approach taken by Verhagen et al.¹, other smartphone or internet-based migraine management approaches — such as remote mindfulness sessions, and acceptance and commitment therapy — have shown high adherence and good results during the pandemic².

In the past few years, the introduction of monoclonal antibodies against calcitonin gene-related peptide has revolutionized the treatment of migraine⁹; however, these therapies are costly and not yet universally available. Therefore, we consider a future with

integrated, flexible treatment programmes that combine pharmacological and behavioural approaches. These programmes might be more effective than the use of pharmacological treatment alone, thus improving patient outcomes and reducing costs. Behavioural interventions could include the education of patients to enable them to become actively involved in treatment, resulting in better adherence to both pharmacological and non-pharmacological treatments⁵. In conclusion, evidence collected during the COVID-19 pandemic has demonstrated that behavioural change can be used to manage migraine. We should act on this evidence by making full use of behavioural interventions to maximize the effect of pharmacological treatment and obtain the best possible results for our patients.

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Competing interests

The authors declare no competing interests.