WOMEN IN MEDICINE
THIRD EDITION
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CAREER AND LIFE MANAGEMENT

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This is our third edition of an evolving book concerning the well-being of today’s women physicians. Our experiences, a tremendous amount of new data, a changing medical milieu, and an additional major editor/author contribute to a substantial revision of our previous works.

The first and second editions of this book were entitled *Stress and Women Physicians* (Bowman MA, Allen DI, 1988, 1990, Springer-Verlag, NY). As we were planning for this third edition, we realized that though there are stresses in women physicians’ lives, this was the wrong emphasis for the book. Of course, everyone, including women physicians, experiences stress. Like men physicians, women physicians have made considerable investments of time, emotion, and money to achieve their professional stature and have weighty professional responsibilities. Like other women, women physicians may have larger “second-shift” responsibilities at home than do many men. However, women physicians may also have disproportionate joys and reliefs. Like other physicians, we have the privilege of jobs that improve and may even save others’ lives, earn very good incomes, and are in an esteemed profession. And unlike most other women (and many men), because of our salaries we can afford to hire others to perform many dispensable tasks and can work fewer hours yet still earn enough to support our families.

This explanation and title change is not intended to negate the special and sometimes substantial stresses that women physicians may feel; indeed the major purpose of this book is to help women physicians cope with these stresses. However, we do not wish to support a nineteenth-century notion that
if you educate women they somehow become otherwise bereft. As you will see in this book, there is substantial evidence that women physicians usually thrive; our aim is to make that thriving condition even more common!

The woman who chooses medicine as a career faces many challenges. Women have consistently been shown to be equally competent to men physicians. However, the numbers of women in the field has increased dramatically in recent years without the achievement of equality with men at many levels—pay, academic advancement, and power. With an authority structure dominated by men, the norms in medicine are long working hours and the perception that a career as a physician is more important than family ties or time.

Because of their increased numbers, women physicians may feel less isolated and have more role models. Although this will provide a positive influence, it will not remove the continued need for decision making and priority setting concerning personal life and career, an issue men also face, but for which they may have fewer expectations for participation in home life and child-rearing.

As long as there are women physicians, there will be women's issues. Particular needs will change with time, external events, and individual women themselves. This book is intended as a picture of today's women physicians, as well as thought-provoking resource on dealing with the joys and challenges of being a woman physician in the new millennium.

The third edition is a monument to the current intense interest in the issues of women physicians. The amount of research and commentary that has been written about women physicians in the last few years has been tremendous, expanding our understanding of the role of women in medicine. This edition includes much information from a major new project called the Women Physicians' Health Study, which is described in more detail in the introduction. We have also added additional authors and new chapters on disabilities, and minority and older women physicians. Because of advancing laws and legal cases, information on sexual harassment and discrimination have been significantly updated.

We hope this book will be useful to all women physicians and to interested others, and will provide as much of a learning experience for its readers as it has for its authors.

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Marjorie A. Bowman, M.D., M.P.A.
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Erica Frank, M.D., M.P.H.

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tivate healthy personal habits among physicians so that they will become more avid preventionists). Among other volunteer roles, she serves on the national boards of the American College of Preventive Medicine and Physicians for Social Responsibility. She is married to a psychiatrist/environmental activist, and they have a 5-year-old son. She lives in co-housing in Atlanta and in an energy-independent home in a corner of the Southern Nantahala Wilderness.

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INTRODUCTION: THE WOMEN PHYSICIANS' HEALTH STUDY

Dr. Erica Frank is the Principal Investigator for the Women Physicians’ Health Study (WPHS). This is a survey study of 10,000 women physicians, funded primarily by the American Heart Association, the American Medical Association Foundation and the Emory Medical Care Foundation. The sample was stratified, evenly divided between women randomly selected from each of the last four decades' graduating classes. It includes women who are practicing, inactive, and retired. The survey asks questions about both professional and personal lives, including sociodemographic and psychosocial characteristics, health behaviors, health status, and counseling practices. The first survey was sent in September 1993, and the enrollment was closed in October 1994. The response rate was 59% of the eligible physicians ($N = 4,501$). A partial bibliography from WPHS is included in the back of this book; an updated bibliography can be found at the website for WPHS, http://med.emory.edu/WPHS/.
Women have practiced medicine for many centuries. In ancient Egypt there were many women students and women professors in the medical schools and, in about 1500 B.C., both Moses and his wife were students of medicine (Turner 1981). There has also been a long history of discrimination against women in medicine, recorded at least as early as 1421, when a petition was presented to King Henry V to prevent women from practicing medicine (Heins 1979). The first formal degree awarded to a woman is said to have been to Constanza Collenda in 1431 (Nadelson 1983).

Before the nineteenth century, the most common type of health care giver was the female midwife; labor and delivery were considered too “dirty and debasing” for men (Fidell 1980). It was not until the nineteenth century that men began entering obstetrics/gynecology in large numbers, and discrimination against women as physicians became powerful, vocal, and open, often on the basis of economic competition. An 1848 textbook on obstetrics, for example, stated that a woman’s head was too small for intellect, but just “big enough for love” (Shyrock 1966). Thus, it said, women should not practice medicine. Medical schools would not admit women. Harvard Medical School was going to admit a woman, Harriet Hunt, in 1850 but did not do so after the male student body protested strongly (Walsh 1977). In spite of this initial rejection, Dr. Hunt is credited with being the first woman to successfully practice medicine in the United States, beginning in 1835 (Walsh 1977), and became known as the “mother of the American woman physician” (Abram 1985).
In spite of the admission of the first woman to a "regular" medical school, Elizabeth Blackwell to Geneva Medical College in 1847, which many thought to be an accident (Abram 1985), there continued to be a lack of opportunity for women in medical schools. As a result, three medical schools specifically for women were opened by 1864: in Boston, Philadelphia, and Cincinnati (Walsh 1977). The first black woman physician, Rebecca Lee, graduated in 1864 from the New England Female Medical College in Boston (Abram 1985). Medical societies, however, continued to refuse admission to women, and it was exceptionally difficult for women to receive an academic appointment outside a women's medical school. In 1868, Howard University Medical School was chartered and supported by the government to train black physicians (Abram 1985). By 1870, the percentage of women physicians in the United States was only 0.8% (Heins 1979), very few of whom were minorities.

Some success was achieved when combined fund raising efforts, and a particularly large sum of money from one woman, created a $500,000 endowment at Johns Hopkins University in return for the equal admission of men and women, beginning in 1893. In spite of this, only 16% of the students were women in 1893–94 and 7% in 1907–08. However, gains were made; by 1900, women constituted 18.2% of all physicians in Boston, and 42% of the graduating class from Tufts University. In the United States at that time, 6% of all physicians were women (Abram 1985).

More men than women feel that women have made a lot of progress at work, as customers, and in the media's portrayal of them (Hunt AR. Major progress, inequities cross three generations. Wall Street Journal, Thursday, June 22, 2000, page A9).

Unfortunately, the success women physicians gained by 1900 was temporary. For a variety of reasons, a number of the medical colleges created for women either merged with male schools or closed. The percentage of women physicians declined to 4.4% of physicians by 1940, and did not again reach over 6% until 1950, after the influx of women medical students during the war years (Walsh 1977). Even in the mid-1970s, discrimination against women on
the part of some medical schools was overt in the listing of their medical school admission requirements (Walsh 1977).

"Hard study killed sexual desire in women. It took away their beauty, brought on hysteria, neurasthenia, dyspepsia, stygmatism, and dysmenorrhea." Educated women could "not bear children with ease because study arrested the development of the pelvis."

Dr. Van Dyk, President of the Oregon State Medical Society, 1905 (Bullough 1973).

There was a continual slow rise in the numbers of women in medicine in the United States from the early 1900s until another major surge in numbers started during the 1970s. In 1970–71, the percentage of women in medical schools was 8.9%, reaching 43% in 1997–98 (Bickel et al 1998). The percentage of women physician overall had advanced to 22% by the end of 1997 (AMA 1999).

Women have, in spite of their low numbers as physicians, been the majority of workers in the health care sector [about 85% (Brown 1975)], although the minority in leadership positions. Women will have to do more than increase their numbers to have an impact at the leadership level.

Thus, women represent a growing minority of the physicians in the United States. Many battles have been fought to achieve the current standing for women, but substantial inequality persists.
Stress reactions are probably genetically ingrained from our early ancestry. The “fight or flight” response served our ancestors well. When a saber-toothed tiger approached, the sympathetic nervous system reacted automatically. The heart rate increased along with blood pressure. Breathing became shallow, and muscles tensed for action. Blood flow to the extremities decreased and fingers and feet became colder. In modern society these automatic responses have lost their evolutionary advantage. Although there are no longer saber-toothed tigers, the prehistoric stress response remains. It is estimated that approximately $75 billion a year is lost on illness and absenteeism related to stress in the United States (Walis 1983).

RESEARCH ON STRESS

The “father of stress” is Dr. Hans Selye (1976), who defined stress as the non-specific response of the body to any change or demand. This means any change, positive or negative, can induce stress. Stress can also be additive. The seemingly minor hassles of everyday life can add up to a substantial, chronic stress response. Selye examined brain tissue after physical stress and found that the level of norepinephrine dropped 20% and epinephrine dropped 40%. Stress also boosted the body’s production of endorphins, which may be the
The Stress of Our Profession

The body’s natural mechanism for raising its threshold to pain. The alteration of the body’s chemistry may potentiate the development of many diseases.

The stress response involves many body systems and includes such reactions as increased arousal and alertness; increased cognition, vigilance, and focused attention; suppression of feeding behavior; suppression of reproductive behavior; oxygen and nutrients directed to the central nervous system and the stressed body site; altered cardiovascular tone; increased blood pressure and heart rate; increased respiratory rate; increased gluconeogenesis and lipolysis; and inhibition of growth and reproductive systems (Chrousos and Gold 1992). The chronic activation of these systems can explain depression and other psychiatric disorders such as anorexia nervosa, panic anxiety, obsessive-compulsive disorder, excessive exercising, chronic alcoholism, malnutrition, and premenstrual syndrome (Chrousos and Gold 1992). As an example of this, in one study of 1,523 married professional and managerial employees of a major U.S. corporation, both occupational and domestic stresses were separately associated with depression (Phelan et al 1991).

Stress influences our immune responses (Glaser et al 1999). Glaser et al noted evidence of changes in cytokines as a result of stress hormones, less immune response to vaccines for stressed individuals, and greater susceptibility to the common cold when an individual is stressed. Genital herpes recurrences in women were associated with persistent stressors and high levels of anxiety but not short-term stressors or life change events (Cohen et al 1999).

Stress has also been linked to higher rates of heart disease and hypertension. For example, the more stressful the job, the higher the rise in blood pressure (Schnall 1998). Lack of control of the work environment is associated with heart disease (Johnson and Hall 1988; Karasek 1981 et al). La Rosa (1988) in her review of the literature concluded that perception of control over the job could be a greater risk factor for coronary heart disease than the level of other types of job distress. Mental stress testing can provoke myocardial ischemia (Krantz et al 2000). Anger, sadness, frustration, and tension all appear to be significant triggers of ischemia in patients with coronary artery disease (Krantz et al 2000). Conversely, better social support and better economic increases is associated with a better prognosis in cardiac patients (Krantz et al 2000). Depression after a heart attack is associated with increased mortality (Krantz et al 2000) and with the development of hypertension (Davidson et al 2000). Increases in the number of social interactions are associated with better cardiovascular health behaviors (Ford et al 2000).

**PHYSICIAN STRESS**

Just as for nonphysicians, lack of control on the job is associated with psychiatric distress and job dissatisfaction, and the presence of social support at work is associated with more job satisfaction and less psychiatric distress for physicians (Johnson et al 1995). These two factors were far more important