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

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

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

Despite these staggering statistics...

2/3 of heart disease
clinical research focuses
on men.

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

Background

1980s/1990s
Calls for inclusion
of women in
research

Introduction
of inclusion
guidelines,
policies

TCPS2 **2014**

TRI-COUNCIL POLICY STATEMENT

Ethical Conduct for
Research Involving
Humans

2014

Canadian Institutes of Health Research
Natural Sciences and Engineering Research Council of Canada
Social Sciences and Humanities Research Council of Canada

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?

TCPS2 2014

TRI-COUNCIL POLICY STATEMENT

Ethical Conduct for
Research Involving
Humans

2014

Canadian Institutes of Health Research
Natural Sciences and Engineering Research Council of Canada
Social Sciences and Humanities Research Council of Canada

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

Part I - Results

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

Part II - Sociology of science

What explains this sex-bias?

Part II - Hypothesis

Practical methodological considerations

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)

Introduction

IQ1: Is the study intended to test for sex differences? (Yes/No)

Methods

MQ1: Is information about the sex of participants available?

MQ2: Are both sexes included in the study? (explicitly or implicitly stated)

Reasons to justify exclusion?

Results/Discussion

RQ1: Does the study report and/or analyze data by sex? (reporting sex difference or lack thereof)

RQ2: Is there a discussion of how sex/gender might or might not influence result?

% females participants

40-60% female = equal inclusion

2. Interviews

Part II - Statement of Significance

Construct

Maintain

Reinforce

Take Home Message

Thank you!

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