Cardiovascular disease in women and noncontraceptive use of hormones: A feminist analysis

Cardiovascular disease (CVD) in women is being defined by biomedical researchers and physicians as part of the menopausal syndrome. Postmenopausal lowered levels of estrogen are presented as a prime cause of changes in cholesterol levels that are a risk factor for CVD. The biomedical model and hormone debate are described and analyzed, followed by a feminist perspective of CVD. This includes new federal policies that support CVD research. Nurses are encouraged to present a broader picture of CVD and its risks than that presented by the biomedical model and to empower women's understanding of this complex health issue through educational, clinical, and research endeavors.

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The enslavement of the female to the species and limitation of her various powers are extremely important facts; the body of woman is one of the essential elements in her situation in the world.

—Simone de Beauvoir[1(p41)]

INCREASINGLY, government agencies such as the National Heart, Lung and Blood Institute (1990) and the mass media[2,3] have joined biomedical researchers in alerting the public that cardiovascular disease (CVD) is the "No. 1 killer" of postmenopausal American women. Dr Bernadine Healy, Director of the National Institutes of Health (NIH), has stated that in the United States 244,000 women die of heart attacks each year and 90,000 die of strokes.[4] Women over age 65 who have heart attacks, and who undergo angioplasty and bypass surgery, are twice as likely to die as their male counterparts.[5]

CVD has become the newest addition to the menopause syndrome linking hot flashes, night sweating, vaginal dryness, and osteoporosis to lowered estrogen lev-

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els.[6] By the linking of CVD to menopause, lowered estrogen levels are implicated as a prime cause of the disease. It can hardly come as a surprise, then, that hormone therapy is being presented as a logical and "scientific" choice for the prevention of CVD.

American women have a current life span of 78 years; most women can expect to be postmenopausal for a third or more of their lives. Contrary to the negative picture of menopause and the postmenopausal years painted by many biomedical scientists, physicians, and the mass media, epidemiological research reveals that most women are basically healthy and fit during this period of their lives.[7] Older women who give themselves a better health rating than their physician do frequently prove, in time, the greater accuracy of their own intuitive feelings about the state of their health.[8]

Contrary to the above findings, women are facing pressures to start estrogen replacement therapy (ERT) or hormone replacement therapy (HRT)—a combination of estrogen and progestin—to prevent chronic diseases, first osteoporosis and now CVD. There is frequently a sense of cognitive dissonance, as the distance between the state of most postmenopausal women's health and the warnings emitted from the biomedical community widens.

On the face of it, it would appear that the hormone arguments to prevent CVD in postmenopausal women are unassailable. Both the mass media and biomedical research journals mention risk factors related to hormone therapy (HT) in passing, but their overall emphasis is on the potential for HT to prevent primarily heart attacks, and secondarily, if mentioned at all, other end stage outcomes of CVD such as strokes. A basic dilemma is how to conceptualize a reasoned response to such a strong argument. It is not easy, but it is possible. It is possible through looking at the concept of medicalization, feminist critiques of patriarchal science, and new research and health policy on midlife women at the federal level.

THEORETICAL BACKGROUND

> The essays in this book [*Reflections on Gender and Science*] are premised on the recognition that both gender and science are socially constructed categories.
>
> —Evelyn Fox Keller[9(p3)]

This article examines and analyzes CVD in women and the use of noncontraceptive hormones in order to transcend the dominant patriarchal science model and to help emancipate both women and nursing from this perspective.

Medicalization

Menopause, a natural event in women's lives, has been socially constructed as a disease requiring medical intervention.[10,11] The concept of medicalization can be helpful in analyzing the power of biomedical elites who have recently incorporated CVD into the menopause syndrome. Zola has examined the ways in which physicians have extended their power through their roles as gatekeepers by giving the label of "illness" to many normal conditions.[10] Strong arguments can be made for a multifactorial etiology or for the influence of aging on CVD. Yet the definition of "menopause as disease and disease causing" prevails. This medicalization has been developing since the 1920s and has been explored in detail at the conceptual level.[12,13]

The feminist critique of science

Science, as practiced today, is essentially patriarchal: The feminist critique of scientific theory and practice emerged from the women's movement in the 1970s. At least two scientists have stated that until their consciousness was raised, they had never related gender socialization to scientific work.[9,14] This consciousness raising among women scientists and other feminists led first to "feminist distrust." They began to question the objectivity and neutrality of science in regard to women's nature[15] and then to women's appropriate social roles.[16] It led to noting that scientists are highly educated white males of predominantly upper and middle class. Secondly, this critique addresses the need for a feminist science with alternative assumptions, methods, and ethics that will be emancipating for women.[9,14,15,17,18]

Two major concepts embedded in patriarchal science that are directly related to the topic of this article are reductionism and control of nature. Scientists use reductionist methods when they look at bits and pieces of a problem and assume that they will ultimately be able to assemble them and understand nature.[14] Classic scientific reductionism forms the basis for the argument that postmenopausal women need noncontraceptive hormones in order to avoid CVD. This disease in both women and men can most logically be viewed as resulting from a multifactorial etiology: family history, hypertension, diabetes, heavy smoking, high fat diet, lack of physical exercise, and aging. Instead of a multifactorial etiology approach, a reductionist emphasis on declining amounts of postmenopausal estrogen has been the focus of the majority of scientific investigations into CVD and women.

The need for the control of nature is a basic premise in the physical sciences. "Conceptions of nature as passive but threatening to human life, and as resistant to inquiry, legitimate aggressive and defensively justified manipulations of nature."[17(p76)] In addition, since the 16th century, sexual metaphors have portrayed nature as a woman to be "unveiled, unclothed, and penetrated by masculine science."[15(p44)] Woman's body, particularly her reproductive system, continues to be condemned to scientific manipulation to "improve on nature."

Examples of patriarchal science manipulating the female reproductive system abound. These include the possibility of pregnancy after menopause and surrogate motherhood for grandchildren.[19] The examples illustrate the ability of science to even eliminate menopause as a barrier to giving birth.

Patriarchal science and medicine

Physicians, claiming that medical research and practice are based on scientific knowledge, use patriarchal science to legitimate their power to define both illness and its treatment. Medicine also imitates science in the way it reduces complex, dynamic, and organic processes (such as CVD) into a narrow cause–effect relationship. Physicians tend to overlook socioeconomic and political explanations of illness that do not fit into a causal model. For example, CVD strikes most women over 70 years of age; these women have frequently been widowed or divorced for a long time and live alone on a low income, often without health insurance. Poverty itself makes a major impact on the development of chronic diseases, including CVD.

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ence in viewing the female reproductive system as part of nature to be tamed and controlled. Dr Gregory Pincus, lecturing at the Royal Society of Medicine in London on his study of women using oral contraceptives, speculated that this medical intervention would be an improvement on nature: "Perhaps in upsetting the endocrine balance we are establishing one which is superior to that which nature provides."[20]

The linking of CVD to the menopause syndrome follows in this long scientific tradition of woman (nature) being flawed. The complex and finely tuned female reproductive system continues to offer patriarchal science new challenges for experimentation with hormonal interventions. Feminist critics, however, instead of deciding that woman is flawed, have asked whether something is wrong with science and the way men relate to the natural world.[15,21]

CARDIOVASCULAR DISEASE

While women during their fertile years are virtually immune to coronary disease and high blood pressure, the menopausal woman . . . soon loses this advantage and becomes as prone to heart trouble and stroke as a man of similar age.

—R.A. Wilson[22(pp35,37)]

Definition

The Framingham Study's definition of CVD[23] is the best developed and consistent in the literature. It includes three categories of related diseases. The first is coronary heart disease, including angina pectoris, myocardial infarction (heart attack), coronary insufficiency, and congestive heart failure. The second category is cerebral vascular disease encompassing thrombotic stroke, cerebral embolism, and transient ischemic attacks. A third major category is peripheral arterial disease involving arteries of the lower extremities. All these conditions are affected by blood: pattern and speed of flow, clotting factors, cholesterol levels, and the health or disease of vessel walls.

The biomedical model

The biomedical model of CVD in postmenopausal women is based on the assumption that lowered estrogen levels are related to blood cholesterol changes after untreated menopause (lower HDL and higher LDL) and that these changes are the most important risk factors for CVD in women. On this basis, women are frequently encouraged or warned to take ERT or HRT starting at menopause for the rest of their lives.

A justification for this biomedical model is that premature menopause has been identified as a serious risk for CVD. A large number of studies of disparate designs have been reasonably consistent in demonstrating that women with early bilateral oophorectomy are at risk and are helped by ERT.[24]

CVD had traditionally been viewed as a men's disease. Almost all of the classic cardiovascular intervention studies included only men as research subjects: the Multiple Risk Factor Intervention Trials ("MR. FIT"), the Lipid Research Clinics Coronary Primary Prevential Trial, and the Veterans Administration Cooperative Study. Others,

like the huge Coronary Artery Surgery Study (CASS), included too few women to draw any meaningful conclusions.[2] An exception was the prospective, epidemiological Framingham Study, which followed a population consisting of 2,845 women and 2,282 men who were free of CVD at the onset.[23]

CVD, including both heart disease and stroke, accounts for nearly 53 percent of all deaths in women over 50 years of age, compared to 4 percent of deaths due to breast cancer, 18 percent caused by all other forms of cancer, or 2 percent resulting from accidents and suicides.[25] Heart disease and stroke are also a major cause of disability in older women. If contraceptive hormones do prove successful in decreasing CVD in postmenopausal women, it will be the most compelling justification for their use, in terms of the biomedical model.

CVD does occur in premenopausal women and is probably underdiagnosed.[26] An increase in CVD in premenopausal women has been attributed to oral contraceptive use superimposed on the usual major risk factors.[27] The early oral contraceptives, in particular, had relatively high doses of synthetic estrogen.

Traditional risk factors

Risk factors for CVD in women, as found in the biomedical literature, include cholesterol levels, hypertension, cigarette smoking, diabetes mellitus, excess weight, oral contraceptives, and genetics.

Hypertension

All types of CVD explored in the Framingham Study proved to be related to blood pressure level. The strongest relationship was seen in atherothrombotic brain infarction and coronary heart disease.[23] In most published reports, an increase of 10 mm Hg in systolic blood pressure in women appears to be associated with a 20% to 30% risk of CVD death.[28] Hypertension is more prevalent among black women than among white women, as 38% of black women aged 18–74 have hypertension compared to 25% of white women in the same age group.[29] Black women on antihypertensive medication seem to benefit more than white women in terms of fewer myocardial infarctions and strokes.[2]

Total cholesterol, HDL cholesterol, and LDL cholesterol

The Framingham Study provided overwhelming evidence that the overall level of cholesterol in the blood is a powerful factor in the development of CVD.[23] It was found that a low level of low-density lipoprotein (LDL) fraction was positively related to CVD development while a high level of high-density lipoproteins (HDL) was negatively related.

An overview of research findings was presented at a recent National Conference on Cholesterol and High Blood Pressure Control by H. Bush, an epidemiologist. She reported that the level at which total cholesterol is a risk for women is not at 235 mg/dL as for men, but at 265 mg/dL. In addition, there is some evidence that high total cholesterol is not as powerful a risk for women as for men. If HDL is high and total cholesterol is 264 mg/dL a woman is not at high risk for CVD, but if HDL is low with total cholesterol of 264 mg/dL a woman is at risk. She went on to say that safe LDL levels are not known but that a combination of low HDL and high triglycerides is particularly lethal for women; women with a relatively low HDL and high triglycerides died at 10 times the rate of women with relatively low

triglycerides.[30] This report stressed that low HDL is a major predictor of CVD in women.

Smoking

Women who smoke half a pack of cigarettes or a pack or more a day may have a 50% to 100% increased risk of CVD death, respectively, compared to women who have never smoked.[31,32] Smoking has also been implicated in women experiencing an early menopause.[33]

Diabetes mellitus

Diabetes mellitus poses a serious threat for women developing CVD. In the Framingham Study, diabetes contributed substantially to the risk of all types of atherosclerotic disease: myocardial infarction, angina pectoris, peripheral arterial disease, and atherothrombotic stroke.[23]

Excess weight

The Framingham Study also found that in all age categories, the evidence rate of CVD was 50% higher in people with greater relative weight. Body weight was firmly related to blood pressure level; the magnitude of the weight–blood pressure relationship indicated that any attempt to lower blood pressure should involve weight reduction as a primary effort.[23] In contrast to women who smoke cigarettes and have an earlier than average menopause, heavier women tend to have menopause at a later age.[33]

Oral contraceptives

Oral contraceptives contain synthetic estrogen and progesterone in doses high enough to prevent ovulation. Most studies have found that current use of oral contraceptive carries an increased risk of CVD in older premenopausal women who smoke cigarettes. Overall, it appears that there is not an increased risk of CVD among former oral contraceptive users.[34]

Genetics

It is reported to be a potent predictor of CVD in women if either of her parents have had a myocardial infarction prior to the age of 60.[35]

Combination of risk factors

Each of the risk factors above has been found to increase the risk of CVD independently, and women with multiple risk factors have 10- to 12-fold increased risk of CVD.[36]

THE HORMONE DEBATE

I'd put my wife on it. Why won't you take it?

—Physician quoted by JO Cobb[37(p26)]

The title of the September 12, 1991 editorial in the *New England Journal of Medicine* was: "Uncertainty About Postmenopausal Estrogen: Time for Action, Not Debate." Yet the biomedical debates go on and need to continue on the biomedical level until the results of the Women's Health Initiative (WHI) (an NIH 10-year intervention study), including those of various hormonal interventions, are disclosed (probable date 2002). As stated earlier, all of the major studies of risk factors (except the Framingham Study) of CVD were done on men and the findings generalized to include women.

Studies of noncontraceptive estrogen use and CVD in women

In an overview article, Barrett-Connor and Bush[34] reviewed three studies that assessed the relationship between estrogen use and angiographically defined CVD in

women. In all three reports women taking estrogen had significantly less artery stenosis than nonusers. There was a reported 56% to 63% reduction in risk of severe disease among users compared to nonusers.

The authors then summarized 18 controlled observation studies assessing the effect of ERT on risk of CVD in women and stated that the majority of the reports found the reduction of risk ranged from 46% to 84% and were independent of other known risk factors for CVD. Three studies found either no effect of noncontraceptive estrogen or a small reduction in risk of CVD. Four reports have found an increase in the risk of CVD among estrogen users.

A major new report[24] on results of ERT use on both coronary disease and stroke is based on 10 years of follow-up in the Nurses' Health Study. This was a large cohort research project that included 48,470 postmenopausal women. In these postmenopausal women who reported no previous CVD, the researchers documented 293 nonfatal myocardial infarctions and 112 deaths from coronary disease, as well as 172 nonfatal and 52 fatal strokes. Of the strokes, 113 were ischemic strokes and 36 were subarachnoid hemorrhages. There was no increase in the risk or incidence of stroke.

Overall, the age-adjusted risk of CVD morbidity or mortality among current ERT users was approximately half that of women who had never taken estrogen. The best supported mechanism in the study was the favorable effect of estrogen on serum lipids: estrogen raised the level of HDL and lowered that of LDL cholesterol.

Although the data appear persuasive for using ERT, the authors of the report gave several caveats. Estrogen users in the study were less likely to have diabetes, were lean, and were more likely to engage in regular, vigorous physical activity than nonusers. There was a nonsignificant trend in these data toward a decreasing benefit of estrogen with increasing age, which is consistent with the Framingham data. This merits close study in the future. If, in fact, this proves to be true the argument for ERT could be weaker for it would not impact on the prevention of CVD in older women, 70 and above, who clearly have the largest health problem. If there is a protective effect, it cannot protect women as they age and supports the hypothesis that CVD in women is primarily a disease of aging.

Estrogen

Estrogen is rapidly becoming a drug of choice for preventing CVD in postmenopausal women. Until recently, however, estrogen therapy had been considered a risk factor for CVD because of older oral contraceptives, containing higher doses of synthetic estrogen and progestins, being linked to increased CVD risk. Currently, natural estrogens are six to seven times less potent than the lowest dose of the synthetic estrogen ethinyl estradiol contained in oral contraceptives.[38] Other cardiovascular benefits of natural estrogen cited in the literature, but less researched, are lowering of blood pressure, possibly improved blood flow, and improved insulin tolerance.[38,39] The first of

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A serious problem with studies supporting the benefit of ERT is that all the major ones have involved estrogen regimens without progestin. Right now the great unanswered question is whether a combination of estrogen and progestin is as protective against CVD as is estrogen alone.

Risks of estrogen treatment for menopause have included breast cancer. A widely reported Swedish study found that ERT alone for an extended period doubled the risk of breast cancer and that HRT offered no protection against breast cancer. Instead, the women who used HRT for more than 6 years had a higher risk of breast cancer than the women who took ERT.[40] Endometrial cancer was linked to ERT in the mid-1970s.[41]

Progestins

Progestin, an artificial form of progesterone, has been added to estrogen to create HRT. ERT alone can increase the risk of endometrial cancer from 5- to 14-fold depending on the dose and duration of use.[41] The progestin opposes estrogen to prevent this cancer. Protection is provided for women with a uterus who are taking estrogen for menopausal changes or to prevent osteoporosis. However, progestins may adversely affect the relationship between estrogen and CVD. "While no direct evidence exists for this assumption, progestins have a negative impact on HDL. Moreover, progestins may inhibit direct positive effects of estrogen on the arterial wall."[38(p291)]

Progestins can be grouped into three categories: two types of synthetic formulations (19-nor and the 17-alpha) and natural progesterone. The 19-nor forms are used exclusively in combination-contraceptive therapy. The 17-alpha forms, particularly Provera, are usually used in HRT.[38] Oral micronized progesterone, which is not commonly available in the United States, is reported to be the ideal progestin to be used to avoid changes in the lipoprotein level.[38]

Epidemiologic studies need to be carried out to clarify the impact of progestins on estrogen's positive effect on cholesterol levels. To understand the CVD effects and the impact on breast cancer, these progestin studies should be carried on for at least 10 years. A well-known researcher has stated: "If progestins must be given to prevent endometrial cancer, then the dose, duration, and frequency of therapy needs to be thoroughly assessed by a prospective controlled trial."[42(pxv)]

The major risk associated with prescribing progestins for postmenopausal women is that natural progesterone levels are extremely low.[43,44] Whereas lowered levels of estrogen continue to circulate in postmenopausal women until late in life, no research has been done that can explain what happens to older women's bodies over time when exogenous progestins are given. After menopause, they constitute an "untested hormonal experiment."

A woman with a uterus intact faces a painful dilemma—to choose a risk of endometrial cancer with estrogen alone to prevent CVD, or to take HRT without truly knowing what the long-term effect of progestin on CVD, and on her body in general, will be.

In 1988 an international consensus conference was organized to discuss the use of progestins following menopause.[38] There was a consensus that because of lack of data, the use of progestins should be limited. It was also not recommended for hysterec-

tomized women as a protection against breast cancer.[38]

A FEMINIST PERSPECTIVE ON CVD IN WOMEN

> We can do a lot to reduce the factors that affect our chances of having a heart attack or stroke . . . we can make changes to improve our health and reduce the risks.
>
> —E Dorsch[45(p317)]

There has been a feminist response in the literature to the medicalization of menopause,[12,13] menopausal research,[46,47] and HRT as a medical treatment for postmenopausal women.[48,49] This critique may soon extend to CVD as part of the menopause syndrome. Women's health movement activists brought the CVD and HRT dilemma to their readers early. A Canadian newsletter on menopause, *A Friend Indeed*, published articles in 1986 and 1990[50,51] and the National Women's Health Network in 1989 included a discussion of CVD and HRT in the organization's position paper on menopause. "Feminist distrust"[16] is currently called for in analyzing the reductionist focus on cholesterol levels as the major risk factor for CVD in postmenopausal women and the "flaw in women's bodies" focus on estrogen "deficiency." Potent hormones given to healthy women not to treat any disease but to decrease potential of disease, specifically osteoporosis and CVD, from menopause until death seems like a reckless endeavor, since the risks of long-term use of HRT are not known at this time.

Aging

A major issue for feminists to study is that of the relationship between aging and CVD, which seems to be more supported by research data than the menopause as causation hypothesis. Unlike menopause, CVD occurs in primarily older women. This creates a serious time discordance between menopause and the disease since 95% of women have undergone menopause by the age of 55, and only less than 1% of women develop CVD by this age. Mortality rates for CVD do not approach one in 100 until after age 70. By this age the average women has been postmenopausal for 15 to 20 years.[52] During this time, known risk factors combined with aging could play a large role in CVD morbidity or mortality.

Epidemiologists look upon menopause as a nondiscriminating variable in studies of women's health. This holds true with CVD, as currently there is no evidence from vital statistics data that natural menopause per se increases risk of CVD.[24,28]

Known risk factors, such as family history, smoking, hypertension, diabetes, high cholesterol, and oral contraceptives are reported to be so predictive that they logically overwhelm causation related to menopause alone.[23] The highest single predictor of future CVD has been identified as hypertension.[35]

Health care providers, including nurses, can be helpful in this process by reviewing each risk factor or multiple risk factors with a woman on an individual basis and arriving at a plan for change that is realistic, acceptable, and economically viable. Women who experience early natural or surgical menopause need special, highly individual attention regarding the ERT and HRT issues in order to make informed choices that they feel good about.

Testosterone, good or bad?

Since 1960, the CVD death rates have been declining approximately 2% per year with women's rates falling faster than men's

rates.[30,53] The falling rate can be partially explained by life-style changes based on the findings of the early research on men and designed to reduce risk factors for both sexes. There is virtually no evidence that the 30% to 40% decrease in heart disease in women can be attributed to ERT, since the majority of other industrialized countries experienced similar sharp decreases in deaths from heart disease as well. Only the smallest proportion of postmenopausal women in these countries used ERT.[54]

Men's rate of CVD is consistently higher than women's rate across the life span. In the age range 35 to 41, CVD mortality rates are 16 per 100,000 for white women and 60 per 100,000 for white men. The usual argument that estrogen protects a woman until her body becomes "flawed" after menopause could be turned around to ask, as one researcher has done, whether this different incidence rate could perhaps be due to adverse effects of testosterone in the "flawed" male, which is withdrawn in the fifth decade.[55] Then one could speculate that aging starts to be an important contributing factor for both sexes.

POLITICS AND POLICIES

It is heartening for feminists to know that older women's health is at the forefront of discussion, debate, and policy formation at the federal level. This increased attention, combined with the presence of strong women's advocates in government positions, could make the feminist perspective of CVD a viable alternative to the biomedical model of CVD in postmenopausal women in the not too distant future. It also promises the opportunity for nurses to become more involved in health policy formation.

Older women's health issues have received increased attention in Washington, DC during the past 6 years. The following summary is merely a sampling of the many federal organizations that have been involved. It is offered as knowledge that could assist nurses to contribute to this level of policy formation, with an ultimate impact on CVD in women.

The federal government

In 1989, The Congressional Caucus on Women's Issues members, including Representatives Schroeder of Colorado and Snowe of Maine, turned their attention to the quality and quantity of research on women's health that was being undertaken at NIH. As a result, the General Accounting Office (GAO) Report, presented to the House Energy and Commerce Subcommittee on June 18, 1990, highlighted the fact that only 13 percent of the NIH budget was spent on women's research. In addition, the report showed that NIH had made little progress in including women as subjects in research studies, including those with CVD, although the NIH had established a written policy to do so in 1986.[56] These findings laid the foundation for increased research on all major women's health issues including CVD.

As a result, NIH has established the Office of Women's Health Research, reissued the policy of mandatory inclusion of women in research unless scientifically inappropriate, and sought $5 million to $10 million in the FY 1991 budget to support women's health research. Meanwhile, other women's health issues keep coming before Congress under a set of bills entitled the Women's Health Equity Act, that has also been sponsored by the Women's Caucus, among other groups.

On June 18–19, 1990, the National Heart, Lung and Blood Institute (NHLBI) sponsored the "Cholesterol and Heart Disease in Older Persons and in Women" conference. Ongoing and new national and international research projects were reviewed. It was announced that the NHLBI had initiated a 3-year randomized clinical project, the Postmenopausal Estrogen/Progestin Interventions Trial (PEPI), using a cohort of 840 women aged 45 to 64. The women were randomly assigned to take estrogen alone or in combination with progestin, or to take a placebo. A primary objective of the study will be to compare the three different treatment effects on HDL cholesterol levels, blood pressure, fibrogen, and insulin, particularly to note the effects of adding progestin to estrogen.[57]

The PEPI study will not directly answer the question of whether estrogen protects against heart disease because it will not continue long enough to look for differences in CVD morbidity and mortality in those taking hormones compared with those who do not. At best, it may reveal the short-term impact of ERT and HRT on HDL and LDL. Until the results of this study are analyzed, it cannot be known who will benefit from the 3-year experiment in relation to cardiovascular health. Since the endpoint is a myocardial infarct, stroke, or other identifiable CVD event that commonly occurs after age 70 in women, a much longer experimental, prospective research design will be needed. Therefore, at this time, the PEPI can only be viewed as a pilot project, albeit an important one from a biomedical perspective. From a feminist perspective, one must ask why there is an emphasis on hormones and not on genetic and life-style factors.

In September 1990, the NIH Office of Research on Women's Health was created and had as a primary goal the establishment of a comprehensive agenda for women's health, spanning each stage of a woman's life. Ruth L. Kirschstein, MD, was appointed acting director. President Bush nominated Bernadine P. Healy, a Cleveland cardiologist, to be the director of NIH on January 23, 1991. Dr. Healy, who had written and spoken in favor of enhancing the role of women—both as subjects and investigators—in biomedical research, was approved as the first woman to head NIH.

Dr Healy announced on April 19, 1991 that the women's Health Initiative, the most definitive, far-reaching study of women's health ever undertaken, will examine osteoporosis, heart disease and stroke, and cancer. Its three components encompass: a large prospective surveillance study, a nationally-based community intervention and prevention-surveillance study, and randomized clinical trials. This study, spanning 10 or more years, will examine the effects, if any, of menopause on disease in older women. Diet modification, smoking cessation, physical exercise, and use of hormones as a means of preventing CVD will also be investigated. Risks associated with HRT will also be addressed. Dr Healy stated, "Through this study and other NIH-supported studies, we hope to find some answers for women regarding the safety of HRT as well as the length of therapy and combination of therapeutic drugs that are most efficacious."[4(pp131-132)] The NIH Office of Research on Women's Health will coordinate the WHI. Feminists will need to address the issue of whether this is research on women or research for women.[58]

US Congress

A workshop panel convened by the Office of Technology Assessment (OTA), an arm

of Congress, was asked by Senator Adams, Chair, and Representatives Schroeder and Snowe to review what is known about menopause, HRT, and questions about its risks and benefits for the Senate Labor and Human Resources Subcommittee on Aging. Dr Wulf Utian chaired the OTA panel consisting of physicians, medical researchers, and drug company representatives. Dr Utian stated that HRT could be important for preventive medicine.[59] There is a great need for nurses to be represented on such panels.

The House of Representatives Select Committee on Aging held a hearing before the Subcommittee on Housing and Consumer Interests entitled "Women at Midlife: Consumers of Second-Rate Health Care?" on May 30, 1991. The Chairperson of the Subcommittee was Representative Marilyn Lloyd. The purpose of this hearing was to examine societal attitudes about menopause, the quality of information available to women consumers of health care, and how the traditional model of health care delivery falls short of meeting the needs of midlife women. Eleven witnesses testified before the Subcommittee, the general audience, and the press.

At this hearing, Dr Healy eloquently clarified the HRT public policy issue. She stated that appropriate public policy decisions concerning the use of estrogen alone or in combination with progestin for replacement purposes can be intelligently made only after the results of research in this area become available. She made clear that given the current state of knowledge and the questions remaining to be addressed, it is premature to attempt to develop public policy in this area. In terms of CVD, she stressed that the scientific basis for recommending HRT as protection against the development of CVD in women is being examined but has not yet been established.[4] Her clear message can only be applauded by feminists concerned about HRT for CVD prevention.

HEALTH POLICY

Because of actions taken by the women's caucus in opening up the whole HRT question before Congress and the media, as well as the rigorous research approach Dr Healy brings to the question, women's health policy advocate groups such as the National Women's Health Network (NWHN), that have long opposed the use of HRT as a public health measure, are gaining support. They are being included in government hearings and policy-making meetings.

This is an opportune time for nurses to extend their roles in policy formation to include their involvement with the FDA study groups, select work groups organized by the Office on Women's Health, NIH hearings on the Women's Health Research Agenda, and congressional hearings. Nurses could advocate for research emphasizing preventive strategies rather than treatment strategies for CVD.

Currently there is some common ground in the vision held by the director of NIH for improving older women's health and that of nursing and women's health movement activists. This convergence could be forged into a powerful coalition that would inform

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women of ways to prevent CVD, as well as of the risks and possible benefits of controversial medical treatments for women, including hormones to prevent CVD.

NURSING'S RESPONSE

The diverse ways in which women think about CVD, try to prevent it, and perhaps live with it and die of it are almost as unknown and mysterious as menopause itself was 15 to 20 years ago. Few women have had the opportunity to tell their stories. Their silence is joined by that of health professionals including nurses who, if critical of HRT in the past, may be overwhelmed by the media and medical literature blitz focusing on menopause as the major risk factor for CVD.

Nurses can respond on several levels to the challenge to empower themselves and other women on this critical issue. First, basic knowledge is needed about the physiology of menopause, the development of CVD, and the medical model of treatment. Critical questions can be raised as to when and whether HRT can be an appropriate treatment, what role large pharmaceutical companies play, and how an alternative view on CVD in women can be disseminated by nurses.

Secondly, existing educational, clinical, and research structures can serve to counteract the dominant HRT–menopause as illness-creating ideology that currently dominates nursing journals, textbooks, menopause conferences, and the mass media.

In undergraduate education, the issues of ERT and HRT could be incorporated into the portions of the nursing curriculum dealing with CVD. This would offer an opportunity for students to use critical thinking about the application of biomedical research to nursing practice, the politics of research funding, and health policy development. It could also be used as an example of the nurse as patient advocate giving risk versus benefit information to postmenopausal women who are struggling with the question of taking or not taking hormones. It would also make an excellent case study of nursing ethics, particularly if the context in which a nurse works is one in which prescribing hormones is common, as it is where many nurse practitioners are employed.

In master's level education, the existing models of delivering health care to postmenopausal women could be identified and critiqued. New models, such as Utian's medically oriental menopause clinic[59] and Garner's consumer-designed preventive health care model,[60] could be compared and contrasted. Which model, for example, would incorporate a critical analysis of HRT for CVD? Given the current state of the national economy and lack of health insurance for many postmenopausal women, students could be asked as well what realistic interventions nurses could make in traditional work settings.

Doctoral education could provide students with dissertation research possibilities to use feminist research methods[61] for investigating, with older women, the many facets of CVD so that their voices could be heard. Nursing interventions to reduce CVD risk factors, such as smoking cessation programs, weight control counseling, and biofeedback to lower blood pressure, could be researched, developed, and tested.

In the clinical area, nurses and nurse practitioners will be in direct contact with

midlife women who question whether taking HRT postmenopausally is appropriate for preventing CVD in their 70s or beyond. Here the setting where nurses work will be critical. Is it a setting that allows them to have autonomy regarding how they handle this issue of choice? Or is it a setting where the physician prescribes hormones as a given and the nurse is expected to remain silent? Does the agency have mechanisms for dealing with ethical problems such as this as they arise? Is it possible to have inservice programs with a non-illness focus on the various perspectives of menopause? How can the nurse find or create alternative informational brochures for clients on menopause and CVD that are not provided by the omnipresent drug representatives? Midlife women would profit if nurses and nurse practitioners could create midlife health centers for women that offered health promotion, maintenance, and care of the ill using a model grounded in feminist science, theories, and praxis.

Nursing researchers are in a position to critique methods used by patriarchal science, including NIH, to investigate menopause. When claims are made by even the most prestigious biomedical researchers that hormones are necessary to protect postmenopausal women from CVD, the following questions need to be asked about their study: Was this a random, experimental, prospective study (10-year minimum) with a large population of ethnically, racially, and class diverse women? Was the type, dose, and length of hormone intervention clearly defined? Was this study, as all valid ones are up to this point, a report of ERT and not HRT? Did the report honestly make this distinction? Nurse researchers in the past have commonly shared Dr Healy's vision of holistic research on menopause by exploring primarily the physiology of menopause and how women experience menopause.[62]

This is an opportune moment to seek funding for menopause-related nursing research. One nurse scientist has received funding from the National Center for Nursing Research for two research projects related to women's decisions concerning HRT.[63] Finally, nurse researchers can share their analysis of the medical model of menopause and their own research on menopause with a wide variety of women by publishing not only in professional journals, but also in newspapers and women's magazines as well.

As nurses, we can make it possible for postmenopausal women to have emancipatory knowledge about their choices concerning HRT to prevent CVD. Many women are confused and anxious and need judicious advice and personally tailored information. It is time to break our silence.

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