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A one year second level Master's Degree in "Medicine and Gender Health"

According to the World Health Organization (WHO), the concept of gender equity in medicine may contribute to a more thoughtful and adequate organization of the healthcare system based on gender identity, which encompasses a broad range of specific biological, psychological, sociological and behavioral features.

By taking into consideration gender differences, specific requirements for drug therapies can be identified that can significantly affect access, quality and adherence to treatment. Recently, in the issue no. 26 of "Quaderno del Ministero della Salute" devoted to "Gender as a determinant of health" (Il genere come determinante di salute), a series of gender-specific health policy articles described the main differences between men and women, underlying gender-specific medicine needs in our country. Differences between men and women are not simply related to those arising from a woman's reproductive life (pregnancy, lactation, menstruation), but nowadays a large number of women of childbearing age (~100 million per year worldwide) take estrogen-progestogen contraceptives and a substantial proportion of menopausal women make use of estrogen-progestogen combination (the so-called hormone replacement therapy). This consideration emphasizes only one of the several aspects that contribute to the significant differences between men and women in response to drug therapy. Previous observations suggest that gender differences are partially dependent on hormone levels, but gender is a multi-faceted construct that involves social and behavioral determinants, values and attitudes as well as environmental factors and interactions, all of which participate in generating differences. It is clear that there is a female heart and a male heart tissue, blood vessels differ between men and women, there is a female brain and a male brain as there are a reproductive female and male systems. Such differences should not be ignored; conversely, they should be taken into careful consideration in the attempt to achieve the best care for women. Gender differences should be assessed according to age, and it is important to know that they begin *in utero* and may vary over time. It is well known that women have a different ethanol metabolism compared with men, and that one of the key enzymes involved in ethanol metabolism (i.e. gastric alcohol dehydrogenase) is differently expressed between genders, significantly increasing ethanol bioavailability. It is less known that most of the difference is evident during the first part of life, while decreasing later.

The above mentioned issues point out that gender differences are not limited to drugs but extend to many xenobiotics, such as environmental pollutants, heavy metals, tobacco smoke, and many other drug-abuse substances, herbal remedies (botanicals), dietary supplements, etc. Therefore, the diverse response to external agents is extremely variable, and this may have important implications for drug-drug, food-drug, and herb-drug interactions. Attention to gender is also essential to reduce the incidence of various diseases that are epidemiologically prevalent in women, including heart disease (+5%), hypertension (30%), Alzheimer's disease (+100%), thyroid disease (+500%), or osteoporosis (+736%). It is therefore clear that many important features related to gender should become a central part of current healthcare systems, so as to meet the needs of the whole population, with particular attention to physiology, pathophysiology, early diagnosis, treatment, and monitoring of drug interactions, and potential side effects with a rigorous analysis that diversify studies and results by gender. On these grounds, a one year Master's Degree in "Medicine and Gender Health" has been started in collaboration with the Department for Individual Policies (Dipartimento politiche della persona) of the Basilicata Region, the Physicians' Association of the Provinces of Potenza and Matera, and the Department of Sciences of the University of Basilicata. The Master offers a one year multidisciplinary training program, targeted specifically to the preparation of professionals able to form and spread scientific knowledge in the biomedical field related to gender health and medicine, perceive gender medicine as a strategic goal for Public Health identifying gender-specific quality indicators, in order to improve the health of women and men seen as distinct and different categories of individuals. The professionals formed will be able to understand how and in which circumstances the scientific knowledge available can be transferred directly from one gender to another and will be able to promote wellness and healthcare, starting from the analysis of treatment programs and prevention in accordance with gender-targeted guidelines. It will provide the scientific basis of embryology, biochemistry, physiology, pathology, pharmacology, pharmacotherapy, etc., and the skills needed to identify peculiarities of organs and systems of different kinds aimed at the recognition and assessment of potential adverse drug reactions, drug-drug or herb-drug reactions that may arise in a gender-dependent manner.

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