A framework for the Analysis of Gender Bias in research and medical care

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“Normality is believing that what happens is normal”
(El Roto, Spanish humorist)
Definitions of Gender Bias

Medical practice:
“The differential medical treatment of men and women, the impact of which may be positive, negative or neutral.”


Research purposes:
“A systematic, erroneous gender dependent approach related to social construct, which erroneously regards women and men as similar or different, in the exposure to risk factors and the natural history of disease.”

Coronary Angiographs between women and men
Harvard Hospital (30,000 patients) and New Haven Hospital (30,000 patients)


No of coronary angiographs per 100 patient admissions

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whites</td>
<td>18.8%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Non Whites</td>
<td>14%</td>
<td>8.6%</td>
</tr>
</tbody>
</table>
2011 10Q Report:
Advancing Women’s Heart Health through Improved Research, Diagnosis and Treatment

Women Heart
The National Coalition for Women with Heart Disease

June 2011 • Washington, DC
1. Gender bias in research is due to an incorrect assumption of:

Equality between women and men

- Exposure to risk factors and their consequences.

- Early (and even later symptoms) of diseases suffered by both sexes.

Differences between women and men

- Responses to treatment

- Outcomes/Prognosis

2. Gender bias in research specifically related to women’s health problems.


Incorrect assumption of **Equality** between women and men in research

<table>
<thead>
<tr>
<th>Research context</th>
<th>Selection Bias</th>
<th>Measurement Bias</th>
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<tbody>
<tr>
<td>Clinical</td>
<td>Under-representation of women in clinical trials. See <a href="#">slide 8</a></td>
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<tr>
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Participation by gender in the published clinical trials of specific pharmaceuticals

**Antiretrovirals**

**Etoricoxib**


### Incorrect assumption of Equality between women and men in research

**Epidemiological bias relating to gender insensitivity:**

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<tr>
<td><strong>Clinical</strong></td>
<td>Under-representation of women in clinical trials. See slide 8</td>
<td>Lack of sex stratification in clinical trials. Why? Overall sample size stratified by sex is too small to produce valid results</td>
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<tr>
<td><strong>Social</strong></td>
<td>Under-representation of women in research on exposure to chemical risks</td>
<td>Familism Bias</td>
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## Incorrect assumption of **Differences** between women and men in research

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Inconsistency of the prevalence of anemia across the Spanish regions

Unequal access to treatment based on the patient’s geographical location
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<td>Example: When some studies wrongly attribute the blame to woman patients for the delay in receiving diagnostic and treatment</td>
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<td>See slide 11</td>
<td>See slide 13</td>
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Delay Timeline in receiving diagnostic and treatment

- **Patient delay**
- **Diagnostic delay**
- **Therapeutic delay**

- **Onset of symptoms**
- **Care Demanded**
- **Access to care**
- **Diagnostic**
- **Treatment**
## Incorrect assumption of Differences between women and men in research

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<td><strong>Social</strong></td>
<td>Example: Studies on eating disorders, which tend to exclusively select women for participation in such research</td>
<td>Example: The myth of a higher prevalence of mental health problems in women than in men</td>
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</table>
Gender bias in research and medical care specifically related to women’s health problems

1. Hormone Replacement Therapy (HRT)

2. “Ectomies”: Hysterectomies, preventive mastectomies, episiotomy, oophorectomies

3. Aggressive treatments of breast cancer

4. Disease Mongering more frequently aimed at women than men
Hormonal Replacement Therapy and Related Diseases

N. Krieger. HRT, cancer, controversies and Women’s health
J Epidemiol Comm Health 2005; 59: 740-8

1939-1940
Am J Cancer, JAMA: Hormones and Breast Cancer

1950
Earliest doubts of safety of HRT during menopause

1975
Estrogen Endometrial Cancer
N Engl J Med

1980
Combined Progesterone/Estrogen Therapy

2002
New restrictive Recommendation from the Spanish Drug Administration

2004
Sharp fall in sales in the English speaking countries

2011
Women’s Health Initiative. JAMA: Excess incidences of cancer and cardiovascular diseases in women

Commercial Success elixir of youth!
From the feminist empiricist perspective, we should “Engender” knowledge about disease suffered by both sexes by:

<table>
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| Analysing research limitations  
  • Explicitly stated by the authors  
  • Other limitations that can be observed in the studies |
| “Looking-twice” at the results, stratifying them by sex; and developing Meta-analysis |
| Requesting how the cut-off points criteria relating to normality/abnormality were established for women in different diagnostic tests:  
  • Are they established from a sample size of women?  
  • Are they established from a sample size of men and inferred to be applicable to women? |
| Evaluating the effectiveness of diagnostic protocols because many have been established for CT’s and may not include some women’s symptoms/illness, taken as “atypical” |
MAKE VISIBLE THE INVISIBLE. THAT’S ART

THANK YOU!