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e-Health and m-Health Gender Applications

Overview

Background: Beyond biological sex, gender is increasingly recognized as a pivotal determinant of health. However, there are no standardized gender measurements. We hypothesize that gender-related factors and their effect will vary substantially between countries and diseases.

Aims: The overarching aims of this large Consortium are to integrate sex and gender dimensions in applied health research, to evaluate their impact on clinical cost-sensitive outcomes and patient reported outcomes related to quality of life in noncommunicable diseases including cardiovascular disease, metabolic disease, chronic kidney disease and neurological disease. We also aim to construct innovative ways to disseminate the application of gender measurement towards personalized approaches to chronic disease prevention, diagnosis and treatment.

Methods: With a five-country transatlantic network comprised of 30 investigators, we will benchmark innovative solutions to measure gender in retrospective cohorts. Based on consensus, we will develop a framework to identify gender-related factors, as well as cost-sensitive and patient reported outcomes and measure their associations in 32 accessible cohorts of patients affected by cardiovascular, chronic kidney and neurological diseases and metabolic syndrome. Large database analysis and when appropriate machine learning approaches will allow the derivation of pan- and within-country disease specific gender scores which will be validated through e-Health and m-Health applications in prospective disease groups. Educational modules will be developed to promote awareness, implementation and dissemination.

Innovation: As a five-country multidisciplinary Consortium with access to granular large databases, we are uniquely positioned to harness an innovative methodology that will provide a framework to close gender gaps in chronic disease management and promote knowledge transfer in the scientific community and clinical practice.

Main results

Sex, a biological construct, and gender, a social construct are two distinct variables that may independently influence human health. Despite calls for inclusion of sex and gender into health sciences research, gender is often ignored or conflated with sex. In this commentary, we provide clarification of the distinction between these two variables and concrete examples of gender-related variables that can be collected under the flour domains of gender identity, gender roles, gender relations, and institutionalized gender. We also provide methods for incorporating these variables into statistical analysis. We hope these guidelines will help researchers in their efforts to incorporate gender into their studies, thereby meeting requirements of funding agencies and ultimately improving health equity precision medicine. Anticipated impacts include gender sensitive education/training and policy aimed to improve health outcomes across Noncommunicable diseases (NCDs). Additionally, the incorporation of gender in risk models in applications will aid in the development of gender-responsive interventions to prevent, diagnose, treat and improve health outcomes across NCDs inside and outside academia. Finally, we will facilitate the dissemination of our research findings through publications (open access) and presentations at national and international congress meetings making North American and European audiences aware of the findings and create an interdisciplinary network that influences both individual practice and policy.

Team members

	Woman	Man	Other
Gender balance in the whole consortium	37 (76%)	12 (24%)	0 (0%)
Presence of women as lead researchers/PIs	6 (100%)	0 (0%)	0 (0%)
Gender Experts in the team	13 (76%)	4 (24%)	0 (0%)
Subsequent team members trained on Gender equality and IGAR	37 (76%)	12 (24%)	0 (0%)

Contribution to the achievement of UN Sustainable Development Goals (SDGs)

SDG 5 Gender equality + SGD3 Good Health and Well-Being

The GENDER-NET Plus Joint Call on Gender and United Nations Sustainable Development Goals provides a unique unparalleled opportunity to further our understanding of the impact of the intersectionality of gender-related factors on health outcomes in patients with chronic diseases in a multinational context. As a Consortium, GOING-FWD will build upon the existing user and expert community in Canada to establish an international knowledge and expertise sharing platform for health care providers, researchers and patients. GOING-FWD will endorse and embed knowledge transfer practices, including sharing and disseminating knowledge through e-Health and m-Health applications that will actively move the measurement of sex and gender-related variables into both scientific and clinical practice.

Differences/inequalities between women and men highlighted by the project

The project has not brought on any differences in inequality. If anything, it has created more equality. We have provided evidence that beyond sex, gender-related factors do matter when it comes to patients' outcomes, and we explored the magnitude of such effect across different countries and culture. For example: 1) A global study that showed how institutionalised gender was positively associated with the male:female ratio reported cases of coronavirus disease 2019 (COVID-19) among countries that report sex-disaggregated data. (Tadiri CP et al. The influence of sex and gender domains on COVID-19 cases and mortality. CMAJ. 2020 Sep 8;192(36):E1041-E1045). 2) A study that leveraged two large national public health surveys representative of the countries' respective populations to investigate the gendered impacts of social factors on self-reported health and access to care and to determine if these influences vary by country. Canadians and Austrians reported high perceived health and low levels of unmet healthcare needs, however biological sex, many social determinants and their interactions with sex contributed to explaining these outcomes, implying gendered impacts of social determinants of health and access to care. (Tadiri CP, et al. Determinants of perceived health and unmet healthcare needs in universal healthcare systems with high gender equality. BMC Public Health. 2021 Jul 31;21(1):1488). 3) A study showing that individuals with characteristics typically ascribed to women reported poorer cardiovascular health and higher risk of heart disease, independently from biological sex and baseline CV risk factors, in Canada and Austria. Female sex exhibited better CV health and a lower prevalence of heart disease than male in both populations. However, gender factors and magnitude of gender impact varied by country. (Azizi Z, et al. Sex, Gender, and Cardiovascular Health in Canadian and Austrian Populations. Can J Cardiol. 2021 Aug;37(8):1240-1247).

Positive impact of the project on gender equality/scientific evidence on gender in the field

Construct innovative approaches to disseminate and apply sex and gender knowledge: An interdisciplinary approach will be used to integrate sex and gender considerations across the age continuum in relation to physical and mental health. Anticipated impacts include education/training, policy, and risk estimation considering gender. Such groundbreaking work will inform the design of gender-responsive interventions to prevent, diagnose, treat and improve health outcomes across NCDs. Expected short term outputs include: a) Education/training: establish specific sex and gender-sensitive education modules that will be country/region specific; b) Sex and gender informed guidelines/policy: to prevent, diagnose, treat and improve outcomes across NCDs; c) e-Health and m-Health gender applications: for researchers, health care providers and policy makers; and long term outputs; d) Personalized technologies to prevent, diagnose and treat NCDs: apply learnings to develop tailored sex and gender specific interventions for NCDs management that are cohort/country specific.

- Publications on gender equality and gender factors
- Opportunity for researchers for both young women and men in their early career stage.
- Training for IGAR and gender equality was definitely achieved now for ESR under our recent education event together with ACT on gender consortium

Socio-economic impact; involvement of policy makers/civil society

- Paper on Methods
- Health Canada (Louise Pilote is the Co-Chair of the SAC-HPW committee)
- We have 8 Patient partners
- CIHR Sex and Gender Fact sheet
- GENDER-Net Interviews