**Briefing Paper**

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INFO 648 Health Informatics

Citation:

Mary Regina Boland, Noémie Elhadad, Wanda Pratt, Informatics for sex- and gender-related health: understanding the problems, developing new methods, and designing new solutions, Journal of the American Medical Informatics Association, Volume 29, Issue 2, February 2022, Pages 225–229, <https://doi.org/10.1093/jamia/ocab287>

Investment of medical research continues to grow however, the. Sex and the gender gap of health outcomes persists with poor support for the health cisgender and transgender women, intersex people, and all gender-diverse people (i.e., people whose gender identity and sex assigned at birth do not fully align). The sex (male or female) assigned to a child at birth, most often based on the child's external anatomy. Also referred to as birth sex, natal sex, biological sex, or sex. Informatics approaches have the potential to identify, address, and mitigate these disparities. For example, methods that elucidate the impact of sex as a biological variable, clinical decision support (CDS) systems, and personal health informatics tools are needed to specifically fit the needs of women, intersex people, and all gender-diverse people. The goal of this issue is to highlight such informatics research.

Gender Disparities is the differences in women’s and men’s access to resources, status, and well-being, which usually favor men and are often institutionalized through law, justice, and social norms. In informatics, especially clinical informatics, the focus is often placed on mid-visit microaggressions and other aspects of the clinical visit while it is taking place. However, this pre- and post-period when a woman is undertaking her daily life is often so vital in changing and modifying health behaviors in meaningful ways. Social media can be used along with novel informatics methods to identify the problems and address some of these gaps in informatics.

Gender diversity is an umbrella term that is used to describe gender identities that demonstrate a diversity of expression beyond the binary framework. the health information barriers that transgender and gender nonbinary people face and detail how they use information and communication technologies through a variety of information practices to help them overcome the barriers and biases in healthcare systems. To incorporate a 2-step gender question for intake forms, which includes separate questions for sex assigned at birth and gender identity and allows for inference of various gender-diverse categories with increased community acceptability.

Maternal Health Maternal health refers to the health of women during pregnancy, childbirth, and the postnatal period. Each stage should be a positive experience, ensuring women and their babies reach their full potential for health and well-being. The first developed a phenotype algorithm to identify this important and difficult to capture phenotype from EHR data. The follow-up study described a hemorrhage risk prediction algorithm that was based on the developed phenotyping algorithm. From a machine learning perspective, the prediction algorithm’s performance may appear somewhat modest; however, their algorithm outperformed other postpartum hemorrhage prediction tools. This demonstrates the importance of machine learning and other prediction algorithms on this important clinical task.

Sex differences refer to the differences in how males and females behave and think. Sex differences are driven by actual biological gender disparity, rather than by differing environmental factors (nurture), and affect our cognition and behavior. This is different than sex roles. Zhou et al explored the role of sex as a biological variable on clinical risk scores using blood pressure for predicting dementia. While Zhou et al used the phrase “gender-specific clinical risk scores,” these clinical risk scores were focused on male and female patients as identified by the EHR and therefore likely more accurately represent sex as a biological variable and its ability to impact blood pressure variability. These blood pressure variability scores then affected the risk of dementia development in the 2 populations (male and female).

The papers in this issue point out the critical need for further informatics research to understand and better support the special health needs of cisgender and transgender women, intersex people, and all gender-diverse people. Most informatics research still makes inaccurate and simplified assumptions that conflate sex and gender and force people into binary categories of male and female—ignoring the increasing prevalence of people who are intersex36 and rarely explicitly accounting for transgender, nonbinary, or other gender-diverse people. Even within this issue, the 2 papers that focused on sex differences excluded intersex people and failed to account for gender identities.

This is due to the underlying datasets used for analysis, which conflate sex and gender and lack representation for intersex and gender identify, and thus impede researchers’ ability to accurately represent sex and gender in their studies. Thus, as the gender-diversity papers illustrate, we need to modify our informatics systems at fundamental levels so that they represent all people and that all people’s health can be better understood and supported. While the results of this study are exciting, there are a few biases to consider beyond what the authors present in their article. Gender bias in healthcare is a critical, well-documented problem that endangers people’s lives and well-being. It is a component of sexism, which is a major cause of inequity worldwide, including health inequity. Gender bias affects diagnosis, treatment, and health outcomes, reducing the quality and effectiveness of healthcare.

In order to stop it, organizations and institutions need to commit to changing their policies and practices. Some examples of gender inequality or disparities in healthcare are Disbelief in symptoms. Stereotypes about gender affect how doctors treat illnesses and approach their patients. Workplace harassment, bullying, and discrimination. Gender bias also leads to discrimination against health workers. Gaps in medical research. Gender bias creates dangers in medical treatment. When both genders are not offered equal quality treatment and care for the same medical complaints or when different manifestations of disease are not considered based on sex, we can expect patient outcomes to suffer. Gender bias is seen across many specialties. Gender bias in healthcare is widespread. Patients, doctors, researchers, and administrators can all hold biased views about gender. These views affect how the healthcare system works and have a serious impact on health outcomes. Gender bias is a preference for one gender over another. Included articles were from each of the foundational domains of health informatics, focused on a range of marginalized populations, and primarily contributed to detecting and reducing disparities. Articles describing interventions typically focused on the healthcare system and, through a focus on patient populations, reduction of unequal consequences of illness.

This study identified barriers to care by gender identity. We found that transgender and GNC adults were more likely to be uninsured, to have no usual source of care, and to forgo needed medical care due to cost, compared with cisgender women, the comparison group used in this study. These results should raise concerns that transgender and GNC individuals lack equitable access to health care. Given the unique health care needs of the transgender and GNC population, the findings from this study should serve as a call to improve access to care for transgender and GNC adults. Doing so may include addressing insurance-based and financial barriers to care, creating welcoming environments, and training providers on issues related to gender identity. With recent, and growing, public attention paid to the transgender and GNC community, the time to address these issues is now.

The sex and gender related health problems and should be going to get less because of technology the modern solutions on this will figure out the best way to solve it like the AI/ML data gathering and representation while birth. Awareness of the sex and gender knowledge in public and give them rights to the freedom of life is more important in this generation where people don’t care about what society will think about the people’s sex and gender problems. The documentation and rights for the other genders should be equal, they get the same thing which normal gender people gets. Everyone should get what they want in their life because it would be great to work and celebrate with all genders and live life peacefully.

References:

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