SECTION 5

OCCUPATIONAL AND ENVIRONMENTAL DETERMINANTS OF HEALTH

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INTRODUCTION

In this section of *Women and Health* we investigate the potential health impact of a number of occupational and environmental factors on women. A large proportion of the text, however, is devoted to describing social and demographic factors in the lives of women as individuals, as workers, and as family members, because these factors can profoundly affect health outcomes. As Messing states ('Multiple Roles and Complex Exposures', Chapter 39, this section), there is a 'real interpenetration between public and private spheres in working women's lives' and there is 'confusion in the scientific literature about whether to treat women's exposures as occupational'. Indeed, the interplay of social roles is a constant theme running through the section, even perhaps surprisingly to some, in Chapter 42 on 'Occupational Cancer'.

Women's lives can be thought of as a tightly knit fabric, some strands derived from the work for which they are paid, some from their unpaid work as mothers, caretakers, housekeepers, and so on. Their exposures and stresses, as well as their ability to access health-related services, will be greatly affected by the combination of work and home life. The presence of such common threads, however, does not mean that the cloth of women's live can be easily unwoven. The inter-relatedness of social roles and health outcomes is profound; in fact, in many instances they are permanently entwined. Indeed, the concept of 'women's work' is so much a part of the workplace, that for many occupational and environmental exposures, the conditions to which men and women are exposed is simply not comparable, even if they are ostensibly working in the same place and with the same job title. Occupational segregation may no longer be legal, but just as with neighborhood racial and ethnic ghettoes, occupational and task segregation still exists.[1]

One negative result of the dissimilarities of exposures and access to services is that in too many women's health studies, poorly sorted out variables have led researchers to conclude that they have observed gender differences, when, in fact, none exist. The observed differences can more readily be explained by physical and social factors other than biological sex.[2,3] The chapters in this section should be read as providing information about the particular exposures and conditions of the lives of women, and not as studies in 'gender difference'.

This section begins with 2 examinations of current statistics on where women work, in the US and around the world, as well as the major risk factors they may face on the job. (Chapter 37 'Working Women in the United States: A Statistical Profile' and Chapter 38 'International Perspectives: Women's Occupational Health', this section). Without question, labor market opportunities for women are greatly expanded, and now women comprise nearly half the paid labor force in the US. The great majority of women, even those with young children, participate in paid employment. During the course of this author's lifetime, society has progressed from presenting grade school children with lists of 'girls' jobs' and 'boys' jobs,' (as was her experience), to the clear legal prohibition of employment discrimination on the basis of race, sex, age, and national origin. Perhaps equally important has been the striking down of psychological barriers to equal employment opportunities. The entire world of work is open to both men and women's imagination in most industrialized countries. Occupational barriers are far more

likely to be rooted in socioeconomic and ethnic disparities than in sex.

Despite the fact that occupations previously closed to women are by-and-large now open, equal employment opportunity has not led to a drastic redistribution of the occupations in which women work. Interestingly, the occupations of women workers in the US and Canada, for example, are still largely a reflection of many of the 'traditional' roles that women have had – and continue to have – in developing countries: caring for children, tending to health needs of others, delivering food, cleaning and providing personal services, as well as managing small-scale enterprises, which, of course, most families are. Internationally, many women make an economic contribution by carrying out these same functions as part of the informal employment sector.

It is also worth noting that, although narrower than before, a substantial earnings gap in most professions still exists between the sexes, after adjusting for age and education. Women are less likely to have insurance benefits than male workers. And, unlike in virtually all other industrialized countries, most American women do not have meaningful maternity benefits. The health implications of these social factors and disparities are not known, but it is surely unlikely that fewer benefits will yield better health.

There is little evidence that, given comparable exposures, males and females will respond differently to occupational and environmental conditions and risk factors. Repetitive motions, awkward work postures, and unreasonable work pace will lead to musculo-skeletal disorders, a major cause of occupational injury among women and men (Chapter 41, 'Work-Related Musculo-Skeletal Disorders in this section). The gender differential reflects both different job demands and also, in some cases, a differential musculo-skeletal stress because women may be using tools or equipment that better fits an 'average' male than an 'average' female.

Women have potential exposures to a wide variety of toxic substances, at work and in the general environment, some of which can affect reproductive function (see Chapter 40, 'Reproductive Hazards of Occupational and Environmental Exposures', this section). Reproductive hazards at work are not purely a 'women's health' problem. Both male and female germ cells are susceptible to environmental and occupational insult, and epigenetic effects from paternal exposures are a potential route for decreased fertility and adverse birth outcomes. A number of women's jobs have the potential of carcinogenic exposures (see Chapter 42, 'Occupational Cancer'). The incidence of adverse reproductive outcomes and occupational cancer will vary by exposure, and particularly for reproductive hazards, by the specific time in the reproductive cycle at which the exposure occurs. These 2 chapters provide long lists of chemicals and exposure situations that can lead to adverse health outcomes. What is important to note is the very much longer list of 'unknowns'. There are more than 80,000 used in commerce today and only a very small fraction of them have been evaluated with regard to cancer, reproductive, and other health effects.[4] A miniscule number, less than 500 in 2011, are subject to specific legal exposure limits by the Occupational Safety and Health Administration (OSHA). Exposures to carcinogens at work are complemented by an important number of potentially carcinogenic exposures in the general environment and through lifestyle habits, as described in Chapter 43 'Environmental Exposures and Cancer'. Other exposures that should be taken into account are covered in chapters of other sections (see Chapter 50, 'The Impact of the Built Environment on Health' and Chapter 60, 'Vitamin D and Disease Prevention in Women').

The data presented in this section should reinforce the importance of obtaining complete environmental and occupational health histories for health practitioners when caring for women patients. And for health researchers, the section will hopefully help generate ideas for further study so that the impact of occupational and environmental conditions on women's health can be more fully defined. The gaps in knowledge are enormous.

References

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