

# **Disclosure Information**

## **Women's Employment Status and Risk of Coronary Heart Disease: The Atherosclerosis Risk in Communities (ARIC) Study**

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**There are no disclosures.**

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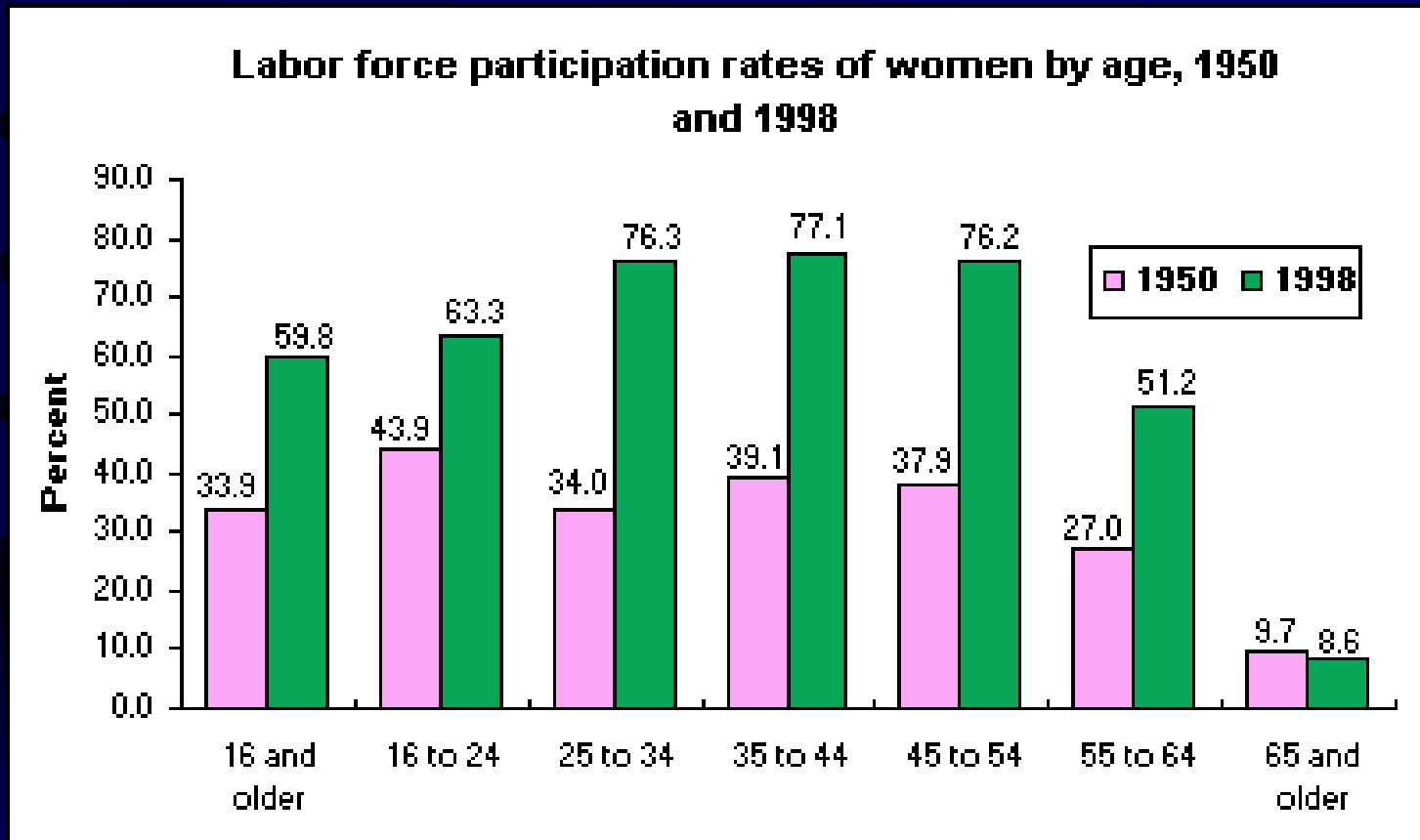
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# Background

- **Women's participation in the labor force has increased during the 20<sup>th</sup> century.**
  - **In 1900, 19% participation rate; in 1999, 60% participation rate.**

# Changes in Labor Force Participation by Women, 1950-1998



Source: Department of Labor ([www.bls.gov/opub/ted/2000/Feb/wk3/art03.htm](http://www.bls.gov/opub/ted/2000/Feb/wk3/art03.htm))

## **Background (cont'd)**

- **Several theories have been posited about health effects associated with women's participation in the labor force:**
  - **Role strain model**
  - **Role accumulation model**

## **Background (cont'd)**

- **Previous studies of employment status and CVD health effects have been inconclusive.**
  - **Evidence of stronger association among African-American women.**
  - **Association varied by time periods.**

# Research Questions

- **Is employment status associated with an increased risk of coronary heart disease (CHD) in a middle-aged female population?**
  - **If so, does this association vary by race?**
  - **If so, is this association attenuated after adjustment for socioeconomic status and CVD risk factors?**

# Methods

- **The Atherosclerosis Risk in Communities (ARIC) Study**
  - **15,792 Black and white men and women ages 45-64 at the baseline exam (1987-89)**
  - **Sampled from four communities**
    - **Forsyth County, North Carolina**
    - **Jackson, Mississippi**
    - **Minneapolis, Minnesota**
    - **Washington County, Maryland**

# Exclusion Criteria

- **ARIC Study Population (N=15,792)**
  - **Males (n=7082)**
  - **Race other than African-American or white; African Americans in MN/MD (n=51)**
  - **Unemployed or missing employment information (n=353)**
  - **Retired (n=945)**
  - **Prevalent CHD (n=305)**
  - **Missing covariate data (n=201)**
- **Final Study Population: 6,855 females**

# Measurement

- **Employment status (homemaker versus employed)**
- **CHD events identified and verified via annual follow-up contacts, medical records, and hospital discharge information.**
  - **CHD events included myocardial infarction and revascularization procedures.**

# Statistical Analysis

- **Cox proportional hazards regression**
  - Overall and stratified by race
  - Adjustment for socio-demographic variables (age, education, and income)
  - Additional adjustment for cardiovascular disease risk factors (body mass index, prevalent CHD, smoking status, HDL cholesterol, hypertension)

# Results

**Table 1. Socio-demographic characteristics of ARIC participants.**

| <b>Characteristic</b>         | <b>Homemakers<br/>(N=1,788)</b> | <b>Employed<br/>(N=5,067)</b> |
|-------------------------------|---------------------------------|-------------------------------|
| <b>Age, mean (years)</b>      | <b>55.0 ± 5.6</b>               | <b>52.4 ± 5.2</b>             |
| <b>Race</b>                   |                                 |                               |
| <b>African-American</b>       | <b>20%</b>                      | <b>32%</b>                    |
| <b>Education</b>              |                                 |                               |
| <b>&lt; High School</b>       | <b>32%</b>                      | <b>18%</b>                    |
| <b>Family Income, dollars</b> |                                 |                               |
| <b>&lt; 25, 000</b>           | <b>43%</b>                      | <b>37%</b>                    |

# Results (cont'd)

**Table 2. Health-related characteristics of ARIC Study participants.**

| <b>Characteristic</b>                         | <b>Homemakers<br/>(N=1,788)</b> | <b>Employed<br/>(N=5,067)</b> |
|---|---------------------------------|-------------------------------|
| <b>Diabetic</b>                               | <b>15%</b>                      | <b>9%</b>                     |
| <b>Hypertensive</b>                           | <b>40%</b>                      | <b>30%</b>                    |
| <b>Current smokers</b>                        | <b>23%</b>                      | <b>25%</b>                    |
| <b>Current alcohol users</b>                  | <b>45%</b>                      | <b>53%</b>                    |
| <b>Body mass index<br/>(kg/m<sup>2</sup>)</b> | <b>28.0 ± 6.3</b>               | <b>27.6 ± 5.9</b>             |
| <b>HDL cholesterol (mg/dl)</b>                | <b>56.8 ± 17.8</b>              | <b>58.6 ± 17.0</b>            |

# Results (cont'd)

Table 3. Hazard Ratios (95% CI) for association between employment status and CHD.

| <b>Model</b>   | <b>Hazard Ratio<br/>(95% CI)</b> |
|--|----------------------------------|
| <b>Adjusted for age, race</b>  | <b>0.71 (0.55, 0.90)</b>         |
| <b>Adjusted for age, race,<br/>education, and income</b>                 | <b>0.73 (0.57, 0.94)</b>         |
| <b>Adjusted for age,<br/>education, income, and<br/>CVD risk factors</b> | <b>0.91 (0.71, 1.17)</b>         |

# Results (cont'd)

**Table 4. Hazard Ratios (95% CI) for association between employment status and CHD stratified by race.**

| <b>Model</b>   | <b>White Women</b>       | <b>African-American Women</b> |
|--|--------------------------|-------------------------------|
| <b>Adjusted for age</b>  | <b>0.81 (0.60, 1.08)</b> | <b>0.52 (0.33, 0.80)</b>      |
| <b>Adjusted for age, education, and income</b>                   | <b>0.82 (0.61, 1.11)</b> | <b>0.58 (0.37, 0.92)</b>      |
| <b>Adjusted for age, education, income, and CVD risk factors</b> | <b>1.00 (0.74, 1.36)</b> | <b>0.75 (0.47, 1.18)</b>      |

# Limitations

- **Information not available to assess extent of employment.**
  - **Part-time versus full-time employment**
  - **Various occupations held during life**
  - **Duration of employment**

# Strengths

- **Large prospective, cohort study**
- **Bi-racial sample**
- **Standardized protocol**
- **Validated CHD events**

# Summary

- **Risk of CHD was lower among employed women compared to homemakers.**
  - **Association was weaker and not significant among white women.**
  - **Association was not explained by socioeconomic status.**
  - **After adjustment for CVD risk factors, association was attenuated among African-American women and no longer apparent among white women.**