



Project no. SAS6_016630-

GenderBasic
Promoting the integration of
the gender dimension
in basic research in ERA/FP7

Instrument: SSA
Thematic Priority: Women & Science

Publishable final activity report

Start date of project: 01/10/2005

Duration: 27 months

Project coordinator: I. Klinge
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GenderBasic: Promoting integration of the gender dimension in biomedical and health related research

Contractor: Centre for Gender & Diversity, Maastricht University, NL

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www.GenderBasic.nl

Final activity report

1. Project execution

Project Objectives

In FP6, guidelines for integrating gender equality in life sciences research have been introduced. These guidelines are relatively new for researchers in basic and clinical research and they consider these guidelines a top down instrument aimed to accomplish a change of research practices. Real *awareness* of gender issues in basic and clinical research and *integration* of the gender dimension in research practices is not yet well developed. It is clear that for a better integration of the gender dimension in the research practice, development and dissemination of expertise on the subject and an awareness of the benefit of integrating the gender dimension in the research is needed. Integration of the gender dimension in basic and clinical research can be seen as an innovative change of current research practices. Such a change can only be accomplished if the researchers involved view this change as necessary, feasible and contributing to the quality of their research. Needed to establish this change is a dialogue with the target group, i.e. the researchers and experts. This dialogue will lead to realistic and broadly supported recommendations for conducting gender sensitive research and tools to facilitate that on the basis of evidence and input from actual research practices. The objective of this SSA is to ensure a better integration of the gender dimension in basic and clinical research projects. More specifically the project aims at supporting researchers and evaluators and EU services to integrate the gender dimension. The support for scientists involved in health related research (with a focus on basic and clinical research) will consist of practical tools, relevant examples and best practices as regards paying attention to sex and gender in the contents of their research.

Specific objectives are:

- Inventory of problems researchers experience when integrating gender issues in their basic and clinical research projects.
- Identification of relevant experts in basic life sciences research, clinical researchers, epidemiologists, social scientists and gender researchers in life sciences.
- Review of specific problems by the experts.
- Organisation of an expert meeting.
- Inventory of solutions for integration of the gender dimension in basic and clinical research.
- Development of practical tools for researchers to integrate gender issues in research and research plans
- Production of a report and recommendations
- Dissemination of the results of the project

Project Activities

- An assessment of facilitating and inhibiting factors for the incorporation of attention to sex differences and/or gender effects in basic and clinical research among selected FP6 life sciences research projects (WP 2)
- An assessment of facilitating and inhibiting factors for the incorporation of attention to sex differences and/or gender effects in basic and clinical research among research coordinators of acclaimed European Research Institutes in the life sciences (e.g., Inserm, Charité, Karolinska) (WP 3)
- Inventory of experts in basic life sciences research, clinical researchers, epidemiologists, social scientists and gender researchers in life sciences (WP4)
- The production of topical papers by experts, describing best practices and possible solutions for identified methodological and conceptual issues: (e.g. equitable inclusion of men and women, sub group analyses data, sex-gender interactions)(WP 5)
- The production of reviews on selected diseases and health areas where attention to sex and gender aspects is urgently warranted (anxiety disorders, asthma, metabolic syndrome, nutrigenomics, osteoporosis and work-related health)(WP5)
- A meeting for researchers and experts to discuss proposed solutions on issues regarding the incorporation of attention to sex differences and/or gender effects in the content of basic and clinical research. (January 26-27, 2007)(WP 5)
- The development of tools to advise EU services, researchers and research evaluators on how to improve attention to the gender dimension in basic and clinical research (WP6)
- The development of a website and plan for using and disseminating knowledge (WP7)
- The development of a research agenda (WP8)

In this way GenderBasic aimed to contribute to the development of standards and to improve the quality of research in order to meet the goals set by the EU concerning scientific excellence.

Project Results

The most important activity of GenderBasic was the Expert Meeting held in January 2007 in Maastricht. The meeting created great enthusiasm among the participants and a real exchange took place between researchers from various backgrounds. The sincere commitment of the male experts was particularly striking. Most life sciences researchers were familiar with the concept of sex differences but confessed that the effects of socially constructed gender had until recently, received too little attention. This may partly explain why a literature search using the search term *gender* mainly retrieved articles on sex differences.

Prominent result of GenderBasic has been the publication of all 10 reviews, prepared for the Expert Meeting, in *Gender Medicine*, Volume 4, Supplement B, December 2007. GenderBasic coordinator Ineke Klinge as guest editor wrote the introduction: *Bringing gender expertise to biomedical and health related research*.

As a whole the project resulted in three major scientific accomplishments.

I. It stimulated and promoted research into sex differences

- The relevance of studying sex differences was exemplified in many reviews, although to a different extent
- Sex-specific gene expression at the transcriptional level in somatic tissue until now is mostly descriptive



- The implementation of basic science results was questioned. How to go from sex differences in basic research to clinical importance / relevance
- Suggestions were given on prerequisites for the study of small differences in animal research, because they may have additive or synergistic effects
- Sex differences are closely related to sex hormones and especially estrogens. Androgens seem to be studied less frequently.
- Attention was drawn to the differences *within* the sexes

II. It stimulated research into workings/ mechanisms/effects of gender as visible in particular in:

- Understanding masculinity, male gender role and the effects on individual health behaviour (in osteoporosis; in asthma, in work-related health, in food allergy)
- ‘Candidacy’ and Yentl syndrome. The unnoticed higher risk of cardiovascular disease in women with the metabolic syndrome, lack of screening for osteoporosis in men and osteoporosis drugs only tested in women can be explained by the notions of ‘candidacy’ and Yentl syndrome. *Candidacy* refers to the neglect of the other sex if a condition is labelled as ‘female’ or ‘male’ disease. *Yentl* syndrome refers to the fact that a woman has to masquerade as a man in order to receive the same treatment.

III. It highlighted interaction between sex and gender and granted gender a prominent place in future research.

- GenderBasic focused on the interaction of sex and gender at all levels, from the sub-cellular (molecular/genetic) to the societal (population level).
- All reviews acknowledged the interaction between sex and gender and other dimensions of difference (age, ethnic origin, socio-economic status) as well. Future research is expected to yield more information regarding gender roles and health behaviour. At present such data are rare in the reviewed literature on the six conditions

Conclusions

The driving force behind the GenderBasic project is the EU gender equality policy for research. This policy has brought together the elements of women’s participation and the gender dimension of the research content in the formula $GE = WP \text{ and } GD$.

GenderBasic focused on the gender dimension of the research content by stimulating attention to sex differences and gender effects in biomedical and health related research. Its mission is striving for innovation of biomedical and health related research practices. The commissioned reviews and invited comments are promising examples of the intended innovations.

The GenderBasic project promoted balanced, justified attention to both sex differences and gender effects, and proposed an agenda for future research. Differences of both kinds are interesting and relevant, and are best studied in multidisciplinary teams. The most interesting areas of study are not the differences per se, but the studies on how differences develop. The new perspectives and models developed through the GenderBasic project support this view and are helpful in realizing and executing the resulting research agenda.

The impact of the project is illustrated by the election of the project as an FP6 success story. GenderBasic will be included in a booklet, published by the Commission, as a political tool to communicate outstanding European research results in a short and attractive way, to be understood widely. The publication, edited by the European Commission, is going to be translated in four languages and largely distributed to the general public, National & Regional

authorities, European Parliament, Delegations and Representation of the European Union all over the world. Below is the final text.

Sex matters – in life sciences research

When it comes to the life sciences, sex matters, and scientists need to take this into account when carrying out research, according to the GenderBasic project.

Thanks to a combination of biological (sex) and social (gender) differences, men and women face different risks of a number of diseases and conditions; for example, women are twice as likely as men to develop Multiple Sclerosis, a chronic illness that affects the nervous system. Meanwhile men have a higher risk of heart attacks, but many women suffer from a different form of heart disease that is easily missed by standard tests.

Furthermore, men and women often respond very differently to drugs. Yet all too often, scientists fail to take these differences into account when designing and performing research and analysing their results. As a result, many women are subjected to tests and given drugs which have only been tested on men.

The EU sought to address this problem by requiring projects funded under the research, technology and development (RTD) Framework Programmes to submit a gender action plan. However, evaluations revealed that there was often a gap between what was written in the gender action plan and what happened in practice.

Now the GenderBasic project has come up with a set of practical tools, examples and best practice recommendations to help scientists incorporate sex and gender differences into their research more effectively.

Getting down to basics

The project team, led by Dr Ineke Klinge of the University of Maastricht in the Netherlands, analysed the factors which facilitated or inhibited the incorporation of the gender dimension into basic / preclinical, clinical and public health research in selected EU funded life sciences projects and at leading European research institutes. They also commissioned international experts on sex, gender and health to write review articles on the relevant methodological, practical, ethical and financial issues as well as the impacts of sex and gender on a number of diseases and conditions. The articles appeared in a special edition of the journal *Gender Medicine* (Vol 4, Suppl B, December 2007).

Based on their analyses, the GenderBasic scientists produced a set of recommendations to help scientists, funding agencies, the pharmaceutical industry, governments and other stakeholders ensure that sex and gender differences are given the attention they deserve.

When factoring in gender can save lives

The review articles commissioned by the project highlight the extent to which disease susceptibility differs between the sexes. For example, before puberty, asthma is more common in boys than in girls. In adulthood however, it is more common in women than in men. Asthma is an extremely complex disease, with many genetic and environmental factors contributing to its development. The scientists speculate that a combination of hormonal changes and genetic susceptibility could contribute to the change in prevalence during adolescence.

Among other things, the paper calls for more studies in animals investigating the observed differences between males and females and their susceptibility to hormonal and environmental factors in relation to lung development. It also underlines the importance of studying differences in response to treatments.

Another article reveals how the absence of gender balance in the research can also have negative consequences for men. The paper is about osteoporosis and fracture risk research. Sex hormones play an important role in bone development, and differences in the levels of these hormones mean that men have structurally stronger bones, are less likely to develop bone loss than women, and so experience fewer fractures than women.

Currently, much of our understanding of osteoporosis and fracture risk is based on research on women, and most of the drugs used to treat osteoporosis were only tested on women. In contrast, detailed data on men is lacking.

Osteoporosis and fracture risk are under diagnosed in women, but the problem is even greater in men. This problem is compounded by the fact that because women have more frequent screening opportunities than men, their problems are usually picked up at an earlier stage.

For both examples, studying the impact of gender role behaviour in relation to disease development and management was emphasized. The study of the interaction of sex and gender from a life course perspective was firmly put on the research agenda.

Closing the gap – recommendations for gendered innovations in research

If the research community is to tackle this serious problem, action is needed on a number of fronts. Among other things, the project partners recommend that research studies and clinical trials should include both men and women as subjects, and if this is not the case, researchers should explain why one sex has been left out. Furthermore, results should be disaggregated by sex.

This consideration of the impact of sex on health outcomes should also be considered by those carrying out research on animals or on tissue samples taken from humans.

Research funding agencies are called on to promote research that links biomedical and social dimensions, including gender dimensions. The editorial boards of journals are encouraged to request that papers present data disaggregated by sex and explain sex and gender differences adequately.

Meanwhile the GenderBasic researchers are still driving forward their aim of integrating sex and gender into research. They are particularly keen to turn their results into a training module, aimed at the research community, on the sex and gender aspects of biomedical and public health research.

‘I really think that for life sciences and health research, it is integral to view the sexes as different from the molecular to the social level,’ comments Dr Klinge. ‘Gender experts have a lot of expertise to offer concerning the influence of gender in biomedical and public health research and this was very well acknowledged in the project. I think one of our major strategies is to convince people to see that addressing sex and gender aspects is not necessarily feminist but a question of quality of research.’

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2. Dissemination and use

Overview table

Planned /actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
25-09-07 18-03-08 03-10-07 09-10-07	<i>Press release(press/radio/TV)</i>	<i>General public</i>	Holland, EU-countries	<i>Unknown</i>	<i>UM</i>
2007	<i>Media briefing</i>	<i>Scientists, General public</i>	Inter-national	<i>Unknown</i>	<i>UM</i>
26-27-01-07 14-03-08	<i>Conference</i>	<i>Scientists</i>	Holland, Brussels, Italy, Lituania, Sweden	<i>Various</i>	<i>UM</i>
<i>N=21</i>	<i>Publications</i>	<i>-Scientists -Conference participants</i>	Inter-national	<i>Various</i>	<i>UM</i>
	<i>Project web-site</i>	<i>General public</i>	Inter-national	<i>Unknown</i>	<i>UM</i>
	<i>Posters</i>	<i>Conference participants</i>	Germany Sweden	<i>Various</i>	<i>UM</i>

Details on the overview table Dissemination of knowledge

Press release (press, radio/TV)

25-09-07 Press release Maastricht University

GenderBasic deemed 'success story' by European Commission

(GenderBasic blijkt 'success story'. Pluim Europese Commissie voor UM-project)

18-03-08 Cordis News Today

Integrating sex and gender differences in health research

03-10-07 Hoe?Zo! De Wetenschap van elke dag (Everyday Science), Teleac Radio

Women as guinea pigs (De vrouw als proefkonijn)

09-10-07 Noorderlicht VPRO Radio

Female guinea pigs (Vrouwelijke proefkonijnen)

Media Briefing

GenderBasic: promoting integration of sex and gender aspects in biomedical and health related research. Bringing gender expertise to life sciences research practices

Advertisement page that appeared in:

The Parliament Magazine, Issue 240, 26 February 2007

The Parliament Magazine, Issue 241, 12 March 2007

Research Review, Issue 1, March 2007

Conference

Expert Meeting GenderBasic, Maastricht, January 26-27, 2007

Promoting attention to sex and gender in biomedical and health related research.

GenderBasic: Promoting integration of sex and gender aspects in biomedical and health-related research. Towards a more gendered and translational medicine.

14-03-08, Brussels. Inter service policy brief organized by Johannes Klumpers Head of Unit, L4 Scientific Culture & Gender Issues, Directorate Science, Economy and Society, DG Research, EC.

Publications

Joke A. Haafkens & Ineke Klinge (2006). GenderBasic: Promoting attention to sex and gender differences in life sciences research. *Gender Medicine*, Vol 3, Suppl. A. S52-S53.

UM Research Magazine, 1 March 2007. [The sex and gender dimension in research into health and illness \(De sekse- en genderdimensie in onderzoek naar ziekte en gezondheid\)](#)

Ineke Klinge (2007) GenderBasic: Promoting integration of sex and gender aspects in biomedical and health related research. Bringing gender expertise to life sciences research practices. *Società Italiana di Farmacologia*, 33° Congresso Nazionale, Cagliari, 6-9 giugno 2007

SUMMUM Gazet, Newsletter Academic Hospital Maastricht University & Faculty of Health , Medicine and Life Sciences, 3 October 2007, p.3 The success stories of GenderBasic. More differences between men and women in research (De success stories van GenderBasic. Meer man-vrouw verschillen in onderzoek).

Ineke Klinge (2007) [Bringing Gender Expertise to Biomedical and Health-Related Research](#). *Gender Medicine*, Volume 4, Supplement B, S59-S63

Anita Holdcroft (2007) [Integrating the Dimensions of Sex and Gender into Basic Life Sciences Research: Methodologic and Ethical Issues](#). *Gender Medicine*, Volume 4, Supplement B, S64-S74

Jörg Isensee, Patricia Ruiz Noppinger (2007) [Sexually Dimorphic Gene Expression in Mammalian Somatic Tissue](#). *Gender Medicine*, Volume 4, Supplement B, S75-S95

Kitty Lawrence, Anita Rieder (2007) [Methodologic and ethical ramifications of sex and gender differences in public health research](#). *Gender Medicine*, Volume 4, Supplement B, S96-S105



Martin H. Prins, Kim M. Smits, Luc J. Smits (2007) [Methodologic Ramifications of Paying Attention to Sex and Gender Differences in Clinical Research](#). Gender Medicine, Volume 4, Supplement B, S106-S110

Jose M. Ordovas (2007) [Gender, a significant factor in the cross talk between genes, environment, and health](#). Gender Medicine, Volume 4, Supplement B, S111-S122

Anne Hammarström (2007) [A Tool for Developing Gender Research in Medicine: Examples from the Medical Literature on Work Life](#). Gender Medicine, Volume 4, Supplement B, S123-S132

Dirkje S. Postma (2007) [Gender Differences in Asthma Development and Progression](#). Gender Medicine, Volume 4, Supplement B, S133-S146

Piet Geusens, GeertJan Dinant (2007) [Integrating a Gender Dimension into Osteoporosis and Fracture Risk Research](#). Gender Medicine, Volume 4, Supplement B, S147-S161

Vera Regitz-Zagrosek, Elke Lehmkuhl, Shokufeh Mahmoodzadeh (2007) [Gender Aspects of the Role of the Metabolic Syndrome as a Risk Factor for Cardiovascular Disease](#). Gender Medicine, Volume 4, Supplement B, S162-S177

Marrie H.J. Bekker, Janneke van Mens-Verhulst (2007) [Anxiety Disorders: Sex Differences in Prevalence, Degree, and Background, But Gender-Neutral Treatment](#). Gender Medicine, Volume 4, Supplement B, S178-S193

Ineke Klinge (2008) Gender Perspectives in European Research. Special Issue on Gender Pharmacology of Pharmacological Research. Guest editor Flavia Franconi (in press).

Ineke Klinge (2008) Sex and gender sensitive biomedicine: how far from Utopia. Session GenderMainstreaming in Biomedicine: role of women and gender issues. EPWS Conference Women Shaping Science, 5-7 June, Lithuania. To be published in Acta Medica Lithuania.

Ineke Klinge (2008) Inclusion of sex and gender aspects in biomedical research practices: progress made in EU funded research. 3rd International Congress in Gender Medicine, 12-14 September, Stockholm, Sweden. To be published in Gender Medicine.

Ineke Klinge (2008) Inclusion of sex and gender aspects in biomedical research practices: what are we heading for? Conference "The politics of knowing, research, institutions and gender in the making". Session: Material practices of knowledge production and the legitimization of knowledge.

Ineke Klinge (2008) Meine Leidenschaft für Gender Studies und Biomedizin. Wie alles begann. Georgia. Zeitschrift des Frauen- und Gleichstellungsbüros, Universitätsmedizin, Göttingen, Georg-August-Universität.

European Commission (2008). Catalogue of FP6 Success Stories.

Posters

Ineke Klinge & Joke Haafkens (2006) GenderBasic. Promoting attention to sex and gender in life sciences research in Europe. First World Congress on Gender-Specific Medicine. Men,

Women and Medicine. A new view of the biology of sex/gender and aging. February 23-26, 2006, Berlin, Germany.

Madelief Bertens and Ineke Klinge (2007) GenderBasic: Promoting integration of sex and gender aspects in biomedical and health related research. Bringing gender expertise to life sciences research practice. 4th Berlin Symposium Sex and Gender in Medicine, October 11-12, 2007, Berlin, Germany. Prize for best poster in the area health care / prevention research.

Ineke Klinge (2008) GenderBasic: Promoting integration of sex and gender aspects in biomedical and health related research. Bringing gender expertise to life sciences research practice. 3rd Congress in Gender Medicine, 12-14 September, Stockholm, Sweden.

Website

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