

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #365

1. Title: Women's Employment Status: Associations with Prevalent and Incident Hypertension

2. Writing Group:

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4. Timeline:

The literature on the relationship between women's employment status and CVD has been reviewed. A literature review is also planned on the impact of change in employment status on health. Analysis and writing would be in early 1996.

5. Background and Rationale:

Women's labor force participation has steadily increased over the past several decades. Hypotheses in both the biomedical and sociologic literature have predicted that increased labor force participation among women would be associated with higher rates of CVD in women, primarily via increased levels of stress. The literature to date that has examined CVD, CHD, and overall mortality, however, has been inconclusive.

Of primary interest in the current proposal are variations in rates of hypertension among employed women and homemakers. A modestly lower prevalence of hypertension among employed compared to non-employed white women has been reported in the literature (1,2). Recent work carried out by some of the proposed co-authors (3) found a protective employment effect of similar magnitude in a cohort of women representative of the U.S. population (NHANES-II). However, the overall association obscured variations within subgroups of women, as the protective employment association with hypertension was more pronounced among both unmarried and African American women than among married and white women. That the protective employment effect was stronger in groups containing disproportionate numbers of socioeconomically disadvantaged women, led to speculation that at least part of the protective employment association noted was due to a "healthy" worker effect. However, given that data were cross-sectional, it was not possible to address this hypothesis unambiguously.

Use of the ARIC cohort would provide an opportunity to examine the employment status-hypertension relationship in women both cross-sectionally and prospectively. A protective association of employment with hypertension limited to the cross-sectional data would argue in favor of a healthy worker effect; conversely the occurrence of a protective association both cross-sectionally and prospectively would be

suggestive of an independent employment effect.

Our work based on NHANES-II women included only a small number of African American women. It is important to try to verify our findings suggesting a strong protective association of employment with hypertension among African American women. The ARIC cohort offers a chance to replicate these findings with an adequate number of African American women.

There is an implicit assumption that homemakers are different from other non-employed persons, as their lack of paid employment is due to unpaid work responsibilities in the home instead of job loss, inability to find a job, etc. This assumption, however, has not been tested. Thus, a secondary purpose of this paper will be to explore the extent to which variations in hypertension among employed women and homemakers are consistent with those noted between employed and other non-employed persons. It is not possible to contrast employed men to male homemakers, as only 0.3 percent (n=18) of ARIC men were classified as homemakers. However, approximately 4.4% of women and 5% of men in the ARIC cohort (excluding retirees) were classified as unemployed or usually employed but temporarily out of the labor force. Thus, variations in hypertension between employed persons and these groups will be contrasted to those noted between employed women and housewives.

6. Study Questions:

The primary purpose of this paper will be to examine variations in the occurrence of hypertension among employed women and homemakers, taking into account that socioeconomic and lifestyle differences potentially account for the variation between groups. A major purpose will be to determine the extent to which employment status-hypertension associations noted cross-sectionally are consistent with those noted prospectively. Specific hypotheses include:

- Employed women will have a lower prevalence of hypertension than will housewives
- The protective associations will be more pronounced among groups with higher proportions of socioeconomically disadvantaged women (e.g., African American vs. white women).
- Differences in the prevalence of hypertension among employed women and housewives are at least in part due to variations in BMI and life style variables.
- Among women who are normotensive at baseline, employment status will not be associated with the subsequent occurrence of hypertension (3-year incidence).

A second purpose of this paper will be to determine the extent to which differences in the rate of hypertension between employed women and housewives are similar to those noted between other groups of employed and unemployed (usually employed but temporarily out of the labor force, unemployed) persons. Specific contrasts will include: employed women vs. unemployed women and employed men and unemployed men. No specific hypotheses have been formulated.

7. Data, Design, and Analysis:

A cross-sectional study design will be used to examine the relationship between prevalent hypertension and employment status. A prospective study design will be used to examine the relationship between employment status at baseline and subsequent development of hypertension. Logistic regression analysis will be the primary analytic technique employed.

The Visit 1 dataset will be used for the cross-sectional analysis; women who are currently employed or homemaking will be included; those who are retired or unemployed will be excluded. Employment status will be the exposure variable (employed, homemaker) and hypertensive status the outcome. Hypertension will be defined as: (1) SBP \geq 140 mmHg and/or (2) DBP \geq 90 mmHg and/or (3) current use of antihypertensive medication. Potential effect modifiers and/or confounders to be evaluated include: age,

race, BMI, socioeconomic variables (education, family income, occupation), perceived health status, marital status, physical activity, smoking status, alcohol consumption, menopausal status, and exogenous hormone use (oral contraceptive, estrogen replacement therapy).

For the prospective component, participants will be restricted to those women who at baseline, had an SBP \leq 120 mmHg and a DBP \leq 80 mmHg and who were not taking antihypertensive medications. Incident hypertension status and data on change in employment status will be obtained from the Visit 2 dataset.

For the analyses comparing associations between employed and non-employed persons other than housewives, the non-employed group will consist of those responding that they were usually employed but temporarily out of the workforce, unemployed and seeking employment, or unemployed and not currently seeking employment. Effect modification by gender will be examined and if no significant interaction occurs, analyses will combine men and women.