A Sociocultural Exploration of Sex-Bias in NSERC-funded Human Cardiovascular Research at Ontario Universities

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Every 20 minutes a woman in Canada dies from heart disease.

Women are 5X more likely to die from heart disease than breast cancer.

(Heart & Stroke Foundation, 2018)
Despite these staggering statistics...

\( \frac{2}{3} \) of heart disease clinical research focuses on men.

(Heart & Stroke Foundation, 2018)
Outline

• Background
  – What do we know about sex-bias against the inclusion of women in research?
  – What is being done to address this sex bias?

• Part I
  – Research question
  – Methods
  – Results

• Part II
  – Research question
  – Methods

• Take home message
Where did this sex-bias come from?

18th century use of human subject

Late 19th century methodological standardization

The ‘normal’ male body

Male norm: male body is viewed as the ‘standard’ human body. Female body is understood only in how it deviates from this ‘standard’.

( Epstein, 2007; Kaufert, 1999; Institute of Medicine (US) Committee on Ethical and Legal Issues Relating to the Inclusion of Women in Clinical Studies, 1994)
Background

1960s Thalidomide disaster

1970s Protectionist policies

Female participation in research

PROTECTIONISM

(Epstein, 2007)
1980s/1990s
Calls for inclusion of women in research

Introduction of inclusion guidelines, policies

TCPS2 2014

Ethical Conduct for Research Involving Humans

Natural Sciences and Engineering Research Council of Canada (NSERC)

(Epstein, 2007; Lippman, 2006; Government of Canada, 2016)
Part I – Research Question

Despite inclusion guidelines, does the bias persist?
Part I – Statement of significance

Is human cardiovascular research at Ontario universities following TCPS2 inclusion guidelines?
Part I - Methods

244 NSERC Discovery Grant-funded cardiovascular research publications from Ontario universities between 2010-2018.

144 Publications excluded

3 Duplicates removed

96 Publications to undergo appraisal
Fig. 2. Average female enrolment in NSERC Discovery Grant funded human cardiovascular research at Ontario universities from 2010-2018.
Part I - Results

Female inclusion in NSERC Discovery Grant-funded human cardiovascular research at Ontario universities from 2010-2018

- 63% Equal male and female inclusion
- 27% Female overrepresentation
- 10% Female underrepresentation or exclusion
Part II - Sociology of science

What explains this sex-bias?
Part II - Hypothesis

Society (social norms)

Sex inequality

Research Institution

Practical methodological considerations

Underrepresentation & exclusion of women
Practical methodological considerations

**Society (social norms)**
- Sex inequality

**Research Institution**
- Practical methodological considerations
- Underrepresentation & exclusion of women
- Misperception of female CVD prevalence
- The “complicated” female body
- The “normal” male body
Part II - Methods

1. Systematic content analysis

General
G1. Are the terms sex and/or gender defined in paper? (Yes, No)
G2. Are the terms sex and gender conflated or confused in paper? (Yes, No - determined qualitatively)
G3. Is there evidence that the author knows the impact of sex/gender on the study outcome? (Yes, No - determined qualitatively)
G4. Is there evidence of a male norm? (Yes, No - determined qualitatively)
G5. If only one sex is included in the study, is this evident in the title/abstract? (Yes, No, N/A)

2. Interviews
Part II - Statement of Significance

Construct
Maintain
Reinforce
Take Home Message
Thank you!

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References


