Headache: The patient journey

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Headaches Background

Headache is a symptom experienced, at some time, by nearly everybody in Europe and worldwide. In some people, it is a recurrent and painful feature of one of the headache disorders: although more than 200 distinct headache disorders exist [1], **Migraine, Tension-Type Headache (TTH) and Medication-Overuse Headache (MOH)** are the most common, burdensome and relevant from a public health perspective. Thesve three disorders affect men, women and children in every part of the world, including over half of Europe's adults [2]. The Global Burden of Disease Study 2010 [3] established that **TTH and migraine are the second and third most common diseases in the world, estimated to affect 22% and 15% of adults respectively, while MOH affects 2-3% of adults**. Headache disorders are a great burden for sufferers and huge financial drain, because disability leads to lost productivity. Each million of the population in Europe loses an estimated 400,000 lost days from work or school every year to migraine alone [4], and the estimated cost of headache disorders in Europe is well in excess of €100 billion per year [5]. Headache disorders are under-recognized in society, under-prioritized in health policy, under-diagnosed in the population and undertreated in health-care systems. People with headache fail to seek health care that is inadequate, and adhere poorly to it.

Disease management and Treatment

Migraine, TTH and MOH are diagnosed solely on history. Headache diaries clarify the pattern of headaches and associated symptoms as well as medication use or overuse. Investigations, including neuroimaging, are indicated only when the history or examination suggest headache is secondary to another condition.

Effective treatments exist for these disorders. For migraine, lifestyle modifications can greatly reduce frequency of attacks, while a range of medications, including simple analgesics or triptans, can relieve or abort attacks. A number of prophylactic drugs, taken daily, can also reduce attack frequency. For TTH, simple analgesics are effective, and prophylaxis is recommended for high-frequency and chronic TTH, to reduce the risk of chronification. Treatment of MOH is first and foremost by withdrawal of the overused medication. Although success is usual, MOH is better avoided in the first place by a combination of public education and good management of the headache disorders that lead to MOH.

Non-pharmacological approaches to headache treatment are promising options, particularly for those cases where pharmacological therapies are not indicated. Examples of them include nutraceuticals and diets, behavioral therapies and non-invasive neurostimulation methods. They are well tolerated, can be combined with conventional drug therapies, and some of them are effective both for preventative and acute treatment.

The Care pathway: Treatment Gaps and Unmet Needs

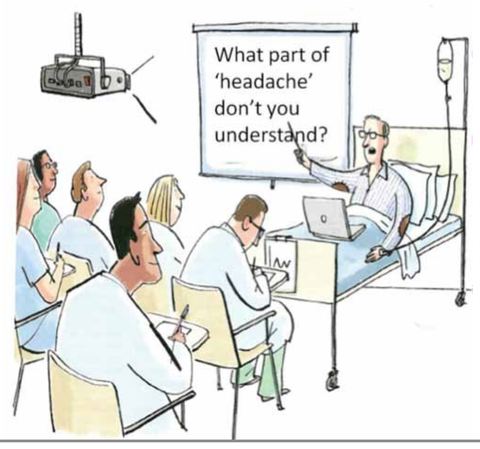
The "care pathway" for most European people with headache is a series of dead ends. Many who would benefit from professional care find it unavailable, fragmentary or difficult to access. Where headache services exist, they tend to be focused in specialist headache clinics, delivering high-end multidisciplinary care with very limited capacity. Such clinics are needed by the minority with complex disorders, but cannot serve this purpose when inundated by people who could be effectively treated in primary care – as most people needing headache care require neither specialist expertise nor investigations. Contrariwise, one in every three people receiving care for migraine in Russia and Spain, and one in every four in Luxemburg, do so from specialists. Good health care can greatly reduce the burden of headache, but it persists – principally because health-care systems that should provide this care do not exist or fail to reach many who need it . The roots of this failure mostly lie in education failure, at every level, but also in limited accessibility to appropriate care.

- **Lack of knowledge among health-care providers** is a problem sewn in medical schools: worldwide, only four hours are committed to headache disorders in formal undergraduate medical training lasting 4-6 years.
- **Poor awareness of headache disorders exists similarly among the general public:** headache disorders are not perceived by the public as serious as they do not cause death and are not contagious. Consequently, headaches are often trivialized as "normal" and seen in those who complain of them as merely an excuse to avoid responsibility.
- **On a political level, many governments, even if aware of it, do not acknowledge the substantial burden of headache on society.** Health care for headache obviously comes at a cost: large numbers of people need treatments, together with advices on correct usage, and delivery of these requires organized health care.

When my kids were younger , I used to spend my nights out in the garage so they wouldn't hear me screaming in the night because of my headaches. They did though.
Roberta, Italy, May 2017

I was in the Migraine Clinic for four weeks. In hindsight, I am glad to have come here and not to go somewhere else. For the first time, I had the feeling of being taken seriously. It was clear to me from the beginning that I cannot expect miracles in the short time. But prevention has begun and the doctors treated me sympathetically.
Flecki5, Germany, December 2016

My wife suffers from a rare type of chronic migraine. Last week she was in the hospital for 3 days getting infusion treatment. Right after that she received Botox injections and she was still in a great deal of pain. She had a severe migraine episode for 3 weeks. She always has a migraine, it's just how well the pain can be managed. It's very hard watching her go through this.
Luis, Spain, October 2016



Recommendations

About 50% of people with headache need professional care and cannot rely on self-medication: headache services should be based in primary care to provide sufficient reach and have to be supported by specialist care.

Properly educated primary care professionals effectively manage most of headache sufferers; specialist care is reserved forthe small proportion of the more complex situations such as high-frequency and chronic headaches or headaches complicated by comorbidities who need it: **people that reach specialist care are those that fail in controlling headaches with primary care indications or that are at risk of developing MOH**. Pharmacists have a key role in advising on use of over-the-counter (OTC) and other drugs, discouraging overuse, and on use of headache services.

Educational initiatives are needed: aimed at health-care providers to improve competence at their respective levels, so to reduce the underdiagnosis of headache disorders, and at the public to promote self-care and effective use of headache services.

Conclusions: the value of treating headache

Implementation of good headache health care is likely to be cost-saving. Headache care for most people can and should be provided by professionals such as primary-care physicians, using the skills they have with basic additional training. **The solution is implementation of headache services through education of professionals at primary care level**: structured, based in primary care to provide sufficient reach, and supported by educational initiatives that will enable to reduce the underdiagnosis of headache disorders. Structured headache services, at second or third level of care, should provide adequate diagnosis and treatments to the more complex situations such as high-frequency and chronic headaches or headaches complicated by comorbidities that require tailored multidisciplinary care.

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http://www.braincouncil.eu/activities/projects/the-value-of-treatment/Headache

Structured headache services based in primary care and supported by education:

Effective and cost-effective solutions to the burden of headache

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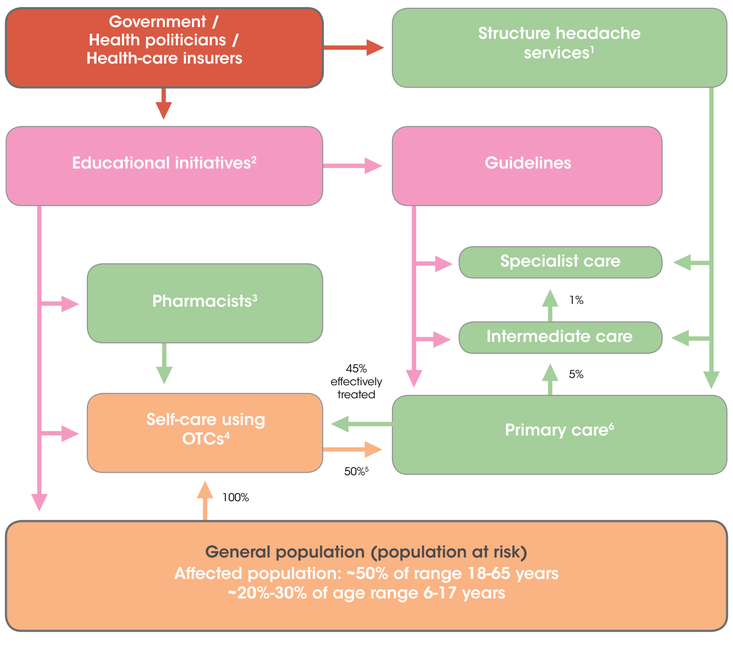
Background

Headache disorders are disabling, often lifelong neurological illnesses. Migraine, tension-type headache (TTH) and medication-overuse headache (MOH) are of major public-health importance: collectively the 3rd highest cause of disability in populations worldwide, they result in much lost productivity and very high indirect costs (>€100 billion per year in EU) [1]. Nevertheless they are poorly treated, although effective treatments exist. The objectives of the economic analysis were to estimate cost/effectiveness of a proposed solution: structured headache services based in primary care and supported by educational initiatives (Figure 1).



Notes:

1. Structured headache services are based in primary care and supported by specialist care.
2. Educational initiatives are aimed at health-care providers to improve competence at their level, and at the public to promote self-care and effective use of both over-the-counter (OTC) drugs and headache services.
3. Pharmacists advise on use of OTC and other drugs, discouraging overuse, and on use of headache services.
4. Within these services, everyone with headache should make best use of OTC drugs.
5. About 50% of people with headache need professional health care.
6. Primary care provides effective management for most of these; specialist care is reserved for the small proportion who need it.

Figure 1: Proposed solution: structured headache services, and patients' journey

Methods

We modelled cost-effectiveness of structured headache services delivering treatments for each of the headache types, with efficacy known from randomized controlled trials. Three health-care systems – of Russia, Spain and Luxemburg – brought different experiences of health service delivery and financing into the model. Data sources were published evidence, including population-based surveys [2,3], GBD surveys [4,5] and earlier estimations using the WHO-CHOICE model [6]. We made annual and 5-year cost estimates from health-care provider and societal perspectives (2017 figures, euros). We expressed effectiveness as healthy life years (HLYs) gained, cost-effectiveness as incremental cost-effectiveness ratios (ICERs) (cost to be invested/HLY gained). Scenarios for comparison were baseline (current care) versus target, with the assumptions that implemented services with provider-training would achieve higher coverage and consumer-education would lead to better adherence, each by 50% of the gap between current and ideal. Economic output included direct costs (resources sunk into health-care provision) and indirect costs (lost work productivity). We performed sensitivity analyses with regard to how much lost productivity might be recovered to test robustness of the model.

Results

In the 1-year time frame from the provider perspective, the intervention is cost-effective across headache types – well below WHO thresholds (ie, interventions costing <3x gross domestic product [GDP] per capita per HLY are cost-effective, those costing < GDP per capita are highly cost-effective) (Figure 2) [6]. Over 5 years the intervention is even more cost effective (Figure 3). Results are consistent across health-care systems. From the societal perspective the intervention is not only cost-effective but also cost-saving, for all headache types and health-care systems, at 1 and 5 years (Figure 4). The higher the country's wage level, the greater the economic savings for society (Luxemburg > Spain > Russia).

Lost productivity has a major impact on economic estimates because predicted savings in work productivity greatly exceed the investments in health-care estimated to achieve these savings. In a conservative scenario, where we assume that remedying disability will recover only 20% of lost productivity, the intervention remains cost-effective across all models (Figure 5). For TTH, predicted savings from productivity gains are smaller than estimated investment costs in Russia and Spain, but the intervention is still cost-effective [6]. In Luxemburg it remains cost-saving.

Conclusions

Structured headache services supported by patient and provider education are effective and cost-effective solutions to headache and its long-term disability. Cost-effectiveness is least (ICERs greatest) for TTH because of its much lower disability weight compared with those for migraine and MOH [4]. In practice, structured headache services will not discriminate: they must manage all headache types; however, people with TTH are least likely to require them.

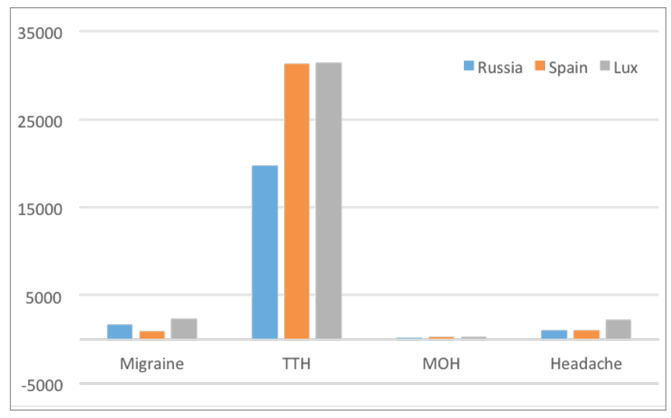


Figure 2: ICER (euros spent for each HLY gained) at one year (health-care perspective)

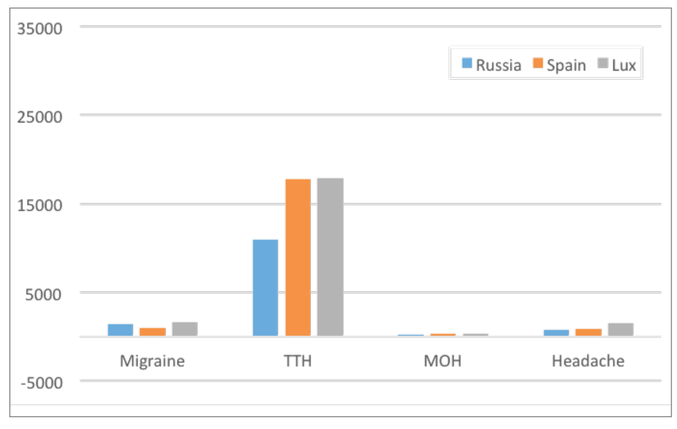


Figure 3: ICER at 5 years (health-care perspective)

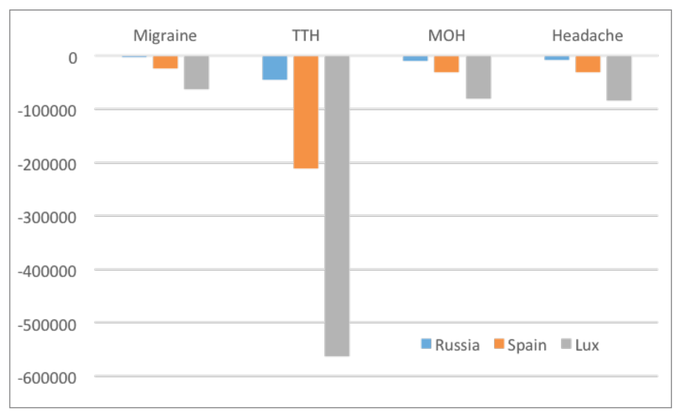


Figure 4: ICER at 5 years (societal perspective)

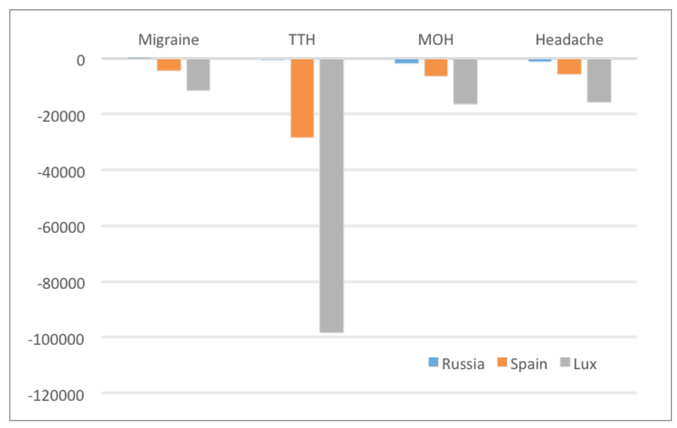


Figure 5: ICER at 5 years (societal perspective, conservative scenario: remedied disability recovers only 20% of lost productivity)

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