

## Gender-based approach: an essential tool in patient safety management and forensic medicine practice

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**Summary.** The influence of sex and gender on human health and diseases continues nowadays to be underestimated in medical interventions and forensic practice, thus increasing the risk of claims for alleged healthcare professional liability and improper assessment of judicial matters. Since it is primarily an ethical issue, the World Health Organization recognized gender medicine as the only credible response to gender-based inequalities affecting the right to health and the need for fully inclusive personalized medicine. Indeed, patient gender significantly impacts the complexity of care, and it should be considered to optimize guidelines' production and improve prevention, diagnosis, prognosis definition, and therapy, as well as the performance of forensic investigations and their findings' interpretation. Gender medicine is a fundamental tool for appropriateness and resource rationalization in healthcare provision. At the same time, its full implementation may equip judicial systems with guaranteed and trustworthy assessment parameters to objectively evaluate forensic and criminal cases.

**Keywords.** Gender medicine, equity, appropriateness, patient-centered care, cost-effectiveness, health professional liability.

Gender consideration in the healthcare provision represents an ethical and public health issue,<sup>1</sup> recognized by the World Health Organization as an equity principle and a fundamental human right in healthcare access.

Gender-specific medicine also has forensic implications, based on every biological and sociocultural difference between genders impacting forensic investigations and medical practice.

A key point of patient safety management and forensic medicine practice is to allow appropriate use of health resources (e.g., human, technological, environmental, and organizational ones) and reduce the risk of patient harm by avoiding inadequate care. Since patients' gender affects the care complexity and the disease load, gender stratification should be carried out in any epidemiological analysis to point out differences otherwise not emerging and achieve healthcare gender-based cus-

tomization.<sup>2</sup> Indeed, a system of prevention, diagnosis, and treatment not considering gender differences may compromise equity, appropriateness, quality, and safety of healthcare provision, with economic implications of no secondary importance. For example, gender appears to influence overall healthcare resource consumption and costs because of possible differences in the patient's response to therapeutic strategies.<sup>3</sup> Therefore, gender medicine implementation is a valuable opportunity to reduce medical malpractice and patients' claims for compensation, thus getting benefits in terms of each one's psycho-physical well-being and healthcare systems' cost-effectiveness.

For this reason, gender specificity prioritization in experimental settings and preclinical and clinical studies should also aim at correct clinical recommendations/guidelines' production and objective forensic medicine practice.<sup>4</sup> The cognitive bias deriving from the traditional androgenic connotation of medical sciences has been – and still is – the source of medical malpractice in the form of misdiagnosis or delayed diagnosis, negligent medication prescribing, patient misinformation in consent obtaining, negligent documentation keeping, outdated of healthcare providers with the latest evidence-based practices. In various judicial systems, such as the Italian one (where law no. 24/2017 is in force), the healthcare practitioners' adherence to clinical guidelines may represent a legal reference to judge their behaviors in the courts in alleged professional liability cases.<sup>5</sup> Therefore, as gender inequality in subjects' enrollment remains a substantial challenge in clinical trials,<sup>1</sup> we must be aware of the risk arising from the use of improper instruments for evaluating healthcare practitioners' behaviors, with relevant consequences for possible medical liability recognition in judicial proceedings and healthcare systems' compensatory obligations.<sup>5</sup>

Finally, gender-related specificity is crucial in death investigations, post-mortem interval estimation, identification of human remains, interpretation of autopsy or toxicology findings, sexual assault cases' study, psychological assessment and trauma response, forensic genet-

ics, and DNA analysis.<sup>6-8</sup> They are all potential subjects of legal proceedings, in which forensic professionals appointed by the judicial authority to perform investigations should consistently adhere to the ethical duty of ensuring up-to-date and in-depth skills and knowledge for a proper case solution.

Thus, it is time to change. Italy recognized the importance of a gender-based approach in the care provision by approving law no. 3/2018 and promoting the 'Plan for gender medicine application and dissemination'. Moreover, a special observatory dedicated to gender medicine has been set up to provide the Ministry of Health with updated data.

However, much more lies ahead. Gender medicine's thorough knowledge, as well as its extensive and systematic implementation, deserves the attention of multidisciplinary study groups, which should promote targeted research studies aimed at understanding how gender influences health across the entire life span. Meanwhile, gender medicine should have priority at all decision-making levels of healthcare policies and be fully incorporated into forensic practice since it represents an essential means of clinical governance for a personalized healthcare provision and enhances the accuracy and reliability of forensic analyses, thus contributing to the fair resolution of legal proceedings.

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