

THE IMPACT OF BRAIN, MIND AND PAIN DISORDERS ON WOMEN'S HEALTH AND WELL- BEING

About BMP Disorders and the BMP Interest Group

Brain, Mind and Pain (BMP) disorders encompass both neurological and chronic pain disorders, impacting approximately 370 million people [1,2] and causing enormous suffering and disability. BMP disorders can interfere with a person's quality of life and general functioning, but unfortunately, they are not widely recognised or understood by the general population. This lack of public awareness of BMP disorders contributes to the stigma and the associated isolation and discrimination, which affects the daily lives of people living with BMP conditions, their families and carers.

The [BMP Interest Group](#) is an initiative of the European Federation of Neurological Associations and Pain Alliance Europe, seeking to improve the quality of life of all those living with BMP disorders across the EU, as well as their families and carers.

Gender differences in diagnosis and treatment of BMP disorders

Men and women are impacted differently by BMP disorders, the disease risks, frequency, severity or response to treatment. Moreover, there is increasing evidence that there are sex and gender differences in BMP disorders, which affects perceptions, as well as related attitudes and behaviours.

Many of the **BMP disorders, such as Alzheimer's, stroke, multiple sclerosis, restless legs syndrome or migraine, are more prevalent in women than men** [3,4,5, 24]. In the same vein, women are nearly twice as likely to be diagnosed with depression and anxiety disorders compared to men [6]. Moreover, they tend to present faster progression of symptoms, increased risk of disease recurrence, greater disability and longer recovery times. This reinforces the stereotype that certain BMP disorders are considered more as "women's conditions".

Gender stereotypes and norms can have a negative impact on both the prevention and treatment of neurological disorders and chronic pain. This has often resulted in women's health needs being overlooked, and there are various studies that report under-diagnosis or misdiagnosis, as well as delayed treatment, due to women not seeking treatment or not being taken seriously.

For example, even though women comprise most of the diagnoses of chronic pain, **many females report their pain not being initially taken seriously or being mistrusted and psychologized** by their healthcare providers. [7] Another study, looking into the experiences of middle-aged women living with migraine, found that some women were dismissed not only by some healthcare professionals but also by family members. [8]

These repeated experiences of not being taken seriously can significantly impact women's access to the correct diagnosis, as well as their **access to the right treatment and services**. Compared to men, women with chronic pain conditions tend to receive less effective pain relief treatment, less medication with opioids, and more antidepressants and mental health referrals. [7]

A CLOSER LOOK INTO THE IMPACT OF MIGRAINES ON WOMEN

Migraine is three times more common in women than in men [5], and it is the second leading cause of disability in the world and the first among young women. The disease is most troublesome during a person's most productive years (late teens to 50s), so a large share of women suffering from migraines are still in the front line of childcare and household chores. As migraines are more prevalent in women, there is a false perception that this is a "women's disease", which can lead to an increase in stigma and discrimination, as well as low self-esteem among female patients. In fact, 85% of patients believe the disease is not taken seriously by society and governments, and almost half wait for at least 3 years before receiving their diagnosis [5].

Gender differences in research and development

For decades, women (including pregnant and/or lactating) have been excluded and underrepresented in drug research, particularly within clinical trials, [9] challenging the validity of benefit versus risk assessments of new drugs and medical technologies. [10] For example, adverse events due to the SARS-CoV-2 vaccines have been reported in greater numbers within the female population, and the scientific community continues to hypothesise about the safety of these vaccines in pregnant women. [11] Maternal mental health is also a topic of utmost importance, which is affected by a combination of related stigma, as well as a lack of clinical research. [12]

These caveats could be addressed with data stratification by sex, greater inclusion of women in clinical trials across disease areas, and targeted interventions to prevent sex/gender-based bias and stigma.

A disproportionate burden of care

In Europe, 80 % of care work is still provided by informal carers, with women providing approximately two-thirds of care [13]. For example, in the case of women caring for patients with dementia, research found that about a third of carers end up reducing their working hours or are compelled to give up their job because of informal care duties [14].

Moreover, female caregivers spend more time on average providing care than male caregivers. According to the 2014 Alzheimer's Association Facts and Figures, two-thirds of those providing care for 21 hours or more (67%) were women [15]. This has serious socio-economic consequences, including financial loss due to reduced income and financial difficulties in old age because of lower pension benefits.

Furthermore, because women tend to be the designated caregivers for children and elderly relatives, they often prioritize the needs of others and delay their own healthcare needs, which can result in poorer healthcare outcomes. Women who are informal caregivers also experience additional mental and emotional stress related to their role as caregiver, increasing the risk for various BMP disorders, such as mental health disorders and stress-related diseases, including anxiety and depression as well as physical ailments. [16] The mental and physical burnout is also a main reason why women providing care or suffering from BMP disorders have difficulties retaining a job or returning to work after a long period of absence.

A CLOSER LOOK INTO THE IMPACT OF PARKINSON'S DISEASE ON WOMEN

Within neurological disorders, Parkinson's disease (PD) is the fastest growing, with predictions of twelve million people worldwide being diagnosed by 2040. [17] Women with PD show a higher mortality and a greater reduction in lifespan [18], as well as a lower quality of life in comparison to men. [19] Regarding symptoms, anxiety, depression, restless legs syndrome, constipation and pain are more prevalent in women [20], who also tend to suffer more from the side effects of the currently available drugs. Furthermore, women are also underrepresented in clinical trials for Parkinson's disease, with more than half of all major trials published since 2010 having recruited 59% more men. [21]

The impact of the Covid-19 pandemic on women with BMP disorders and informal carers

The Covid-19 pandemic poses significant challenges for women with BMP disorders and those that care for BMP patients. The pandemic has amplified difficulties in accessing services and support, but also put women at higher risk for developing mental health problems. One global study found that the number of women who reported mental health impacts from Covid-19 was threefold that of men, with more than a quarter of women reported increased stress, anxiety and other mental health struggles [22].

At the same time, a study found that the pandemic is also taking a toll on BMP women's physical health as essential services for non-communicable diseases were among the most frequently disrupted services in 69% of the countries [23].



Furthermore, the Covid-19 outbreak has increased the levels of unpaid care work for women who are informal caregivers due to reduced care services. However, this widened gender gap is not reflected only in unpaid care work, but also in labour force participation and wages.

Despite its high prevalence awareness of the disease remains low. The disease has a clear female predominance. Numerous studies have reported that women are affected by RLS about twice as often as men for mild as well as moderate to severe RLS. The disease will generally become worse or might appear for the first time in one-third of all pregnant women. Effective symptomatic therapy for the disease is available but its long-term use carries the risk to even augment the symptoms.

Education about RLS is urgently needed to increase the expertise of healthcare professionals on how to diagnose and manage RLS. The cost to society as a result of misdiagnoses and lack of treatment is alarmingly high (25).

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