HEADACHES

Training Course

UnitelmaSapienza.it

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1. Course objectives and Description

PUBLIC HEALTH PRIORITIES

Headaches are listed in the latest Global Burden of Diseases 2019 survey cumulatively in 2nd place among all disabling diseases and in 1st place if only the female gender is counted. This calculation is based on YLD = years of life lost due to disability.

However, worldwide it remains an under-diagnosed and under-treated condition and there is generally little awareness of the burden of the disease (WHO, 2019). The International Classification of Headache Disorders (ICHD-3) distinguishes between two forms of Migraine, episodic and chronic, characterised by a frequency of headaches respectively less or more than 15 days per month for at least three consecutive months. The frequency of headache attacks in migraine sufferers may increase or decrease over time. Chronic migraine is a condition that often starts with episodic attacks that then become more frequent over months or years. The estimated average annual prevalence of migraine in Europe is 15.4 per cent in adults (8 per cent in men and 17 per cent in women) with a peak prevalence in the period of highest productivity, between the ages of 25 and 55.

A certainly significant social problem is the so-called overuse of medication: in about 4% of the population, headaches have a chronic course and usually occur for more than 15 days per month. Overuse of analgesics is found in 25-34% of individuals with chronic headaches.

Regarding chronic migraine, globally the prevalence is estimated to be between 1.4 and 2.2 per cent, but it is likely that these values are underestimated due to difficulties in diagnosing the condition (WHO Atlas of Headache Disorders).

Cluster headache is a rarer form (2-3/1000) with considerable intensity and disability and has the highest degree of diagnostic error.

Tension-type headache is the most common form of headache (>50% of the population), but with less intensity and disability, and is certainly the most widespread in industrialized countries: it affects two thirds of adult males and more than 80% of females.

SOCIAL BURDEN

Recurrent headache is among the chronic conditions with the highest incidence, second only to Low Back Pain (Global Burden of Diseases 2019), with higher values in women (9.1%) than in men (7.8%). Migraine ranks first in young women under the age of 50. No other disease, communicable or non-communicable, is responsible for more years of healthy life lost in young women, although migraine does not cause premature mortality.

The cost to society is enormous; according to the WHO, the value associated with the loss of productivity from all types of headaches is even greater than the health expenditure incurred by each country to cope with it. Disability-adjusted life years (DALYs) lost due to disability were more than 7 million for the year 2004, with projections for 2015 falling sharply (WHO, 2004). The negative influence of this disease results not only in a general reduction in productivity, but also in a real decline in performance.

Another problem with chronic headache is the association with other pathologies, especially in the psychopathological field (generalised anxiety, depression, panic attacks). Buse et al. (2012) found in their study that the rates of depression among

chronic headache sufferers are more than twice as high as among those with episodic migraine (25.2 % vs. 10.0 %), while the rates of anxiety and panic attacks are almost three times as high (23.6 % vs. 8.5 %).

ECONOMIC PROBLEM AND BARRIERS TO TREATMENT

Primary headaches and migraine are a public health problem with considerable costs for patients and society. This cost ranks among the highest of the major brain diseases, more than dementia 8.6 billion, psychotic/affective disorder 18.7 billion and stroke 3.4 billion.

According to a recent study in five European countries (IBMS Study Europe, 2013), chronic migraine consumes more healthcare resources than episodic migraine. In our country, the percentage of consultations with general practitioners is about 53% for patients with chronic migraine, compared to 26% for patients with episodic attacks. The difference is also noticeable in the percentage of patients seeing a neurologist (40% vs. 14.7%) or other specialists (29% vs. 9%) and in hospital admissions (3.6% vs. 2.4%). The total costs of migraine are also influenced by other costs incurred by the health care system for the treatment of migraine pain-related conditions. In Italy, psychiatric comorbidities are associated with a 1.6-fold increase in costs. In the last decade, increasing attention has been paid to the social and individual impact, in economic and quality of life terms, of headache.

The growing sensitivity in this context stems from the consideration that, although primary headaches do not have a marked influence on life expectancy, the consequences for the individual and society are considerable in terms of a) direct costs (these are the operational and organizational costs directly attributable to a given disorder), b) indirect costs (these refer to the use of resources without a direct outlay of money; they are estimated in relation to the loss of working days, the loss of productivity due to reduced efficiency and the time needed for the management and treatment of the illness and taken away from non-work and indirect activities), c) intangible costs (these are of a psychological and social nature attributable to pain anxiety and the emotional impact that the disease causes in the affected individual and his or her family members), and d) strongly negative repercussions on the quality of life (the WHO defines quality of life as the perception that individuals have of their position in life in the context of the socio-cultural system in which they live in relation to their goals, expectations, standards and concerns).

As far as primary forms are concerned, diagnosis to date is only based on a correct and careful anamnestic collection of symptoms and a general objective examination. There are no instrumental investigations that allow a diagnosis of primary headache to be made. Despite this, it has been shown that there is an unnecessary and costly demand for instrumental examinations in Italy: among the headache sufferers of the general population in Parma who underwent instrumental examinations, 8.5% had a Computerized Tomography (CT) or Magnetic Resonance Imaging (MRI) of the brain and 10.3% an Electroencephalogram (EEG).

The symptomatic and preventive treatment of primary headaches is based on the use of various drugs, the methods of use of which are definitive in specific guidelines that represent an indispensable cultural background for doctors involved in the management of headache patients.

The average cost of a patient with chronic migraine over a 3-month period is about 2.5 times higher than that of a patient with episodic migraine and is about €662,00 and €207,00, respectively. This suggests that the introduction of treatments that reduce the frequency of migraine episodes could potentially influence the reduction

of the clinical and economic burden of the condition in Europe. Similar results were found in the United States and Canada, where the higher costs of chronic versus episodic migraine were mainly related to the higher number of visits, emergency room admissions, hospitalizations and medication.

SUSTAINABLE DEVELOPMENT GOAL SGD3 AS A PILLAR OF EDUCATION

Considering the burden of disease and the high costs associated with managing the condition, all prevention and early treatment strategies should be considered as they are likely to be cost-effective. Since chronic headache is a major cause of disability and service utilization, early and correct identification of sufferers and appropriate treatment is desirable. This would undoubtedly reduce costs both directly, by reducing the use of specialist or hospital care, and indirectly, by reducing acute episodes and improving quality of life.

The 2030 Agenda for Sustainable Development, adopted by all UN Member States in 2015, provides a shared agenda for peace and prosperity for people and the planet, now and in the future. At the core are the 17 Sustainable Development Goals (SDGs), which represent an urgent call to action by all countries - developed and developing - in a global partnership. Among others, they recognise the need for strategies that improve health and education, reduce inequality, and stimulate economic growth.

The SGD3 declaration 'Ensuring healthy lives and promoting well-being for all at all ages' included all non-communicable diseases.

Most headaches can be successfully treated and effectively managed in primary care worldwide. However, appropriate tools are needed to create and spread awareness that migraine, and all forms of headache in general, is a health problem that requires medical treatment.

The WHO has identified the main barriers that may hinder patients' access to the most appropriate treatment as clinical, social, and political-economic. The first factor relates to physicians' limited knowledge of the problem, which in turn stems from the lack of attention paid to the disease in university training settings.

Social barriers relate to the lack of awareness of the clinical problem in the general population. Indeed, headaches are generally not perceived as a serious problem, since they occur more frequently in an episodic form, are not contagious and do not endanger human life. Consequently, sufferers rarely consult a doctor and are often not even informed of the existence of effective treatments. Finally, another barrier is the fact that many governments ignore the impact of headaches on society and underestimate the potential savings that can be achieved through efficient allocation of resources. Furthermore, according to the guidelines, it is desirable that, before prophylactic treatment is undertaken, all headache triggers and aggravating factors are identified and, when possible, eliminated, and that patients with symptomatic analgesic abuse undergo a course of detoxification before or at the start of prophylactic therapy. The management of the migraine patient requires constant care, first by the general practitioner and then by specialized centres dedicated to the study of headaches, which know how to direct him/her towards the most effective treatment, while limiting access to inappropriate services. Such centers are indispensable for taking charge of the patient in a structured clinical pathway.

It has been established at European level that progress in the management of the headache patient depends on improved access to competent healthcare facilities, supported by training program in the field of headache diagnosis and treatment. This improvement requires the patient to be at the center of a pathway that involves

an organization of skills and services according to levels of care need. In light of the high prevalence of headache disorders and the need to ensure that the entire population receives appropriate care in a cost-effective manner, the *European Headache Federation*, in collaboration with the WHO's *Lifting the Burden* campaign, suggests a three-tiered organization of services. Epidemiological data suggest that most headache patients can be treated effectively at the first level (primary care, emergency room in selected cases) and only a smaller percentage need higher specialization, such as the neurological consultation or outpatient clinic with a neurologist specialized in headache diagnosis and treatment (second level) and the academic headache center (third level). It has been calculated that the equivalent of one full-time doctor is sufficient to effectively treat the needs of a population of 35,000 at level one, 200,000 at level two and 2,000,000 at level three.
In conclusion, the Course aims to broaden the audience of headache experts, introducing various professionals who must deal with such a widespread and transversal pathology daily.

2. Partecipants

The Course is aimed at health professionals interested in acquiring expertise on headache disorders. The syllabus encompasses the Course's areas of interest, from Social Sciences to Basic Sciences, from Translational to Clinical Headache Medicine. This Collection supports and amplifies research related to United Nations Sustainable Development Goals 3 *Good Healthy Lives and Well Being*.

3. Entry Requirements

The course is aimed at all graduate healthcare professionals interested in headache.

4. Teaching Methodology

The online e-learning course is taught in English and includes the lecturers' lectures, downloadable teaching materials on the web. Students can consult lectures 24/24 – on any device PC, tablet, and smartphone - video/audio- only video, only audio- streaming/downloading MP3. Credentials to the course will last 12 months –a full academic year, thus the participant can review and consult all the available material. Web Seminars will support the teaching activity represented by the video lectures. These activities will be predominantly realized in synchronous and asynchronous mode.

5. Assistance and Tutoring

The University guarantees continuous assistance and support in the learning process of the students through the presence of an experienced and qualified tutor. The tutor, in addition to assisting the students at the university, proactively manages the relationship with the students' virtual classroom, setting up any teaching and information tools deemed useful to support the students, also using synchronous and asynchronous modes, such as chat, forums, etc.

6. Course organization

The course entails a study period of 50 hours, including lectures, tutoring, e-activities, research activities and individual study. Credentials to the course last for a full academic year.

7. Direction and Faculty

The course is directed by Prof. Paolo Martelletti, UnitelmaSapienza University of Rome and Prof. Matilde Leonardi, Foundation IRCSS Neurological Institute Carlo Besta, Milan, Italy

The activity of Tutor is entrusted to Dr. Valerio De Angelis.

The course is held by:

- **Prof. Ishaq Abu-Arafeh** - Royal Hospital for Children, Glasgow, UK
- **Prof. Anne Ducros** - CHU de Montpellier, France
- **Prof. Rashid Giniatullin** - University of Eastern Finland, Kuopi, Finland
- **Prof. Licia Grazzi** - Foundation IRCSS Neurological Institute Carlo Besta, Milan, Italy
- **Prof. Matilde Leonardi** - Foundation IRCSS Neurological Institute Carlo Besta, Milan, Italy
- **Prof. Paolo Martelletti** – UnitelmaSapienza Universiyt of Rome, Italy
- **Prof. Mario Fernando Prieto Peres** - University of São Paulo, São Paulo, Brazil
- **Prof. Alberto Raggi** - Foundation IRCSS Neurological Institute Carlo Besta, Milan, Italy
- **Prof. Nirmal Surya** - Surya Neuro Center, Mumbai, India
- **Prof. Antoinette Maassen van den Brink** - Erasmus MC University, Rotterdam, Netherlands
- **Prof. Shuu-Jiun Wang** - National Yang-Ming University, Taiwan
- **Prof. Yonggang Wang** - Capital University, Beijing, China
- **Prof. Tissa Wijeratne**, University of Melbourne, Australia

8. Assessment Certificate

A Certificate of Participation in the Course will be issued after completion of the multiple-choice quiz.
For Italian residents the course will issue a certificate with 2 CFU/ECTS (SSD MED/26).

9. Registration Fee

The course is online and taught in English with no registration deadline.
Unitelma and FISC have reserved for the first 40 applicants residents of Low- or Middle-Income Country (LMIC), according to World Bank parameters, 40 full cover of the registration fee.

For other participants residents in Low Middle Economic level Countries, according to World Bank parameters, the registration fee reserved is € 150,00.
To all other applicants the registration fee is € 500,00

The application must be submitted 'online' at www.unitelmasapienza.it, through the specific 'Register' section.

10. Programme

The course program covers the following topics:

MODULE 1: *PUBLIC HEALTH, SGD3 AND HEADACHE*

- Brain Health, WHOiGAP and Headache
- Epidemiology across the Life Course
- Burden and Costs of Headache
- Biopsychosocial Aspects and Disability in Headache Disorders
- Socioeconomic and Geographic Inequalities

MODULE 2: *BIOLOGICAL AND CLINICAL MARKERS*

- Genetics
- Brain Mechanisms
- Brain Neuroimage
- Novel Pharmacological Targets
- Health Perception and Mental Health in Underserved Headache Populations

MODULE 3: *DIAGNOSIS*

- Clinical and Working Issues and SDG3
- Comorbidities Layering in Headache
- Gender Inequalities and SGD5
- Childhood and Adolescence Issues
- Secondary Headaches and Regional Healthcare

MODULE 4: *MANAGEMENT ACCESS AND SUSTANAIBILITY*

- Global Healthcare Access and Facilities
- Acute Treatment and Medication Overuse Issue
- Standard of Care Preventive Treatment within Regional Economics
- Sustainability of Headache Medicine
- Tele-Healthcare and Residence Project

INFORMATION
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