Gender matters: an integrated model for understanding men’s and women’s health

Chloe E. Bird\textsuperscript{a, *}, Patricia P. Rieker\textsuperscript{b}

\textsuperscript{a}Center for Gerontology and Health Care Research, Brown University, Box G-H3, Providence, RI 02912, USA
\textsuperscript{b}Dana Farber Cancer Institute, Harvard University, Boston, USA

Abstract

Health research has failed to adequately explore the combination of social and biological sources of differences in men’s and women’s health. Consequently, scientific explanations often proceed from reductionist assumptions that differences are either purely biological or purely social. Such assumptions and the models that are built on them have consequences for research, health care and policy. Although biological factors such as genetics, prenatal hormone exposure and natural hormonal exposure as adults may contribute to differences in men’s and women’s health, a wide range of social processes can create, maintain or exacerbate underlying biological health differences. Researchers, clinicians and policy makers would understand and address both sex-specific and non-sex-specific health problems differently if the social as well as biological sources of differences in men’s and women’s health were better understood.

\# 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Gender; Health

1. Introduction

Although significant differences in men’s and women’s morbidity and mortality are well documented, the sources of these differences remain in dispute. This situation prevails, in large part, because clinical and social researchers have seldom explored whether health differences may not simply be either biological or social in origin, but instead may typically result from some combination of the two. In practice, the social and biomedical sciences operate as distinct paradigms with different research questions and often conflicting findings. Because these two fields compete for scarce resources in the form of research funding, researchers from both fields tend to ignore and often even disparage the other’s perspective and work. This competition results in a form of intellectual parochialism which fragments both thinking and funding (Levine, 1995). Consequently, scientific explanations often proceed from reductionist assumptions that differences are either purely biological or purely social. Such assumptions and the models built on them have consequences for research, health care and policy. Although biological factors such as genetics, prenatal hormone exposure and natural hormonal exposure in adults may contribute to differences in men’s and women’s health, a wide range of social processes can also create, maintain or exacerbate underlying biological health differences.

American women’s life expectancy has exceeded men’s since the turn of the century. Part of women’s gain in life expectancy is due to a 90% reduction in maternal mortality — from 73.3 deaths for every 100,000 births in 1950 to 7.3 for every 100,000 births in 1989 (National Center for Health Statistics, 1991). However, since 1980 the gender gap in life expectancy has been closing in the US as men’s gains have begun to exceed women’s. Adjusted for years spent living with a disability, men’s longevity is increasing while women’s longevity is not (Pope and Tarlov, 1991). Despite women’s greater longevity compared to men,
women experience higher rates of morbidity and psychological distress, including anxiety, depression, worry and demoralization (Gove and Tudor, 1973; Kessler and McRae, 1981; Verbrugge and Wingard, 1987; Mirowsky and Ross, 1989).

This paradox of men’s higher mortality and lower morbidity is often explained by gender differences in the patterns of disease, referred to as the iceberg of morbidity (Verbrugge and Wingard, 1987). Men have more life-threatening chronic diseases, including coronary heart disease, cancer, cerebrovascular disease, emphysema, cirrhosis of the liver, kidney disease and atherosclerosis. In contrast, women face higher rates of chronic disorders such as anemia, thyroid conditions, gall bladder conditions, migraines, arthritis, colitis and eczema. Women also have more acute conditions such as upper respiratory infections, gastroenteritis and other short-term infectious diseases.

In this paper, we examine the foundation and maintenance of gender differences in physical and mental health. We consider a range of macro- and microprocesses which affect women’s and men’s health (e.g. genetics and hormones, the underrepresentation of women in certain areas of clinical research, gender differences in health behaviors, the level of attention given to protecting male and female health through occupational safety standards and employment opportunities and role expectations for men and women). Although many of these social processes produce an advantage for one gender, these patterns can shift over time.

Our aim is to demonstrate the value of interdisciplinary research on men’s and women’s health that can lead to creatively integrated models of the social and biological determinants of health. As Levine (1995, p. 2) argued in his essay on the need for creative integration within medical sociology, “relying only upon one approach at the present state of our knowledge can also limit understanding of specific phenomena under study and of their context.” In this paper, we apply this conceptual argument to the social and biological sciences. We acknowledge, as did Levine, the difficulty of combining multiple theoretical perspectives within a single study. However, the proposed interdisciplinary research would provide, at the very least, a constructive dialogue and ultimately a better understanding of the differences and similarities in men’s and women’s health.

We argue that such an approach would inform, enlighten and enrich social and biological knowledge. Moreover, interdisciplinary research will ultimately help us to understand and improve both men’s and women’s health. In addition, we examine the implications of social and biological explanations regarding the basis of differences in men’s and women’s health. We conclude that an explication of gender as a social phenomenon that shapes men’s and women’s lives and, subsequently, their physical and mental health would signify the need for changes in the way scientists, clinicians and public health practitioners address a wide variety of both sex-specific and non-sex-specific health problems (MacIntyre et al., 1996; Umberson et al., 1996).

2. Limitations of single-sex studies on non-sex-specific diseases

Although men suffer earlier onset of many life-threatening chronic diseases, women tend to experience these same health problems somewhat later in life. However, biomedical research has primarily focused on men’s experience of life-threatening chronic diseases (e.g. CHD) which are common in both sexes, while limiting the study of women’s health problems primarily to sex-specific diseases and disorders (e.g. breast cancer). The gender bias in health care research and clinical practice was documented in 1985 when the US Public Health Service Task Force issued its report on women’s health issues. But the knowledge gap was not addressed in any comprehensive way until 1990 when the National Institutes of Health (NIH) established the Office for Research on Women’s Health. As part of this new policy directive, in 1993 the NIH developed the women’s health initiative (WHI) a 10-year study to examine the major causes of death and disability among 163,000 postmenopausal women. While this initiative will generate valuable information on patterns of diseases such as cardiovascular disease, breast and colorectal cancers and osteoporosis, as does the 20-year old nurses’ health study, neither of the significant research projects undertakes the combined biological and social model we are advocating.

Despite these efforts to increase knowledge regarding women’s health, men’s physical condition remains the standard for the evaluation of health states (Roberts, 1990, 1992). Until 1993, these gendered practices were complemented by rigid protectionist policies of the Federal Food and Drug Administration which were intended to prevent the abuse of women as research
subjects and to reduce the risk of fetal exposure to experimental treatments (Mastroianni et al., 1994). However, it is not valid to assume that treatments developed by studying men are directly generalizable to women. Furthermore, single sex studies fail to provide a complete picture of the similarities in men’s and women’s health and morbidity.

Circular logic has been used both to justify the assumptions of biological bases of men’s and women’s health differences and to exclude women subjects from biomedical research on non-sex-specific diseases (Hamilton et al., 1994). For example, one prevalent argument for excluding women from clinical trials is that the study will have more power if a homogenous group is studied. However, if the rationale for excluding women is that they are different, it does not follow that the results from studies of exclusively or predominately male samples are generalizable to women. Consequently, excluding women from these studies leads to a lack of information on the effectiveness of the treatments in women and of their risk of iatrogenic and other side effects. Hamilton (1995) illustrates the negative impact such reasoning has had for understanding the efficacy and safety of drugs for the treatment of depression among women, which is ironic, given the clear excess of depression among females of all ages and their resulting higher use of antidepressants.

To paraphrase C. Blee (1996), research that excludes women subjects assumes that what is important about human health is knowable by studying men. We argue that the inclusion of women as subjects in clinical research provides additional information not only on women’s health but also on possible interventions that would benefit men’s health as well. For example, a better understanding of biological differences which confer a health advantage to one sex could be used to develop pharmaceutical interventions to benefit members of the opposite sex. This benefit would be maximized by studying both sexes and by developing interventions based on the advantages experienced by either sex.

Even when women subjects are included, researchers need to go farther than simply including them in the sample. Sampling and statistical techniques that simply adjust or control for differences in men’s and women’s overall health or response to a given treatment fail to tell us whether the results are the same for men and women. However, additional subgroup analyses by gender can reveal whether or not the results are similar for male and female subjects. In other words, researchers must move beyond simply controlling for gender and begin testing for specific gender interactions. Similarly, although randomization rules out the possibility that differences between the control and treatment groups explain the result, it does not demonstrate that the effects are equally applicable to all of the subgroups represented in the study. Therefore, randomization does not obviate the value of examining whether men and women differ in their responses to treatment as assessed in clinical trials. Increased rigor in this regard could improve medical care for both men and women. Simply by reporting the power of the data to identify possible gender differences and the results of subgroup analyses, researchers would substantially increase the amount of information available to women and their clinicians regarding the generalizability of their results.

Without a broad theoretical understanding of both the similarities and differences in men’s and women’s health, an analysis that focuses only on differences may reinforce the dichotomous thinking about sex/gender or the practice of controlling for gender as an ‘irrelevant’ variable rather than more thorough examination of men’s and women’s health (Taylor, 1997). The advancement of human health and health-related knowledge requires research which includes both sexes and leads to a more integrated understanding of diseases and health problems that affect both men and women. Increasing women’s representation as subjects in clinical research and performing subgroup analyses of male and female subjects will generate additional information necessary to provide quality health care to women. However, these efforts alone will not clarify whether differences in men’s and women’s health (e.g., morbidity, mortality and their relative responsiveness to particular medical treatments) are due to social or biological factors. The latter would require systematic interdisciplinary research combining both social and biomedical dimensions to assess the ways in which these factors interact and affect both men’s and women’s health.

3. Limitations of the biomedical and sociological paradigms

Despite the fact that studies of human health are complicated by the social organization of our lives, the biomedical model of human disease assumes that diseases have the same symptoms and outcome across social circumstances and that medicine is a socially neutral science (Mishler, 1981). As Lorber (1997, p. 2) notes, critiques of the biomedical model have demonstrated that:
what is normal depends on who is being compared to whom, that many diseases have social and environmental causes, that illness rates and severity vary from place to place and that the values underlying medical research, practice, theories and knowledge are deeply biased by the practice situations and social characteristics of the dominant group of medical professionals—physicians.

Clearly, theories and knowledge of medicine are shaped by medical researchers as well as by practicing physicians who typically reflect societal values.

Despite these criticisms, biological theory not only recognizes, but presumes an interaction between an individual's genetic potential and the environment in which it develops and lives. Moreover, biologist Fausto-Sterling (1992:269) argues that "there are very few absolute sex differences and that without complete social equality we cannot know for sure what they are." Yet, this understanding does not inform much of the current biomedical research on human health or lead to more interdisciplinary work incorporating a clear understanding of the ways in which biological differences are acquired as well as inherent (Doyal, 1995).

The limitation of the biomedical paradigm is matched by a parallel shortcoming in the paradigm of social scientists, particularly those examining the social construction of illness. In her compelling book *Gender and the social construction of illness*, Lorber (1997) examines how gender as a socially constructed category affects men's and women's risks and protections for physical illnesses, their behavior when ill, the responses which they receive from health care professionals and influences the priorities of treatment, research and financing. Yet, as with the majority of research on the social patterns of illness, this thorough analysis of the social context of men's and women's health treats biology as socially neutral. It is built on the assumption that inherent biological differences between men and women are either minimal or largely irrelevant. Although biological differences may have no inherent consequences for men's and women's physical capabilities (aside from procreation), they have significant consequences for men's and women's health and health care.

As a result of the near total separation of the sociological and biomedical paradigms, social scientists examining epidemiological data on men's and women's health emphasize the contribution of the socially organized differences in men's and women's lives, whereas biomedical researchers emphasize the inherent physiological differences between males and females. Thus, social and biomedical scientists have to a large extent created distinct knowledge fields. If the goal of the research on health were simply to understand the scope or degree of gender differences in anatomy and physiology, the discussion might logically end here. However, the goal of medical research is to advance human health. Therefore, a precise understanding of both inherent and acquired sex differences that contribute to men's and women's health and health care must be developed. We argue that the social and biomedical knowledge fields can and should be bridged through interdisciplinary research and supportive research policies which we will address. Moreover, the integration of social and biomedical research has the potential for substantial health benefits for both women and men.

4. *Explanations of the sources of observed differences*

Gender differences in opportunities shape men's and women's choices and expectations regarding social roles and role-related activities, which in turn affect their exposures to various risks (including stress, role overload, occupational health problems such as carpal tunnel syndrome and exposure to toxic chemicals) and their access to protective resources (including income, wealth, health and disability insurance and social support). Such a perspective emphasizes the impact of constrained choices in the reproduction of gender roles and gendered behavior whereby boys and girls (and men and women) are able to make decisions about their occupational choice and career and family expectations, but how such choices are made in the face of unequal opportunities and expectations for success. Thus, men and women are the product of their own biology, their social experiences in a stratified society and the gendered roles that they enact. Hence, men and women will make significantly different choices regarding their employment, careers and health behaviors, choices that individually and cumulatively affect
Social and biological theories would predict that if members of one sex were more vulnerable to disease and illness, that would lead to morbidity and mortality rates favoring the opposite sex. While one would expect that members of the socially disadvantaged or physiologically weaker sex would have higher rates of both morbidity and mortality, this is not the case (Waldron, 1983; Verbrugge, 1985). Differences in men's and women's mortality and in their physical and psychological morbidity are a function of the combination of both social and biological factors which appear to operate in opposite directions (Nathanson, 1980; Fausto-Sterling, 1992). For the most part, women's advantages in longevity appear to be related to sex differences which allow them to carry a fetus to term. In contrast, men's health advantages in morbidity and psychological distress appear to be related to their lower levels of role stress, role conflict and the differing demands of men's and women's social roles and work characteristics (Gove, 1984; Mirowsky and Ross, 1989).

4.1. Biological explanations

From a biological perspective it is not necessary for both sexes to be equally hardy, though evolutionary theory would predict that members of a species will survive long enough to produce the next generation. Since there is no evolutionary explanation of why either men or women would have an advantage in surviving well beyond reproductive ages, it could be argued that any biological advantages which women have are simply fortuitous. Biological explanations of women's greater longevity emphasize the health advantages that accrue from the physiological systems which facilitate pregnancy and child birth. These advantages include a stronger and somewhat different immune system that allows women to have higher levels of passive immunity during pregnancy and to pass on a substantial level of protective antibodies to infants during breast feeding (Grossman, Rosell and Mendenhall, 1991; Hegde, 1991). On the downsize, women experience a greater risk of autoimmune disorders and a higher risk of genetic immune suppression disorders (e.g. immunologic diseases ratios for women compared to men: autoimmune thyroid 15:1, rheumatoid arthritis 3:1, systemic lupus erythematosus 9:1, systemic sclerosis 4:1) (Report of the National Institutes of Health, 1992). In other words, women's more robust immune systems put them at greater risk of suffering from disorders whereby their own immune system attacks their bodies. In addition, estrogen provides women a more flexible circulatory system that can carry a 20% higher blood volume during pregnancy. This in turn produces less pressure on the vessels even at higher blood pressure resulting in less damage from high blood pressure in premenopausal women than in men the same age.

Although these biological advantages may contribute to women's greater longevity by lowering their risk of coronary heart disease prior to menopause, they cannot explain women's higher morbidity compared to men's. With the exception of women who experience autoimmune disorders, the physiological processes related to women's child bearing potential should not increase their rates of morbidity relative to men. In fact, based on this information, one would expect women to experience lower levels of acute and chronic infectious disease than men. Yet this is not the case.

4.2. Social explanations

Sociological theory offers insight into women's greater morbidity. Social inequality between men and women accounts for those health consequences that accrue from gender socialization, role-related activities and gender differences in opportunities which provide men and women with different and unequal resources and exposure to health risks (Doyal, 1995). For example, the American labor force remains highly sex segregated, with women working in lower status, lower paid jobs (Reskin and Padavic, 1994). Women are less likely than men to have health insurance or pension coverage despite their greater utilization of health services and their greater longevity (Meyer and Pavalko, 1996). Women have lower household incomes than men because women have lower incomes than men and female-headed households lack a male income. Furthermore, women's financial resources have to go farther than men's because women are more likely to become single parents and to become caretakers to their elderly relatives. The time commitment alone frequently conflicts with labor force participation and time otherwise used to manage their own households which can, in turn, decrease their incomes and increase their expenses. Thus, women experience higher rates of economic hardship than men, especially in their later years when they are more likely to have outlived a spouse and less likely to have a pension to help sup-

---

6 Although men are equally likely to contribute financially to the care of elderly parents, women are far more likely to contribute their time and energy as well as their money, in general, female caregivers provide more of the day-to-day physical and social support, whereas males contribute more to making financial arrangements for and contributions to their elderly relatives. However, given women's lower average incomes, their financial contributions may produce a greater financial strain for many women than do those typically provided by men.
Such economic strains can have direct and indirect port them in retirement (Meyer and Pavalko, 1996). Such economic strains can have direct and indirect health consequences (Doyal, 1995).

In order to correctly assess the social determinants of differences in men’s and women’s health, it is necessary to accurately measure exposure to social and economic stressors. Underestimates of either men’s or women’s exposure to stressors can appear to substantially change gender differences in vulnerability. For example, early health status research focused narrowly on models of workplace stress for men, and much of the current health research fails to assess other sources of stress such as household work and caring for children. Although such studies have suggested that men are more susceptible to workplace stress whereas women are more vulnerable to family stress, their findings may be due to differences in exposure to particular stressors rather than to actual differences in vulnerability (Bird and Fremont, 1991). Although the idea that men and women are exposed to different stresses is not new, only in the past decade have studies begun to adequately address the gendered nature of the relationship between stress and illness (Thoits, 1995; Umberson et al., 1996). Systematic studies must assess men’s and women’s exposures in a range of social roles and role-related activities and provide continuous rather than crude categorical measures of stressors.

Men and women differ significantly in a range of positive and negative health-related behaviors such as cigarette smoking, risk taking behavior and violent-aggressive acts and in their use of health services (see I. Waldron, 1995a; Walsh et al., 1995; Rieker and Janowski, 1995). Waldron (1986, 1995b) estimated that in the US men’s higher smoking-related mortality has accounted for as much as half of the gender difference in adult mortality, including approximately 90% of the gender difference in lung cancer mortality and roughly a third of the gender difference in ischemic heart disease mortality. Recent declines in men’s smoking have begun to narrow the mortality gender gap (Ross and Bird, 1994; Waldron, 1995a). Yet, men’s higher rates of risk-taking behavior continue to put them at greater risk of injury. Men are also more likely than are women to be violent both with women and with other men. In fact, much of men’s excess mortality can be linked to men’s greater risk of injury, including homicide. Women utilize more health care resources than men. This is not explained by women’s higher rates of reproductive health visits (Verbrugge and Wingard, 1987). However, recent analysis indicates that women’s higher rates of health care utilization are in part due to the physical and psychological consequences of men’s violent behavior (Koss et al., 1995).

Because men and women are socialized to perceive and respond differently, some scientists argue that women’s higher morbidity may be an artifact of reporting bias. However, reporting bias has been ruled out as a primary explanation of gender differences in mental or physical health. Women are as reliable as men at reporting symptoms compared to physician assessments and other ‘objective’ measures. In addition, women’s reports of higher depression levels are not explained by greater willingness to report psychological distress (Mirowsky and Ross, 1995; Ross and Van Willigen, 1996). Gender differences in willingness to report symptoms and in neuroticism do not explain women’s higher depression levels compared to men.

While social inequality between men and women can explain women’s health disadvantages, it fails to explain the paradox of men’s and women’s health differences because there is no social theory to explain women’s greater longevity. Although neither social nor biological theories alone offer substantial insight into the complexities of gender differences in health, a combination of social and biological models provides greater insight into both men’s and women’s health.

4.3. Examples of purely social and purely biological differences

Although we have criticized the reductionist approaches that incorrectly attribute differences in men’s and women’s health to purely social or purely biological causes, there are some health differences that could be purely social or biological in origin. In the case of the former, men’s and women’s positive and negative health behaviors, exposure from their daily lives, or differences in their protective resources can produce differential risks of mortality and morbidity. For example, there may be no biological difference in the ability of men and women to perform a particular task, such as diapering a baby or changing the oil in a car. Nonetheless, a process of socialization that encourages boys and girls to become proficient in different tasks can create average differences in the abilities of men and women. In this case, the social organization of men’s and women’s lives affects their relative exposure to certain risks and health behaviors through patterns in men’s and women’s employment, their social roles or role-related activities, or to differences in their social and economic burdens. Biological differences do exist, including sex-linked illnesses such as hemophilia and sex-specific cancers which have genetic, anatomical and hormonal bases.

4.4. Examples of combinations of social and biological causes

In addition to the above simple examples, there are two more complex additive possibilities to consider: amplification and suppression. Amplification involves an underlying biological difference that is exacerbated...
by the social organization of men’s and women’s lives. In contrast, suppression involves a biological difference that is reduced by differences in men’s and women’s lives.

An example of amplification is a possible sex difference in upper body strength. Such a difference would be enhanced by a societal emphasis on strength and physical activity in boys, and either a lack of emphasis or an active discouragement of similar activity in girls. Thus socialization can enhance a biological difference. Clearer health examples are women’s greater risk of depression compared to men, and men’s tendency toward more physically aggressive behavior compared to women. Although these differences may have some biological basis in sex hormones and are sometimes assumed to be inherent traits, they are reinforced (if not created) through a lifetime of gender socialization whereby men and women are given continual feedback on the gender appropriateness of their behavior, style of communication and expectations for their lives and social roles. This socialization process encourages women to accommodate others and allows men to express anger and frustration more readily than women.

In the case of suppression, biological and social factors work in the opposite direction, reducing the observed differences in men’s and women’s health. For example, two previously mentioned biological factors favor women’s health. First, compared to men, women have somewhat more robust immune systems which produce more autoantibodies, monoclonal immunoglobulins and more specific antibodies after immunization with a foreign antigen. Second, women have a lower risk of cardiovascular disease prior to menopause due to the protective effects of estrogen which reduce women’s risk of high low-density lipoprotein (LDL) and low high-density lipoprotein (HDL) levels. Both of these biological advantages accommodate women during pregnancy and, fortunately for women, also have long-term health benefits. Yet, compared to men, women experience more acute conditions (such as upper respiratory infections and gastroenteritis and other short-term infectious disease). In addition, the stress of women’s multiple roles, including the burden of household responsibilities which A. Hochschild (1989) referred to as the ‘second shift’, produces sustained high levels of stress hormones, whereas men’s stress levels peak during the day and decline when they return home in the evening (Frankenhaeuser et al., 1989). In this example women’s social roles appear to diminish some of their biological advantages.

5. Need for interdisciplinary research

Because social and biological models describe different aspects of men’s and women’s health differences, it is crucial that we begin to combine studies of social and biological health risks if we wish to fully understand the determinants of men’s and women’s health and illness. So long as research funding and practice have barriers discouraging interdisciplinary research, it will be difficult to systematically examine the social and biological sources of men’s and women’s health differences. However, we propose that in order to advance health research, a special programmatic effort be made to solicit projects which examine both social and biological factors. Although both the National Institutes of Health and many private foundations have made women’s health a research funding priority, to date none have advocated the integrated model proposed here.

In order to address inequity in men’s and women’s health, it is necessary to understand sex and gender differences and the interaction of the two. Therefore, researchers must study both biological and social factors simultaneously. A health advantage for one sex may arise from differences in men’s and women’s biology, in their social circumstances or a combination of the two. Depending on the nature of the disadvantage and its health consequences, the appropriate interventions might be either biological or social and either individual or societal. In general, we contend that social inequalities should be addressed with social rather than medical interventions even where the inequality has health implications. In other words, minorities, women and the socio-economically disadvantaged should not just be treated medically for higher levels of psychological distress without also addressing the mechanisms through which social inequalities put them at higher risk of distress.

By isolating research into social and biomedical domains, science policy-makers and individual researchers maintain separate models of health, and fail to explore the complex processes by which social and biological processes combine. One unfortunate result of this isolation of research into social and biological paradigms is the failure to test competing hypotheses about the determinants of health. More importantly, science and health care advance more slowly and less efficiently than might be achieved under more ambitious and better integrated approaches.

6. Research implications

Research on gender and health is limited in several ways. Social scientists recognize the biological factors

---

7 This finding of a sex difference in immune system response is common across a wide range of animal species.
but fail to explore them fully in research designs, and biomedical researchers tend to ignore the social processes altogether. Unexamined assumptions regarding the sources of differences in men’s and women’s health affect the development of scientific knowledge. These underlying assumptions shape the questions that have been and are currently being asked in scientific research. In addition, they affect the range of hypotheses that are tested. In doing so, these often unarticulated assumptions are reified as scientific knowledge accumulates in the artificially distinct areas of biological and social science research. Thus, individual studies rarely examine the independent and combined effects of social and medical interventions. Consequently, the relative impact of each type of intervention can only be determined by comparing the results from separate studies and the potential combined effects are uncertain. In contrast, an integrated approach would examine the effects of both social and medical interventions.

For example, studies of hypertension could assess both stress reduction and pharmacological interventions in order to determine whether the independent and combined effects are the same for men and for women. Such an approach would also establish a dialogue across social and biological disciplines studying the same health outcome.

Some of the misunderstanding about how to proceed may be the result of confusion about terminology. In order to explain the ways in which social and biological factors combine to affect men’s and women’s health, it is necessary to clarify what is meant by ‘sex’, ‘gender’ and ‘gender differences’. The term ‘gender’ refers to socially created characteristics of men and women. Medical researchers have widely adopted the use of the term ‘gender differences’ to describe any observed differences between men and women as well as specific differences in men’s and women’s relative rates of mortality and morbidity. Yet, few studies go beyond this tacit acknowledgment that such differences are not solely biological to examine the ways in which such differences are in part created by differences in men’s and women’s daily lives. Although the term ‘gender’ has rapidly replaced the term ‘sex’ in health care research; unfortunately, this change in terminology has not brought with it greater clarity about the contribution of social factors to men’s and women’s health. Instead, the term ‘gender difference’ has frequently been misapplied to describe purely biological differences in sex organs, sex specific diseases and even male–female differences in animal studies where the biological basis of such differences should be clear.

There are serious consequences of assuming either biology and physiology (inherent sex differences) or social factors (socially constructed gender differences) are the sole determinants of health status. Reducionist explanations of men’s and women’s health differences can result in a lack of research on male/female differences in biology and physiology. For example, researchers may assume that observed male/female ratios in diseases are due to differences in vulnerability rather than to exposure and thereby delay or prevent research that could lead to advances in prevention and treatment that would benefit both men and women. In addition, a failure to explore the sources of differences in men’s and women’s health may yield a lack of knowledge on where to intervene most efficiently to improve men’s and women’s health. By focusing on the biological explanations, most research implies that the best points for intervention are at the individual level (such as addressing health behaviors and access to care rather than addressing the impact of social factors), overlooking the possibilities for more distal systematic interventions to improve the health of the population.

Disciplinary boundaries reinforce the separation of research into biomedical and social science approaches. As previously mentioned, public and private research funding further delineates a separation between research on social and biological sources of disease and ill-health. The social and biological sciences differ in regard to their assumptions about the sources of differences in men’s and women’s health, the separation of these fields of research discourages a critical examination of the role of alternative explanations which fall outside disciplinary boundaries. Consequently, the organization and funding of research maintains the status quo. Even individual studies assessing health-related quality of life as an outcome typically fail to examine both social and biological interventions.

In addition, it is necessary to move beyond gender biased assumptions about the relative social and biological advantages experienced by either sex. Just as there are trade-offs for women’s biological advantages, there may also be health trade-offs for men in their social advantages. For example, a study of the doctor–patient interaction by S. Kaplan et al. (1995) found that men are less likely than women to directly ask physicians about their health problems. She argues that women learn early on, in part through awkward clinical encounters such as gynecological visits, to persist in asking direct questions about their health conditions and possible treatments. Thus, a simple assumption of female disadvantage in health care seeking or access fails to capture gender differences in
7. Policy implications

How would health policies and health-related social policies address men’s and women’s concerns differently if gender were better understood? Our understanding of any problem affects the range and kind of solutions that are developed to redress it (Auerbach and Figert, 1995). For example, how we understand a problem such as low birth weight in black infants impacts the policies, interventions and treatment of black women who give birth to small babies. The strategies would change depending on whether we assume that black and white differences in birth weight are due to mothers’ behaviors, social inequalities and related health risks, or biological differences in black and white women’s risk of delivering a low birth weight baby. Similar consequences occur in addressing men’s and women’s health problems, depending on whether differences are presumed to originate from differences in reporting, vulnerability, or exposure to particular stressors and risks.

Social policies may produce or exacerbate health differences between men and women by providing them unequal access to health insurance or other socioeconomic resources whether or not the policies explicitly treat men and women differently. For example, couples are required to ‘spend down’ their economic resources in order for one spouse to enter a nursing home under Medicaid. Although this policy ignores gender, it impacts men and women differently because women are more likely to be the impoverished surviving spouse (Meyer and Pavalko, 1996).

Some social policies do explicitly treat men and women differently. These too may have unintended health consequences. For example, policies designed to protect members of one sex, such as restrictions on women’s participation in medical research, may have unintended consequences for members of both sexes by limiting the development of knowledge regarding various aspects of human health and disease.

8. Implications for men’s and women’s health and health care

Current knowledge and assumptions about men’s and women’s health affect the provision of health care services. In particular, these assumptions shape the understanding of men’s and women’s health needs as well as their risks. This, in turn, can affect the quality of care due to difficulty in recognizing particular diseases or side-effects in members of the sex perceived to be at lower risk for a problem. Historical examples include the early failure to recognize HIV-related infections in women and the long-held belief that women were not at significant risk of heart disease. The negative consequences of these misunderstandings extend beyond the potential for inequitable medical treatment and have resulted, for example, in women underestimating their risk of cardiovascular disease (see Yankelovich Partners, Inc., 1997). As a result, women may fail to recognize the need for preventive health behaviors such as exercise and smoking cessation. Furthermore, men’s health risks are frequently underestimated with regard to fertility. For example, the potential negative effects of chemotherapy on women’s fertility has long been recognized and studied while the impact on men’s fertility has been largely ignored (Rieker, 1996).

In addition to the obvious effects on women’s health care, we argue that gender stereotypes and assumptions also hamper men’s health care. For example, many researchers and clinicians believe that men are not interested in seeking psychosocial support for problems such as prostate cancer through support groups, despite the fact that men are less likely than women to have a support network of friends and relatives with whom they commonly discuss their social and emotional needs. Whereas women have succeeded in organizing substantial support for breast cancer patients and survivors, until recently there was little similar support for men with prostate cancer. Like breast cancer, both the disease and the treatment are disfiguring and they significantly affect men’s physical and sexual functioning. These consequences as well as related symptoms (such as hot flashes and incontinence) have identity-threatening impacts for men with prostate cancer. In the case of non-sex-specific diseases, both men and women might benefit from more inclusive research on men’s and women’s risk of cardiovascular disease.

Finally, strategic research on social and biological factors affecting men’s and women’s health could reduce disparities by improving research, prevention, diagnosis and treatment. More interdisciplinary research is necessary in order to adequately examine issues of gender, race/ethnicity, and class in studies of health behaviors, morbidity and mortality.

Acknowledgements

Earlier versions of this paper were presented at the American Public Health Association Annual Meetings in New York City, November, 1996 and the Annual Meetings of the Society for the Study of Social Problems in Toronto, Ontario, Canada, August 8–10,
1997. We thank Melissa Clark, Elizabeth Ettorre, Anne Fausto-Sterling, Andrew London, Elinanne Riska, and Susan Roxburgh for their comments on earlier versions of this paper.

References


Kaplan, S., Gandek, B., Greenfield, S., Rogers, W., Ware, J.E., 1995. Patient and visit characteristics related to physicians’ participatory decision-making style. Results from the Medical Outcomes Study. Medical Care 33(12), 1176–87.


Mastroianni, A.C., Federman, R., Federman, D. (Eds.), Women and Health Research: Ethical and Legal Issues of Including Women in Clinical Studies. Institute of Medicine, National Academy Press, Washington, DC.


