Gender trends and patterns in non-communicable diseases in Europe and globally

Robyn Norton

Principal Director, The George Institute for Global Health

Professor of Global Health and James Martin Fellow, University of Oxford

Professor of Public Health, University of Sydney

Gender trends and patterns in NCDs

OXFORD MARTIN POLICY PAPER

OXFORD MARTIN SCHOOL

UNIVERSITY OF OXFORD

- Leading causes of death and disability for women are now NCDs

- Gendered analyses of health data are essential if we are to most cost-effectively prevent and treat NCDs

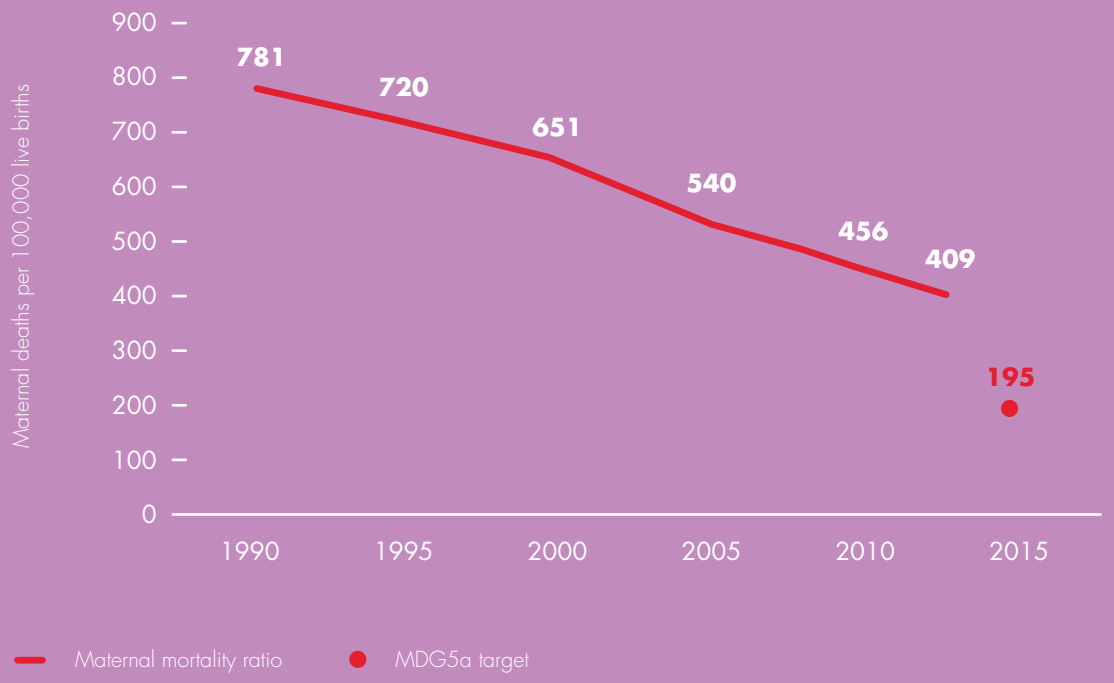
Leading causes of death for women

The George Institute
for Global Health

45%

reduction in maternal deaths since 1990

Fig. 4 Trends in maternal mortality ratio, 1990-2013 and MDG5a target in 49 focus countries



Source: WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division publication: Trends in Materna Mortality: 1990 to 2013

Leading causes of death for women globally, 2013

Rank	Global
1	Ischaemic heart disease
2	Cerebrovascular disease
3	Lower respiratory infections
4	COPD
5	Alzheimer's disease
6	Diabetes
7	Diarrhoeal diseases
8	HIV/AIDS
9	Hypertensive heart disease
10	Lung cancer

- Non-communicable diseases account for 7/10 leading causes of death, led by heart disease and stroke
- Cardiometabolic conditions account for 4/10
- Respiratory conditions account for 3/10
  - lung cancer is now the leading cause of cancer death
- Alzheimer's disease is the 5th leading cause of death

Leading causes of death for women in UK, 2013

Rank	Global	UK
1	Ischaemic heart disease	Ischaemic heart disease
2	Cerebrovascular disease	Cerebrovascular disease
3	Lower respiratory infections	Alzheimer's disease
4	COPD	Lower respiratory infections
5	Alzheimer's disease	Lung cancer
6	Diabetes	COPD
7	Diarrhoeal diseases	Breast cancer
8	HIV/AIDS	Colorectal cancer
9	Hypertensive heart disease	Other cardiovascular and circulatory diseases
10	Lung cancer	Ovarian cancer

- Non-communicable diseases account for 9/10 leading causes of death, led by heart disease and stroke
- Cancer accounts 4/10
  - lung cancer is the leading cause of cancer death
- Cardiometabolic conditions account for 3/10
- Respiratory conditions account for 3/10
- Alzheimer's disease is the 3rd leading cause of death

Leading causes of death for women in LMIC, 2013

Rank	Global	Developing
1	Ischaemic heart disease	Cerebrovascular disease
2	Cerebrovascular disease	Ischaemic heart disease
3	Lower respiratory infections	Lower respiratory infections
4	COPD	COPD
5	Alzheimer's disease	Diarrhoeal diseases
6	Diabetes	HIV/AIDS
7	Diarrhoeal diseases	Diabetes
8	HIV/AIDS	Tuberculosis
9	Hypertensive heart disease	Hypertensive heart disease
10	Lung cancer	Malaria

- Non-communicable diseases account for 5/10 leading causes of death, led by stroke and heart disease
- Infectious diseases account for the other 5/10
- Cardiometabolic conditions account for 4/10
- Respiratory conditions account for 3/10

Leading causes of death for women in India, 2013

Rank	Global	India
1	Ischaemic heart disease	Ischaemic heart disease
2	Cerebrovascular disease	Cerebrovascular disease
3	Lower respiratory infections	COPD
4	COPD	Diarrhoeal diseases
5	Alzheimer's disease	Lower respiratory infections
6	Diabetes	Tuberculosis
7	Diarrhoeal diseases	Asthma
8	HIV/AIDS	Hypertensive heart disease
9	Hypertensive heart disease	Diabetes
10	Lung cancer	Pneumoconiosis

- Non-communicable diseases account for 7/10 leading causes of death, led heart disease and stroke
- Cardiometabolic conditions account for 4/10
- Respiratory conditions account for 4/10

EVERY WOMAN
EVERY CHILD

THE GLOBAL STRATEGY FOR WOMEN'S, CHILDREN'S AND ADOLESCENTS' HEALTH (2016-2030)

SURVIVE
THRIVE
TRANSFO

SUSTAINABLE DEVELOPMENT G

AT A GLANCE:

THE GLOBAL STRATEGY FOR WOMEN'S, CHILDREN'S AND ADOLESCENTS' HEALTH (2016-2030)

VISION

By 2030, a world in which every woman, child and adolescent in every setting realizes their rights to physical and mental health and well-being, has social and economic opportunities, and is able to participate fully in shaping prosperous and sustainable societies.

OBJECTIVES AND TARGETS aligned with the Sustainable Development Goals (SDGs)

SURVIVE *End preventable deaths*

- Reduce global maternal mortality to less than 70 per 100,000 live births
- Reduce newborn mortality to at least as low as 12 per 1,000 live births in every country
- Reduce under-five mortality to at least as low as 25 per 1,000 live births in every country
- End epidemics of HIV, tuberculosis, malaria, neglected tropical diseases and other communicable diseases
- Reduce by one third premature mortality from non-communicable diseases and promote mental health and well-being

THRIVE *Ensure health and well-being*

- End all forms of malnutrition and address the nutritional needs of children, adolescent girls, and pregnant and lactating women
- Ensure universal access to sexual and reproductive health-care services (including for family planning) and rights
- Ensure that all girls and boys have access to good-quality early childhood development
- Substantially reduce pollution-related deaths and illnesses
- Achieve universal health coverage, including financial risk protection and access to quality essential services, medicines and vaccines

TRANSFORM *Expand enabling environments*

- Eradicate extreme poverty
- Ensure that all girls and boys complete free, equitable and good-quality primary and secondary education
- Eliminate all harmful practices and all discrimination and violence against women and girls
- Achieve universal and equitable access to safe and affordable drinking water and to adequate and equitable sanitation and hygiene
- Enhance scientific research, upgrade technological capabilities and encourage innovation
- Provide legal identity for all, including birth registration
- Enhance the global partnership for sustainable development

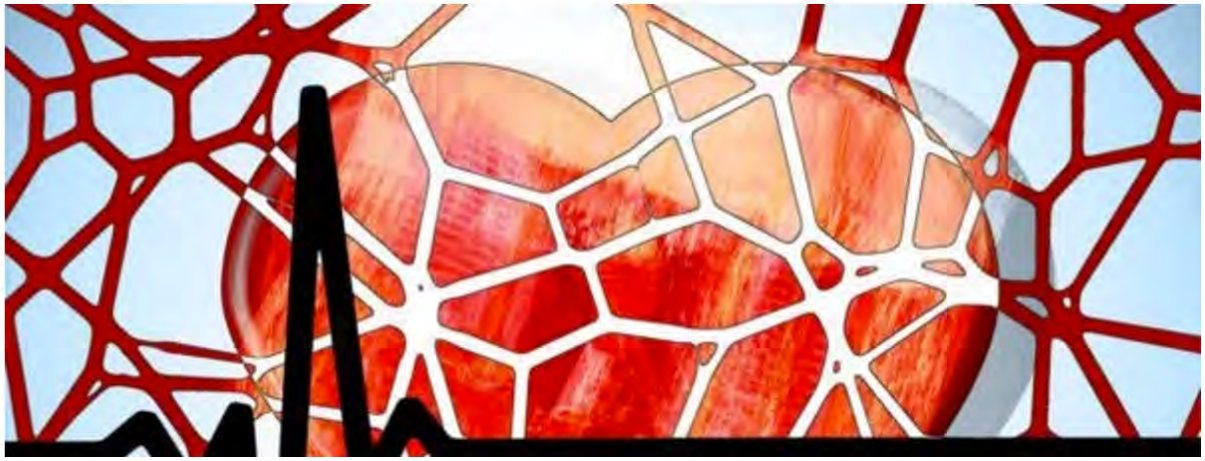
Does heart and circulatory disease kill more men than women?

Source: BHF, 2016

Explaining inequalities in women's heart disease risk

by Guest Author on 13 October 2016

*Research published in BMC Medicine, based on the Million Women Study, reports women with lower levels of education and living in more deprived areas of the UK are at higher risk of coronary heart disease due to differences in behaviour. Here, study co-author **Dr Sarah Floud** discusses what these findings mean in the context of addressing social and health inequalities.*



Clin Cardiol. Author manuscript; available in PMC 2014 March 01.

Published in final edited form as:
Clin Cardiol. 2013 March ; 36(3): 133–138. doi:10.1002/clc.22092.

Women at Risk for Cardiovascular Disease Lack Knowledge of Heart Attack Symptoms

Laura E Flink, MD, MS[*], **Robert R Sciacca, Eng ScD**[*], **Michael L Bier**[*], **Juviza Rodriguez, AB**[*], and **Elsa-Grace V Giardina, MD**[*]
[*]Center for Women's Health, Division of Cardiology, College of Physicians and Surgeons, Columbia University

SUMMARY

Background—It is not known whether cardiovascular disease (CVD) risk level is related to knowledge of the leading cause of death of women, or heart attack symptoms.

Hypothesis—Women with higher CVD risk estimated by Framingham Risk Score (FRS) or Metabolic Syndrome (MS) have lower CVD knowledge.

Methods—Women visiting primary care clinics completed a standardized behavioral risk questionnaire. Blood pressure, weight, height, waist size, fasting glucose and lipid profile were assessed. Women were queried regarding CVD knowledge.

Results—Participants (n=823) were Hispanic women (46%), Non-Hispanic White (37%), Non-Hispanic Black (8%). FRS was determined in 278: low (63%), moderate (29%), and high (8%); 24% had ≥3 components of MS. The leading cause of death was answered correctly by 54%, heart attack symptoms by 67%. Knowledge was lowest among racial/ethnic minorities and those with less education (both $p<0.001$). Increasing FRS was inversely associated with knowing the leading cause of death (low 72%, moderate 68%, high 45%, $p=0.045$). After multivariable adjustment, moderate/high FRS was inversely associated with knowing symptoms (moderate OR 0.52, 95% CI 0.28–0.98, high OR 0.29, 95% CI 0.11–0.81), but not the leading cause of death. MS was inversely associated with knowing the leading cause of death ($p<0.001$) or heart attack symptoms ($p=0.018$), but not after multivariable adjustment.

Conclusions—Women with higher FRS were less likely to know heart attack symptoms. Efforts to target those at higher CVD risk must persist or the most vulnerable may suffer disproportionately, not only because of risk factors, but also inadequate knowledge.

A gendered approach to health data

The George Institute
for Global Health

Assumptions that
data and research findings involving only men
are relevant for both men and women
are not only are discriminatory
but produce bad science and have the potential to lead to
detrimental effects on the health of women

A gendered approach - definitions

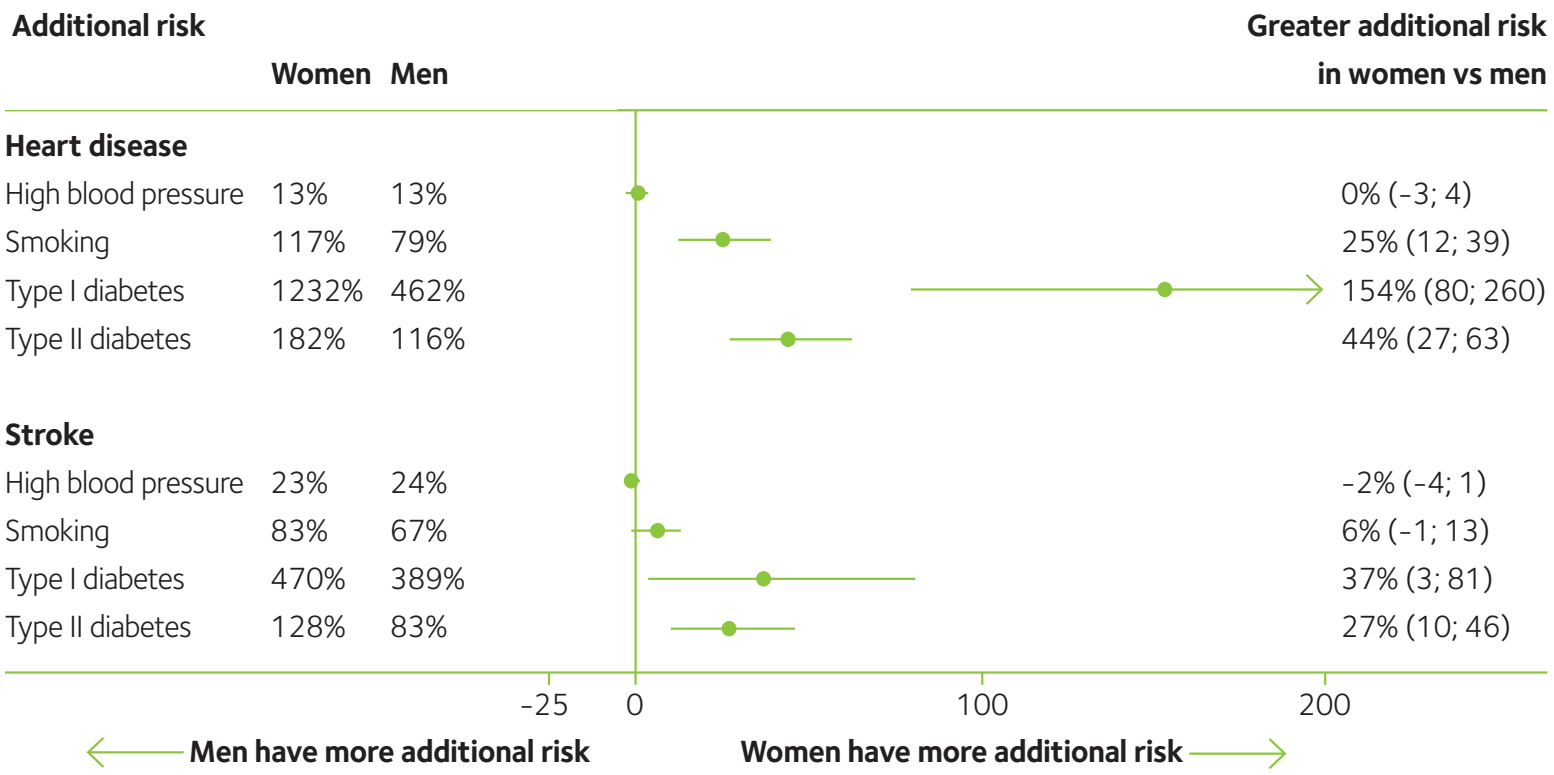
Gendered approach	Refers collectively to the use of sex and/or gender disaggregated analyses
Sex disaggregated analyses	Enables the identification of biological *differences* between women and men
Gender disaggregated analyses	Facilitates the identification of *disparities* between women and men that relate to the impact of sociocultural and economic factors

A gendered approach to addressing heart disease

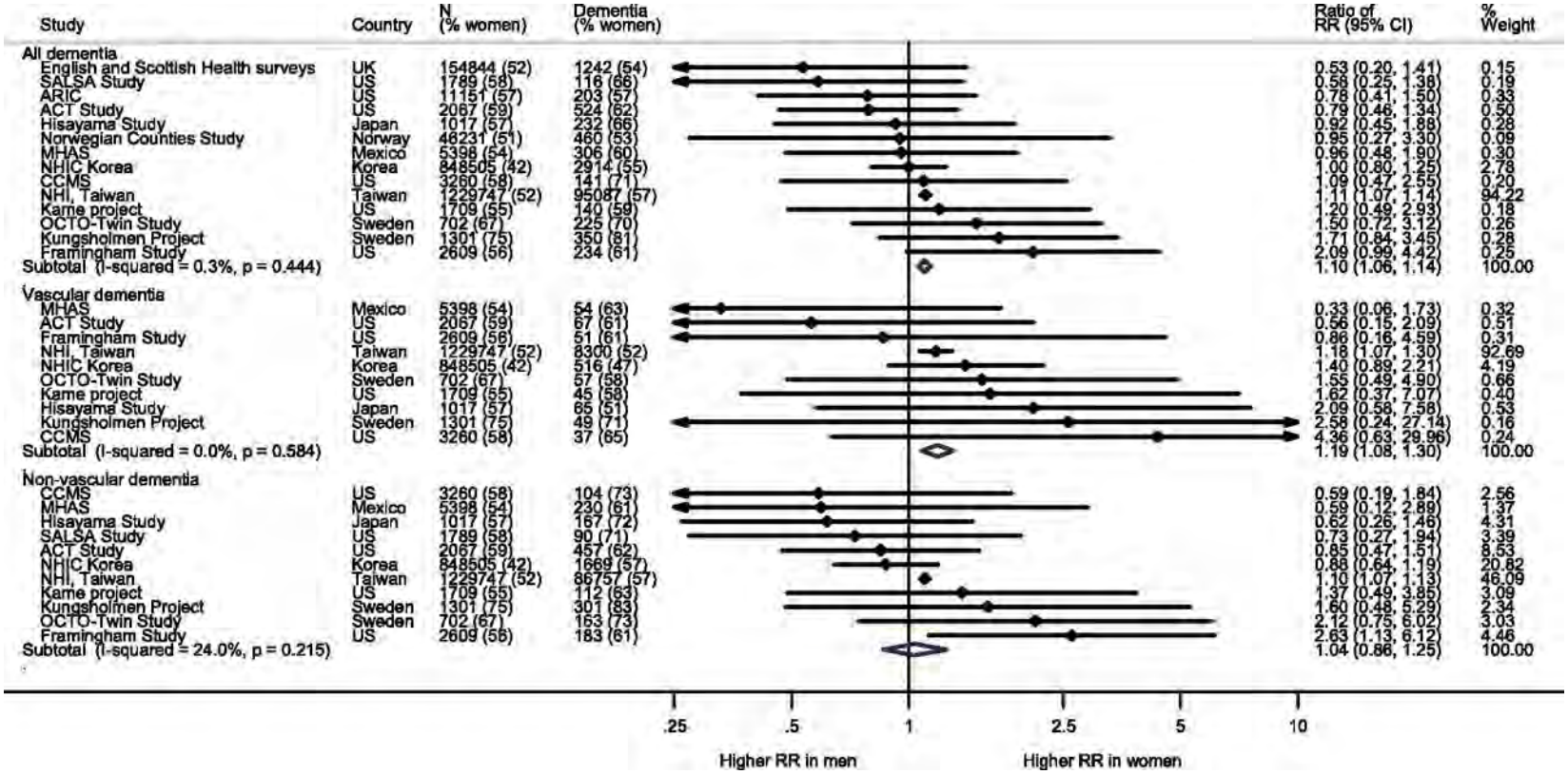
Has identified:

- Presentation differences: Women more likely than men to develop stroke, and at older ages
- Diagnostic and management differences: Women are less likely to receive pharmacological treatment for risk factors or to be referred for diagnostic and therapeutic procedures
- Differences in effects of risk factors: Women are impacted more by smoking and diabetes than men, in terms of their relative chance of heart disease and stroke

Figure One: The additional risks of ischaemic heart disease (IHD) and stroke associated with high blood pressure, smoking, Type I and Type II diabetes in women compared with men



Multiple-adjusted women-to-men RRRs for any dementia, vascular dementia, and nonvascular dementia, comparing individuals with diabetes to those without diabetes.



Saion Chatterjee et al. Dia Care 2016;39:300-307

Framing Women's Health Issues in 21st Century India - A Policy Report

The George Institute for Global Health India, May 2016.

The George Institute for Global Health

The George Institute for Global Health, India

219-221, Splendor Forum, Plot No. 3
Jasola District Centre
New Delhi 110025 India

Tel: +91 11 4158 8091-93
Fax: +91 11 4158 8090
info@georgeinstitute.org.in

Gender trends and patterns in NCDs

- Leading causes of death and disability for women are now NCDs
  - globally
  - in Europe
  - in LMICs

- Gendered analyses of health data are essential if we are to most cost-effectively prevent and treatment NCDs

OXFORD MARTIN POLICY PAPER

OXFORD MARTIN SCHOOL

UNIVERSITY OF OXFORD

Gender trends and patterns in non-communicable diseases in Europe and globally

The George Institute
for Global Health

www.georgeinstitute.org