

The impact of the COVID-19 pandemic on sex- and gender-sensitive research policymaking

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Summary. In the last and in the current year health research and health research policy had to address the challenges of the COVID-19 pandemic. Given the role of sex and gender in viral infection and disease development, consideration of these variables in COVID-19 research appears imperative. Biological sex can modulate immunological and pharmacological responses; gender-related aspects can impact access to testing and care as well as long-term socioeconomic consequences of the pandemic. In light of these considerations, both European and national research efforts have come to address the topic. In the following manuscript we draw on years of study of the incorporation of sex and gender into EU research and innovation. We highlight the supranational approach and its national trickle-down effect using the example of the Netherlands. We provide an overview of implementation steps needed to achieve a thorough incorporation of sex and gender in the research process in an intersectional manner. The illustrated process could be adapted to local European contexts in consideration of their national priorities, political situation and available resources supporting the EU-wide institutionalization of the topic.

Key words. Sex, gender, research, EU, implementation, institutionalization.

Impatto della pandemia di COVID-19 sul processo decisionale della ricerca sesso- e genere-specifica

Riassunto. Nell'anno appena trascorso e in quello attuale la ricerca sanitaria e le politiche legate alla sua attuazione hanno dovuto affrontare le sfide poste dalla pandemia di COVID-19. Considerato il ruolo svolto dal sesso e dal genere nelle infezioni virali e nello sviluppo delle malattie, prendere in considerazione queste variabili nelle attività di ricerca sulla COVID-19 è un imperativo. Il sesso biologico può modulare le risposte immunologiche e farmacologiche; gli aspetti legati al genere possono influire sull'accesso ai test e alle cure, nonché sulle conseguenze socioeconomiche a lungo termine della pandemia. Alla luce di queste considerazioni, la ricerca sia a livello europeo sia nazionale è giunta ad affrontare questo argomento. In questo articolo facciamo ricorso a anni di studi sull'inserimento di sesso e genere nelle attività di ricerca e innovazione dell'Unione europea. Sottolineiamo l'approccio sovranazionale e gli effetti della sua ricaduta a livello nazionale, utilizzando l'esempio dei Paesi Bassi. Forniamo una panoramica delle fasi di implementazione necessarie per ottenere una completa integra-

zione di sesso e genere nel processo di ricerca in modo intersezionale. Il processo illustrato potrebbe essere adattato ai contesti locali europei in considerazione delle priorità nazionali, della situazione politica e delle risorse disponibili a sostegno dell'istituzionalizzazione di questo argomento a livello europeo.

Parole chiave. Sesso, genere, ricerca, EU, implementazione, istituzionalizzazione.

Introduction

The ongoing COVID-19 pandemic has highlighted the impact of sex and gender on the risk, incidence and clinical course of disease. It also reiterated the importance of social determinants of health and their impact on infection, treatment and long-term consequences of illness.

In the current paper, we want to summarize some of the recent developments in the field of sex- and gender-sensitive research and practice at the European policy level and their trickle-down effects at the national level. We illustrate how supranational bodies, such as EU institutions, can impact local policy. We will use the Netherlands as an example for this process. We argue that the current pandemic offers a unique opportunity to promote sex- and gender-sensitive research and that the translation of supranational policy into local action can generate momentum that could persist beyond the pandemic.

The 2020 status quo

Since the beginning of 2020, Europe and the world have been confronted with an unexpected pandemic caused by the SARS-Cov-2 virus.¹ Although related to other Sars viruses, SARS-Cov-2 was a new and virtually unknown virus.² Healthcare professionals, hospitals, national public health bodies and many other agencies rushed to action. Targeted research activities to understand the virus and identify potential protective mechanisms and eventually a cure or vaccine rapidly increased. Research budgets worldwide were shifted to COVID-19 research.³ Often this implied a hold on running budgets or calls

for other research topics. Researchers started addressing domains like predictive diagnostics and treatment, prevention and care and the societal impact of the pandemic. One aspect was evident from the first phase: more men than women were dying of COVID-19.⁴ Although most funding in the acute phase was directed at diagnostic and therapeutic efforts, other consequences were also highlighted. COVID-19 can affect all domains of life and these impacts have a gender dimension.⁵ For example, women are more likely to work in contact professions in healthcare or education increasing their risk of being exposed, duties of care are shared unequally in many households, intersectional vulnerabilities affect women more often and an increase in gender-based violence is recorded in many countries worldwide.

After an initial lack of sex-disaggregated data, one organisation in particular stepped up to fill the growing data gap: Global Health 50/50.⁴ Global Health 50/50 is a mainly volunteer-based organization that aims at advancing action and accountability for gender equality in global health. Their monthly reports provide insights on the latest data, key takeaways, trends and gaps in reporting. Their COVID-19 sex-disaggregated data tracker is currently the world's largest database of sex-disaggregated data on COVID-19. In addition, the GenderSciLab's COVID tracker started providing sex-disaggregated data from the United States.⁶ Other essential activities were organized by the international interprofessional 'Gender and COVID-19 Working Group' coordinated by doctors Morgan, Smith and Wenham.⁷ The network offers a large and diverse set of resources such as e.g. a continuously updated database, networking meetings and collaborative thematic project groups.

EU policy level

In 2002 the EU became the first science funding body in the world that required attention to the so-called 'gender dimension' in research and innovation. Addressing the gender dimension falls under the umbrella of the EU Gender Equality Policy, which in short aims at achieving the following objectives:

1. gender equality in scientific careers,
2. gender balance in decision making,
3. integration of the gender dimension into the content of research and innovation.

Introducing this third objective resulted from protracted lobbying activities and represents a milestone for the implementation of sex and gender sensitive research. The complexity of the 'gender dimension' concept had to be made explicit for the research community. It entails the consideration of biological sex differences and of socio-cultural gender influences in the content of re-

search. The relevance of sex and gender aspects differs for different fields of research, but in the health field both apply. The quality and accountability of research increases when the gender dimension is taken into account. The gender dimension is part and parcel of research excellence. It enhances the societal relevance of the produced knowledge, technologies and innovations. It contributes to the production of goods and services better suited to potential markets.⁸ In the early years of this policy, the gender dimension was often confounded with gender balance leading to the conflation of the structural and the content level. We will specifically focus on the third policy objective, the 'gender dimension', as it pertains to the COVID-19 pandemic.

The European Commission (EC) stresses that an institutionalization process of sex- and gender-sensitive research needs to combine actions at the structural and the content level. In this, the EU differs from other regions of the world, such as the United States or Canada, which also target the goal of implementation, but chose a different framing of the issue.^{9,10}

European Framework Programmes are the main source of science funding in the EU context. They generally run for seven years and have been previously numbered, e.g. FP5, FP6 or FP7. FP8 lasting from 2014-2020 has been the first framework programme with its own name 'Horizon 2020' and will be followed by 'Horizon Europe' (2021-2027). Horizon 2020 puts an emphasis on excellence in science, inclusion of industry and a strong focus on societal challenges. This emphasis on the societal dimension validates the request for integration of sex and gender in practice. Without the consideration of sex and gender and their impact on research and innovation, the applicability of results to all individuals cannot be achieved. This EU gender equality policy, in place since 2002, was not immediately adopted by national science funding bodies in Europe. Over the years some good practices have emerged in some member states such as Ireland, Germany, Norway, Austria and Italy. These practices range from e.g. national laws for the implementation of the gender dimension in teaching or healthcare to the mandate to report the impact of sex and gender on research. However, there is no general adoption of the EU example and conditions by all member states.

The European Commission has been at the forefront of supporting research and innovation and coordinating European and global research efforts, including preparedness for pandemics.¹¹ In addition to a number of past and ongoing research actions related to coronaviruses and outbreaks, the Commission launched several special actions in 2020. These actions address epidemiology, preparedness and response to outbreaks, the development of diagnostics, treatments and vaccines, as well as the infrastructures and resources that enable this

research. In all of these research calls the gender dimension had to be explicitly addressed.

To guide researchers in addressing the gender dimension overall and specifically in relation to COVID-19 a variety of tools and actions have been implemented over the years.

- a. Expert Groups, such as Gendered Innovations/‘Innovation through Gender’ (2011-2013), the *ad-hoc* Advisory Group for Gender under Horizon 2020 (2014-2018) and the Expert Group Gendered Innovations 2 (2018-2020). These groups serve both as monitoring and pressure groups as well as expert teams to develop methods and case studies.
- b. Case studies
 1. In the context of the running Expert Group Gendered Innovations 2 an *ad hoc* case study was developed to highlight the broad relevance of sex and gender on COVID-19.¹²
 2. The ERAC (European Research Area and Innovation Committee) Standing Working Group on Gender in Research and Innovation produced a position paper on the current COVID-19 outbreak and gendered impacts on researchers and teachers.¹³
 3. A factsheet was produced by the EU Commission explaining why sex and gender matter in COVID-19 disease.¹⁴
- c. An *ad hoc* website was produced by the EIGE, Europe’s Institute for Gender Equality, to raise awareness about the gendered impacts of COVID-19 on society.¹⁵ The information draws on EIGE’s existing research and gender statistics to highlight the different realities that women and men could be facing in light of this pandemic. It also formulates ideas for policymakers to ensure that the gender perspective is considered in relevant decisions during and after the pandemic that affect every citizen.

National policy

We will now proceed to delineate the parallel and correlated activities in the Netherlands as an exemplification of how EU policies can affect and support implementation at the national level.

The Dutch Alliance for Gender & Health was established in 2012 on the initiative of WomenInc, a non-profit organization engaged in the promotion of gender equity. As an expert alliance consisting of medical specialists, psychologists, knowledge institutes, scientists, gender experts, and policy makers this alliance was an essential and very effective pressure group at the national level. It’s cross-disciplinary nature guaranteed the inclusion of a diverse group of stakeholders and supported the targeting of different structures within the

Table 1. The Dutch Gender and Health Knowledge Agenda: thematic priorities and targeted research phases.

Themes
General practice
Participation
Diabetes
Pharmacotherapy
Cardiovascular diseases
Intimate partner violence
Migraine
Mental health
Rheumatology
Medically unexplained symptoms (MUS)
Aging
Women’s health
Targeted phases of the research process
1. Knowledge assembly and dissemination
2. Development of new knowledge
3. Knowledge transfer and implementation

healthcare system. Its structure was eventually institutionalized in the form of the professional society ‘Dutch Society for Gender and Health’ founded in the year 2017 (www.genderengezondheid.nl). The Alliance for Gender & Health produced a ministerial report, a so-called ‘Knowledge Agenda’ defining research priorities in 12 areas (Table 1). The Alliance was also successful in lobbying for a specific research programme ‘Gender and Health’ funded by the Ministry of Health (VWS). The programme runs from 2016-2020 with a budget of 12 million euro to address the identified research priorities and different moments of the research process (Table 1). The funding conditions, i.e. the conceptualization of sex and gender and the methodological requirements for this programme were modelled on the EU practice, but tailored to the Dutch funding system. Specifically, in the Netherlands applicants have to address multiple dimensions upon submission of a grant, such as e.g. diversity, implementation, inclusion of patients. The intersection of sex and gender with these dimensions still needs to be harmonized.

COVID-19 related activities

An overview of the current pandemic-related situation in the Netherlands can be found on the website of the National Institute for Public Health and the Environment. The extended weekly briefs provide sex-disaggregated data on most indicators. However, sex and gender are not a primary focus of the National Institute’s agenda.

To rapidly address pandemic-related questions the 'Gender and Health' programme facilitated extensions of running projects. This offered the ongoing sex and gender-related projects an opportunity to rapidly address questions relevant to COVID-19. These extensions ranged from questions about differences in testing practices as well as the mental health burden of COVID-19 to the impact of the pandemic on domestic violence.

A comparable and timely effort to collect and spread information about COVID-19 from a sex and gender perspective was the series of newsletters produced by the Dutch Society for Gender & Health 'Gender in Times of Corona'.¹⁶ In this newsletter, and to the best of their knowledge, the authors aim to provide an update of the latest sex- and gender-related knowledge, literature, and news on COVID-19 and sex/gender. The focus was not solely the biological and medical aspects of the outbreak, but a broad overview and understanding of coronavirus COVID-19 and how it is related to sex and gender.

Possible effects of the COVID-19 pandemic on sex- and gender-sensitive research

The COVID-19 pandemic has placed practitioners in the field of sex- and gender-sensitive medicine in a different situation compared to the one they commonly encounter. Instead of having to encourage researchers and clinicians to consider the impact of sex and gender on the pandemic, the medical community generally appears to accept these differences. This general acknowledgement places the discipline in a new position and supports advocacy for the topic.

It highlights the importance of disaggregated epidemiological measures, sex-disaggregated data in trials and a general need for the inclusion of the sex and gender dimension.

This general acknowledgement of the role of sex and gender in COVID-19 can, however, translate into a simplistic perception. Looking at the media and the societal discourse, we can witness the highlighting of very stereotypical aspects. The reported excess mortality in men generally shadows the potentially higher infection rates in women and the systemic conditions that lead to such a difference in infection, e.g. care for the infected in the private and professional sector as well as higher representation in essential sectors. Furthermore, the competing demands on parents are often portrayed as the lone struggle of mothers. Although this might be very well true in many cases, it is nonetheless a simplified description of the complex reality of competing work and care demands on caregivers. Several authors have described the complex impact of gender¹⁷ and intersectionality¹⁸ on the COVID-19 pandemic and the risks of one-dimensional analyses of epidemiological trends.¹⁹ Specifically,

they point out how gender is significantly affecting socio-economical dimensions beyond health, potentially disrupting existences. They highlight how women and men are not uniform groups and that multiple axes of discrimination can potentiate the devastating effects of the pandemic. And they remind researchers that social determinants might be more relevant than biological differences in determining some of the identified differences in incidence and severity of the disease.

The current situation emphasized how a structured approach to the inclusion of sex and gender is needed, currently and also beyond the pandemic. Looking back at the progress achieved at the EU level, one can identify several steps which can be translated at the national level. Design and implementation need to take into account the national discourse on the subject and the local priorities, nevertheless, a supranational blueprint can help in laying out a possible approach (Figure 1). The first and essential step to take has to be the definition of the concept of sex and gender to be addressed. As the 'gender dimension' has demonstrated, institutionalization of this dimension requires action at the structural and content level and these need to be clearly defined and possibly disaggregated. The legislative context is an essential aspect to consider. Is gender equality defined as a national constituting principle? Can this be translated into the research and practice field? This should be followed by broad stakeholder engagement actions, for the practitioners but also for the general public. If the topic is framed as a societal value, it needs to be addressed from a societal perspective. Then, specific funding programs can follow, which might address the most pressing questions. This will depend on the available funds and the ability to generate enough acceptance for this novel approach. National funding agencies will have to decide whether they want to prioritize structure, i.e. gender equality, or content, i.e. sex- and gender-sensitive research. On the basis of the generated knowledge, mandatory inclusion of sex and gender in research grants can be requested. At the EU level, the projected mandate to include a gender equality plan (GEP) upon request of funds will potentially force institutions to consider both dimensions. A final and fundamental aspect that will have to be considered is the monitoring of the policy. Without monitoring, limited uptake has to be expected. It will be important to decide who is responsible for monitoring, at which steps of the process it needs to happen and how it can be ensured in the long-term.

The EU region's progress in the field of gender equality and sex- and gender-sensitive research has been a long process, which can serve as a model for member states. Many aspects still need to be addressed, such as an essential focus on intersectionality to investigate the concomitant or additive role of other forms of inequality based on socio-economic status, ethnicity, sexual

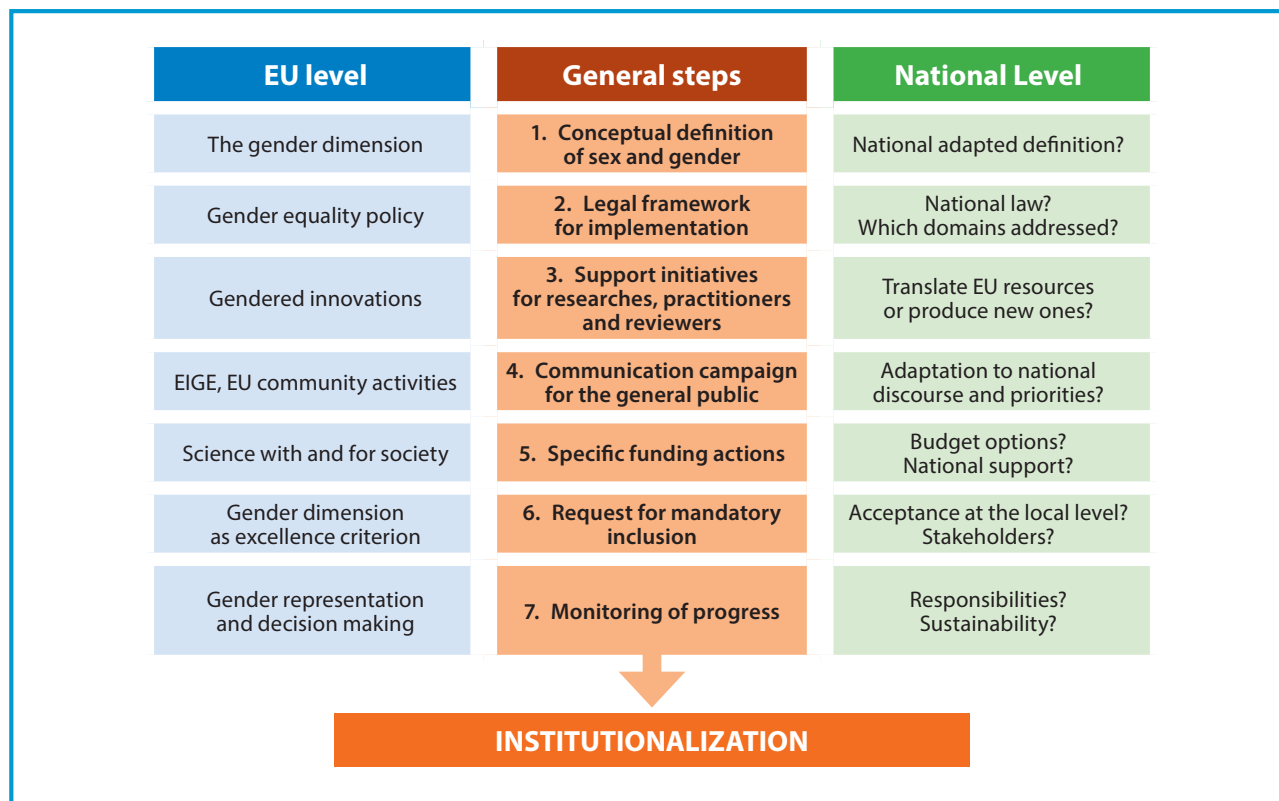


Figure 1. General implementation steps at the EU and national level. Starting from the EU level initiatives, we distilled the guiding implementation steps and propose comparable areas of investigation at the national level.

orientation, able-bodiedness etc. Nevertheless, the framework chosen at the European level is proving its effectiveness over time. If member states aim to achieve similar levels of implementation in research and practice, they can follow this example and adapt it to the local practices, resources and priorities. Different European realities will work at a different pace owing to the

different starting points of the member states, their current political leadership and the potentially available resources. However, the steps are universal and can be translated at varying levels of depth in the system. One common aspect to all practices will, however, be the need to consider structural and content aspects in concert to achieve full institutionalization in the long term.

Key messages

- The COVID-19 pandemic is highlighting the importance of a sex- and gender-sensitive approach to research.
- Sex and gender analysis include structural as well as content dimensions, i.e. the ‘gender dimension’ according to the EU Commission.
- The pandemic also highlighted the need for attention to intersecting factors such as age, ethnicity, socioeconomic status, sexual orientation, able-bodiedness etc.
- The implementation process of the ‘gender dimension’ is a stepwise process that encompasses a broad range of actions by different stakeholders at multiple levels.
- The EU level blueprint can be adapted to national contexts considering local priorities, political willingness and available resources.

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