Breast Cancer:  
The Importance of Prevention in Public Education

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It is a well cited statistic that one out of every eight North American women will develop breast cancer during their lifetimes. Approximately, seventy percent of women who develop breast cancer have no known risk factors, other than advancing age (Breast Cancer Society of Canada, 2006). In order to understand what information is readily available for women on the issues surrounding breast cancer, an examination of public education literature distributed by different health care organizations in Halifax, Nova Scotia was conducted in 2003. It is vital that women have access to information which not only offers the traditional biomedical model treatment options, but promotes prevention awareness, recognizing the role played by social, economic and environmental factors.

One of the most prominent areas of scientific research during the 1990s was the identification of genetic links to diseases, including the discovery of the breast cancer susceptibility genes, BRCA1 and BRCA2 (Sherman, 2000). It is important to remember, however, that genes do not work in isolation; their effect is a product of DNA programming operating within a particular set of environmental conditions (Sherwin, 1994). It is a well cited statistic that one out of every eight North American women will develop breast cancer during their lifetime. Breast cancer deaths comprise the second highest cancer death rate, after lung cancer, among Canadian women and seventy percent of women who develop breast cancer have no known risk factors, other than advancing age (Sherman, 2000; Breast Cancer Society of Canada, 2006). In order to understand what information is readily available for women on the issues surrounding breast cancer, an examination the public education literature distributed by health care organizations in Halifax, Nova Scotia was conducted. This research is based in qualitative content analysis and utilizes pamphlets and brochures from the Halifax Breast Cancer Screening Clinic, the Canadian Breast Cancer Foundation, the Canadian Cancer Society and Cancer Care Nova Scotia. It is vital that women have access to information which not only offers the traditional biomedical model treatment options, but promotes prevention awareness, recognizing the role played by social, economic and environmental factors.

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Sociology of Health & Illness

Society and social institutions shape the occurrence of disease, the forces called upon to respond to disease and the experience of illness. Kasper and Ferguson (2000) contend that ‘[s]ocieties in part create the disease they experience, and further, they materially shape the ways in which diseases are to be experienced… [T]he varieties of human affliction owe as much to the inventiveness of culture as they do to the vagaries of nature’ (Kasper & Ferguson, 2000, p. 3). Physicians are in a highly authoritative position to shape a society’s thinking about the character of illness and how it should be treated. Over fifty years ago, medical historian Erwin H. Ackernecht argued that disease is not strictly a physical phenomenon (Karp, 1996). Most researchers in the behavioural, biomedical and physical sciences are trained in the scientific method and believe in its power. It is argued, however, that few are aware of its historical and philosophical roots in logical positivism and objectivity (Rosser, 2000). The methods of positivist science suggest explicitly that the tasks of identifying, diagnosing and treating any disease entity are independent of and unaffected by the social, cultural, political, or economic contexts within which both physicians and patients may live their lives (Frankel, Speechly & Wade, 1996).

It is important to examine the ways in which medical and scientific knowledge are determined, created and constructed by, or at least influenced by social conditions. The literature within the sociology of health and illness allows us to look at breast cancer with a social lens rather than a medical one, raising significant new questions. For example, instead of wanting to know the results of the latest clinical trial, we want to know why some forms of research are being undertaken while others are not, which scientists get funded and why, who is paying for breast cancer research and who benefits from the findings. The vast public and private research enterprise can be viewed as a social institution. The goals of the research establishment should include finding answers to perplexing and pressing questions about disease, but its goals are also economic and political and these dimensions influence research priorities and resources (Kasper & Ferguson, 2000).

In the past two decades, social scientists have studied the bias and absence of value neutrality to science, specifically in the discipline of biology. Scientists have introduced flaws into their experimental results in several areas of biology by excluding females as experimental subjects (Rosser, 2000). Exclusion of women from clinical drug trials was so pervasive that a meta-analysis, published in 1992 in the Journal of the American Medical Association, surveying the literature from 1960 to 1991 on clinical trials of medications used to treat heart attacks, found that women were included in less than twenty percent and the elderly in less
than forty percent of those studies. Thus, the individuals most likely to benefit from these medications were excluded from most of the clinical trials (Rosser, 2000).

Although difficulties with breast cancer research reflect the general problems facing women’s health research in North America at this time, breast cancer research faces some unique problems. Through the 1980s less than five percent of American women with breast cancer participated in clinical trials; those most at risk of dying from breast cancer, older women and African American women, had even lower participation rates in clinical trial research, often due to lack of knowledge about clinical trial research and access to participation (Rosser, 2000). Biomedical researchers used biology as a justification for their male focus, citing estrus cycles in nonhuman females, menstrual cycles in women and life changes correlated with changes in the reproductive cycle, such as pregnancy and menopause. For breast cancer research, this missing information is critical in order to understand causes and treatments of a disease where hormone levels and reproductive history have documented, critical roles. Differing estrogen levels among women and changing levels associated with pregnancy, breast-feeding and menopause have been correlated with different risks, treatment successes and mortality outcomes in breast cancer. A long history of understanding changes in hormone levels over the life cycle of women from diverse races, ages and social classes, with differing reproductive backgrounds, appears crucial for breast cancer research (Rosser, 2000). Einstein argues that political, social, cultural, sexist and racist factors intersect in the field of breast cancer and this should be recognized and incorporated into the epidemiological work surrounding breast cancer (Einstein, 2001, p. 86).

**Breast Cancer, Society & the Environment**

The main emphasis in almost all references to breast cancer are treatment, reconstruction and genetic factors. *Adweek* describes breast cancer as a ‘dream cause… it’s the feminist issue without the politics… without controversy’ (Zones, 2000). Politicians may have adopted breast cancer issues to straddle the gender divide, but breast cancer is an illness that is surrounded with controversy. Breast cancers visibility, accompanied by a wealth of economic and political possibilities, has made the illness a province of entrepreneurs (Zones, 2000). Boehmer contends that research on both women’s health and cancer prevention is underfunded and that cancer is dominated by the economic interests of the cancer industry and its gender dynamics (Boehmer cited in Potts, 2004a).

The tradition of researching a disease and how to cure it rather than studying health with the goal of preventing illness places responsibility on the individual rather than the society as a whole. Focusing basic
research at the level of the cell and below also has consequences for treatments developed to treat disease. Susan Love’s (2006) characterization of ‘slash, burn and poison’ as the treatment methods for breast cancer highlights the cellular approach (Love, 2006). The theory of cancer as cells growing out of control leads to treatments that attempt to limit cell growth by surgically removing the cells (slash), killing the cancer cells which divide more rapidly than nonmalignant cells (burn through radiation therapy) or changing the cellular environment to one that is less favourable for the growth of cancer cells (poisoning through chemotherapy). These treatments encourage resources to be directed towards treatment in individuals and away from societal prevention of cancer. They center on the individual and her body while diverting attention from surrounding social, economic and political factors that may contribute to the disease and its progress (Rosser, 2000).

Breast cancer incidence rates are highest in North America, Europe, Australia and New Zealand; however rates are rising among recently industrialized countries (Klawiter, 2000; Evans, 2006). Migrant studies by epidemiologists address whether breast cancer risk can increase or decrease when women move to a location with different rates. For example, Japanese women who have immigrated to the United States or Canada tend to have higher breast cancer incidence rates than women who remain in Japan. This suggests that factors other than genetics are significant in relation to the cause of the disease and has led researchers to believe that environmental factors, such as diet and exposure to carcinogens, play a significant role in the development of breast cancer (Nagata & Shimizu, 1996; Hirshaut & Pressman, 2000; Evans, 2006).

The popular and scientific presses emphasize a woman’s risk for developing breast cancer. The traditionally mentioned risks are individualistic (Potts, 2004b) and include a family history of breast cancer; early onset of menarche; late onset of menopause; never pregnant or first full-term pregnancy after age 30; not breast feeding; obesity and/or a high fat diet; oral contraceptive use; personal history of fibrocystic disease, ovarian or endometrial cancer and excessive alcohol consumption (Sherman, 2000, p. 11). However, these factors account for less than 30% of breast cancers (Sherman, 2000).

Less than one out of every 10 cases of breast cancer occurs in women born with a genetic predisposition for the disease. Recent research reveals that breast cancer arises from multiple factors, which may include genetic mutations, as well as exposures to external agents that affect genes or the production of estrogen. More than one exposure is usually required before breast cancer will develop and it is important to note that the same set of genetic and environmental circumstances will not produce cancer in every individual (Evans, 2006). It is also important to note that scientific research now shows that low-dose exposure to environmental chemicals, parts per billion or per trillion, can cause permanent damage to living
organisms (Evans, 2006).

As the origin of most breast cancers remains unexplained and because there is an apparent connection between breast cancer and naturally occurring estrogen, scientific attention has begun to turn to the possible role of xenoestrogens—chemicals foreign to the body that, directly or indirectly, act like estrogens (Steingraber, 2000). Like the naturally occurring estrogen estradiol, xenoestrogens such as organochlorines and other endocrine disrupters, slip from blood serum into the interior of cells, attach themselves to estrogen receptors, and elicit growth-promoting changes within target tissues. The ability of certain synthetic chemicals to mimic estrogen in this way has been known for some time, but until recently, many researchers assumed that any breast cancer risk created paled in comparison to the power of a woman’s own hormones. This assumption was based on several observations. First, few synthetic chemicals closely resemble the estrogen molecule and estrogen is the key that must fit into the receptor’s lock in order for the process to begin. Second, foreign estrogens are much less potent than naturally occurring estradiol. Third, xenoestrogens exist in much lower concentrations in the body than naturally occurring estrogens, which surge to impressive levels during the first half of a woman’s menstrual cycle (Steingraber, 2000).

Recent findings have cast severe doubt on the reasoning outlined above. It has been discovered that close physical resemblance is not required for successful estrogen impersonation. As a lock, the estrogen receptor accepts many keys, some widely divergent in shape and size. Organic compounds that look nothing like estradiol, from pesticides to plastics to detergents, all possess estrogenic properties and they are far more common than anyone had imagined (Steingraber, 2000). Xenoestrogens have significant biological impacts even at very low levels (Environment Canada, 2006) and they also act in combination with one another exerting estrogenic effects many time higher than one working alone (Steingraber, 2002). One of the greatest concerns about xenoestrogens is that unlike natural estrogens found in the body and in foods such as soy, they are not easily broken down, accumulating and being stored in the body’s fat cells, including breast fat (Women’s Network on Health, 1997).

Dr. Sherman argues that ‘it is... impossible to ignore the carnage of endocrine-disrupting chemicals, nuclear radiation and chemical carcinogens, alone and in combination, invading nearly every family with cancer’ (Sherman, 2000, p. 4). Environmental racism literature recognizes that in addition to a lack of universal health care, waste sites, incinerators and nuclear reactors are most frequently located near poor and marginalized communities, leaving specific groups of people at a much higher risk for developing life-threatening illnesses (White, 1998). In general, women with a low socioeconomic status have a ten to fifteen percent lower cancer survival rate regardless of race (Rosser, 2000). Those
who live below the poverty line often live in substandard housing, experience underemployment and a disproportionate exposure to industrial pollution. Evans argues that underserved and overexposed individuals are at a high risk for breast cancer (Evans, 2006, p. 45). Research that relies on biology alone and ignores socioeconomic factors will be unlikely to uncover the best way to remove this survival differential. An interdisciplinary approach that utilizes methods from social sciences in conjunction with those from biomedicine may be able to clearly explain the relative effects that increased levels of exposure to workplace and environmental carcinogens and a lack of access to high-quality health care have upon the higher incidence and lower survival rates experienced by African American women with breast cancer (Rosser, 2000).

Barriers to production of environmental knowledge are political and economic (Fosket, 2004). Potts (2004a) contends that the breast cancer and environment movement is differentiated from other breast cancer social movements because it focuses on the environmental rather than individual causes of disease and thus recognizes the importance of prevention. It focuses on the effects of pesticides, cosmetics, toxic waste, and radiation; as well as recognizing socio-economic status, the precautionary principle and lay knowledge of the disease (Potts, 2004a, p. 555).

ANALYSIS OF PUBLIC EDUCATION LITERATURE

An examination of the breast cancer public education literature was conducted in Halifax, Nova Scotia. The literature being distributed from health care organizations focuses on emphasizing awareness with breast cancer statistics, early detection, the doctor-patient relationship, methods of treatment (surgery, chemotherapy and radiation), and raising funds to research new treatment methods.

The Breast Cancer Screening Clinic’s pamphlet called ‘Facts on Breast Cancer’ is one of the most in-depth pieces available. It was published by the Canadian Cancer Society and revised, reviewed and reprinted in July 2000. The pamphlet begins by outlining basic facts on breast cancer in Canada; what the breasts are; what cancer is; and what breast cancer is. They state that studies of large numbers of women with the disease have identified a number of risk factors which increase the chances of developing breast cancer; they include age; previous breast cancer; strong family history of premenopausal breast cancer; a precancerous finding of ‘atypical epithelial hyperplasia’ on biopsy; age at first pregnancy; menstruation; and diet (Canadian Cancer Society, Facts on Breast Cancer, 2000, p. 5-6). Underneath these bulleted key points, they touch on subjects including the use of female sex hormones, birth control pills and hormone replacement therapy; as well as the effects of abortions and
pesticide exposure in relation to breast cancer (Canadian Cancer Society, *Facts on Breast Cancer*; 2000, p. 6-7). Unlike the numbered risk factors which are clearly outlined and explained, this gives the reader very little information on a variety of complex subjects. In a pamphlet entitled *Cancer Facts for Women*, the Canadian Cancer Society reminds us that ‘the old truism, prevention is better than cure, holds good for cancer.’ However, the next sentence is contradictory and encourages women to remember that the earlier a disease is discovered, the better the chances for a cure. This is a recurring theme in a pamphlet from the Halifax Breast Screening Clinic (published by the Canadian Cancer Society), as demonstrated by a section entitled ‘How Can You Protect Yourself From Breast Cancer?’ Their recommendations include mammography, physical examination, breast self-examination and a healthy diet.

The majority of the pamphlets and brochures promote mammography and breast self-examination. However, it is important to clarify that these are tools of detection and not prevention. Detecting a tumor, however early in its development, precludes prevention (Steingraber, 2000). If prevention is mentioned within the literature from the local health care organizations the trend is strictly toward diet and exercise. This emphasis on lifestyle factors places the responsibility on the individual, with success or failure dependent upon how one chooses to live one’s life. Brown et al. (2001) had similar findings in their examination of the print media coverage of environmental causation of breast cancer. They found little coverage of possible environmental causation, instead articles focused on individual responsibility for diet and other personal behaviours. Thus, these factors place personal responsibility on women for preventing breast cancer (Brown et al., 2001).

A sociological analysis demonstrates the long-term perspective of health and illness, examining disease within societies and different environments, focusing on how these affect our health. It moves from considering individuals to considering groups of individuals, communities and larger social units, and in doing so, shifts the responsibility for health from the individual to the social, economic, political, and environmental realms (Simpson, 2000).

Dr. Sandra Steingraber provides an interesting example of the medical establishment’s history of ‘blaming the victim.’ In 1832, at the height of a cholera epidemic, the New York City medical council announced that cholera’s victims were imprudent, intemperate or prone to injury by the consumption of improper medicines. Lists of cholera prevention tips were posted publicly with advice ranging from avoiding drafts and crude vegetables to abstaining from alcohol. Decades later, improvements in public sanitation finally brought cholera under control and the pathogen responsible for the disease was finally isolated by Robert Koch in 1883. The behavioural changes urged by the 1832 flyers were not entirely without merit, uncooked produce was an important
route of exposure, but it was fecal-borne bacteria, not a healthy-eating lifestyle, that was the cause (Steingraber, 2000).

The emphasis on lifestyle is evident in the public educational literature on breast cancer. Women are encouraged to exercise, lower the fat in their diets, be aware of their family history, perform breast self-examinations and receive regular mammograms. Public education on the topic of breast cancer emphasizes personal habits rather than the possibility of chemical carcinogens as the underlying cause of the disease. Breast cancer like cholera before it, has been framed as a problem of behaviour rather than as a problem of exposure to disease-causing agents (Steingraber, 2000).

The ‘Seven Steps to Health’ appear in five of the public education pamphlets (Breast-Self Examination: How to Check Your Breasts, 1997; Facts on Breast Cancer, 2000; Cancer Facts for Women, 2000; Breast Health: What You Can Do, 2002; and Breast Self-Examination: What You Can Do, 2002). All of this material was published by the Canadian Cancer Society and the ‘Seven Steps for Health’ are found in key focal points in the pamphlets, either on the back or the first page when it is opened. The ‘Seven Steps to Health’ states:

Research continues to show that some cancers can be prevented. Take these steps now to reduce your risk of developing [breast] cancer:

1. Be a non-smoker and avoid second-hand smoke.
2. Eat 5 to 10 servings of vegetables and fruit a day. Choose high fibre, lower fat foods. If you drink alcohol, limit your intake to 1 or 2 drinks a day.
3. Be physically active on a regular basis: this will also help you maintain a healthy body weight.
4. Protect yourself and your family from the sun. Reduce sun exposure between 11 a.m. and 4 p.m. Check your skin regularly and report any changes to your doctor.
5. Follow cancer screening guidelines. For women, discuss mammography, Pap tests and breast exams with a health professional. For men, discuss testicular exams and prostrate screening with a health professional. Both men and women should also discuss screening for colon and rectal cancers.
6. Visit your doctor or dentists if you notice a change in your normal state of health.
7. Follow health and safety instructions both at home and at work when using, storing and disposing of hazardous materials.

While there is some mention of toxins or contaminants, this still places the onus of responsibility on the individual and ignores environmental toxins and contaminants that one cannot control. Scientists and activists recognize that we are exposed to thousands of chemicals every day. Synergistic effects of exposures often occur over long periods of time and cause-and-effect relationships are difficult to establish. Thus, focusing on how chemicals alter breast cancer risk in the context of multiple contributing causes will be vital for future breast cancer research (Evans, 2006).
On the surface it is difficult to understand why an industrialized society does not focus on the prevention of exposures to carcinogens. A primary prevention approach could save thousands of lives, as well as reducing the need for costly diagnostic techniques, treatment and care, which cost $14.5 billion in 1998 in Canada (Murphy, 2002). In 2000-2001, the Canadian Cancer Society devoted $633,217 to research on contaminants other than tobacco, which accounts for only 1.4% of their research budget. The Canadian Institute of Health Research’s cancer research division spends just $3 million per year on environmental agents and the Canadian Breast Cancer Research Initiative spent less than $2 million on environmental and toxic-chemical research between 1993 and 2001, approximately 2.5% of their total funding (Murphy, 2002).

Clinical trials are extremely costly and time-consuming because cancer has such a long latency period (Murphy, 2002), but environmental research presents unique challenges of its own. It is difficult to determine the exact impact of one pollutant when we are surrounded by thousands of untested chemicals; we are exposed to these chemicals over a lifetime and pinpointing the time between exposure and developing cancer may be several decades; and assuming you could find a group of unexposed individuals, is it ethical to create a control group given the potential deadly effects of organochlorines and other toxic substances?

When it comes to hazards in the workplace and environment, the safe response, which has come to be accepted as scientifically responsible, is to say nothing and do nothing until we have clear proof that the hazard actually makes people sick. When we cannot produce definitive statistical proof of a toxin’s specific harmful effect, supported by a clear theory of the mechanism of that effect, it has become standard to say that we simply do not know whether the toxin is harmful or not. The apparent absence of harm becomes grounds for inaction (Davis, 2002). It seems reasonable that scientists want high-quality, evidence-based research, however it sometimes acts as a stalling mechanism for suspected, probable and even proven carcinogens. For example, thousands of North Americans died while industry and regulators debated over the carcinogenicity of benzene. We now know that benzene causes cancer (it is still a by-product expelled from tailpipes all over Canada), but many more might have died if the cancer establishment had not undertaken a precautionary campaign against tobacco in the 1960s. Tobacco’s main carcinogen, benzo(a)pyrene, was not determined until 1996 (Murphy, 2002).

The limitations of science and the time required to obtain absolute proof has led many North American physicians and scientists to prescribe the ‘precautionary principle’ as a guide for the prevention of illness. The precautionary principle states that ‘when there is reasonable suspicion of harm, lack of scientific certainty or consensus must not be used to postpone preventative action’ (Institute of Science, 2000). The precautionary principle puts the burden of proof onto the innovator or perpetrator, they must
demonstrate beyond reasonable doubt that a given product is safe, so society does not have to prove a product harmful, in what may be years of a potentially deadly struggle against government and industry (Institute of Science, 2000).

Many survivors and environmentalists are underwhelmed by the primary-prevention plans developed by cancer agencies because they leave little to no precautionary advocacy in the short term (Murphy; 2002). A new study, ‘Breast Cancer: An Environmental Disease: The Case for Primary Prevention’ argues that there are specific barriers against a primary prevention focus. These barriers include:

- Acceptance—Our society has been conditioned to think of breast cancer as a fact of life and as unpreventable;
- Confusion—Women are taught that early detection and treatment are the answers to breast cancer;
- Fear—The fear linked to all forms of cancer leads to resistance;
- Fixation—Our society is fixated on treatment and control of disease, rather than primary prevention;
- Ignorance—The narrow focus on lifestyle factors as the key to prevention;
- Invisibility—The lack of visibility in many carcinogenic chemicals (no odour or colour) creates an “out of sight, out of mind” mentality;
- Procrastination—Policy makers often call for more research when prevention is concerned;

The most damning criticism against Canadian cancer agencies surrounding primary prevention stems from their past reluctance to inform the public about known and suspected carcinogens and to lobby for their elimination or replacement (Murphy, 2002).

It is interesting to examine the evolution of the Canadian Cancer Society’s Seven Steps to Health over the years. The Breast Self-Examination pamphlet from the Breast Screening Clinic was published in 1997 and Step 7 states: ‘At home and at work, follow health and safety instructions when using hazardous materials.’ In 2000, Step 7 was slightly altered to say: ‘Follow health and safety instructions at home and at work when using, storing and disposing of hazardous materials.’ When asked why Step 7 offers advice on handling hazardous materials and does not urge people to avoid known carcinogens altogether, Julie White, the Canadian Cancer Society’s CEO, replied that ‘[i]t’s sort of wussy,’ and said that all materials should be up to date within the year (Murphy, 2002, p. 32). This interview was published in the March/April 2002 issue of This Magazine,
but two of the pamphlets that were revised and printed in July 2002 (Breast Health: What You Can Do and Breast Self-Examination: What You Can Do) still have Step 7 stating ‘Follow health and safety instructions both at home and at work when using, storing and disposing of hazardous materials,’ nearly identical to the advice from seven years prior. This research was completed in April 2003 and at this time the Canadian Cancer Society’s website had the same advice as the pamphlets (Canadian Cancer Society, 2003). After revisiting the Canadian Cancer Society’s website, Step 7 remains the same as of October 2005. However, they have added a separate link entitled ‘Environmental Contaminants’ (Canadian Cancer Society, 2005).

Critics point out that the cancer ‘establishment’ (mainstream cancer hospitals, National Cancer Institutes, cancer societies, etc.) has been reluctant to fund research on pollution prevention because of its close ties to the pharmaceutical industry. Ironically, there are companies who both pollute and benefit directly from the effects of pollution. General Electric and Dupont have the most toxic Superfund sites in the United States, which are uncontrolled or abandoned places where hazardous waste is located (US Environmental Protection, 2003) and they also sell more than $100 million in mammogram machinery and x-ray film every year (Epstein et al, 1998). AstraZeneca, a transnational biosciences corporation manufactures the cancer drug, Novaldex, with profits of $470 million per year, as well as the world’s best selling breast cancer drug, tamoxifen. AstraZeneca is the founding sponsor of Breast Cancer Awareness Month observed annually in North America during October and controls the promotional materials published for this campaign. Until recently, in addition to selling drugs to battle cancer, AstraZeneca had a $300 million per year business selling the carcinogenic herbicide acetochlor, as well as pesticides and chlorine- and petroleum-based products; all of which are harmful chemicals linked to breast cancer (Epstein et al., 1998; Potts, 2004b).

The article in This Magazine does say that the society has pulled old brochures on healthy eating that dismissed pesticide concerns, stating ‘[d]on’t let yourself get sidetracked by worries that are unproven or exist as remote possibilities’ (Murphy, 2002, p. 32); but most cancer agencies maintain that advocacy on environmental carcinogens is simply not in their mandate (Murphy, 2002). While cancer charities undoubtedly contribute to the community in positive ways, we must continue to examine such organizations critically, as many cancer activists and survivors already do. The fact that cancer charities continue to take sponsorships and corporate donations from notable Canadian polluters sends the public a conflicting message. The Canadian Cancer Society lists
donors such as Noranda, Inco and Falconbridge; all in the top-10 list of Canadian companies releasing known carcinogens (Murphy, 2002). The Canadian Cancer Society does not accept funds from companies linked to tobacco and have recently put their policy on pharmaceutical and biotech companies under review, but they have not devised a restriction on corporate polluters (Murphy, 2002).

CONCLUSIONS

The Importance of Prevention in Public Education

In ‘Controversies in Breast Cancer Prevention,’ Christy Simpson outlines three ideological positions which can be identified in discussions of health and illness. The ‘technology ideology’ is concerned with the belief in technological and pharmacological solutions to problems of health and illness and points to the success of new technologies in curing individuals with disease. In many cases the use of a new technology or drug will help a number of people, however these options will not be successful for many and may even do harm to some. The large degree of positive attention given to new medical breakthroughs within contemporary culture makes it difficult to question or resist this technological push and to pursue other options for dealing with problems of health and disease, such as reducing the number of carcinogens in our environment. The dominant belief in the value and worthiness of the biomedical model and in science helps to reinforce this ideology (Simpson, 2000). It is important to remember, however, that commercial interests may conflict with the best interests of women because breast cancer has become a source of economic gain (Zones, 2000). Simpson argues that the interests of ‘big business’ in promoting the technology ideology cannot be ignored because the profit to be made from new drugs and technologies is staggering (Simpson, 2000). For example, Taxol, the largest selling cancer drug in the world with estimated sales of $1.2 billion in 1998, has been used for years as a treatment for metastatic breast cancer. Although Taxol was discovered and developed by the American federal government at the taxpayers’ expense, it is now produced and sold by Bristol-Myers Squibb. Bristol-Myers Squibb charges a wholesale price of nearly five dollars per milligram, although it costs less than forty cents per milligram to manufacture. This makes the drug out of reach for many patients who may require several hundred milligrams per month over a period of many months (Zones, 2000).

The second ideological perspective is the ‘personal responsibility ideology’ which emphasizes the promotion of personal or individual responsibility for health. The assumption is that if this is done properly and with commitment, most diseases or health problems will be avoided. While it is true that certain provisions, such as a healthy diet and exercise,
can decrease one’s chances of getting a number of diseases, following these provisions should not be taken to mean that one will never become ill. The emphasis on lifestyle factors promotes a short-term perspective on health and illness, placing the responsibility on the individual, with success or failure dependent upon how one chooses to live one’s life. Individual women are and should be concerned about breast cancer and will want to do everything possible to avoid getting this disease, but the focus on personal responsibility for avoiding breast cancer should not obscure the risks created by living in a polluted environment and the need for social responsibility with respect to health and disease (Simpson, 2000).

The third dominant ideological discourse, the ‘social ideology,’ addresses health and illness from a broader perspective. A sociological analysis demonstrates the long-term perspective on health and disease, examining disease within societies and different environments, focusing on how these affect our health. The social ideology moves from considering individuals to considering groups of individuals, communities and larger social units, and in doing so, shifts responsibility for health from the individual to social, economic, political, and environmental realms. When discussing the importance of cancer prevention, Robert Proctor suggests that, ‘the value of the social perspective... is that it allows us to broaden our understanding of where one might intervene in the process of carcinogenesis’ (Simpson, 2000, p. 137). If the personal responsibility ideology is shaping how we, as individuals and as a society, think of carcinogenesis, we will be focused on an individual person, what predisposes them to get cancer and what each of these individuals can do to prevent their getting cancer. In contrast, if the social ideology is shaping how we think of carcinogenesis, the focus will expand from individuals to looking at groups of individuals in relation to the environments in which they live and work. New options for the prevention cancer, and specifically breast cancer, will present themselves. These options may include creating safer, healthier workplaces and enforcing stricter controls on the disposal of hazardous wastes (Simpson, 2000).

The public education literature being distributed from the Halifax Breast Cancer Screening Clinic, the Canadian Breast Cancer Foundation, the Canadian Cancer Society, and Cancer Care Nova Scotia is all important, clear and easy to understand, making them accessible to a wide audience. The pamphlets and brochures focus on emphasizing awareness with breast cancer statistics, early detection, the doctor-patient relationship, methods of treatment (surgery, chemotherapy and radiation), and raising funds to research new treatment methods. This literature is likely influenced by the biomedical model which focuses on anatomy and physiology and causes of disease at the cellular, hormonal, and genetic levels rather than behavioural, social and environmental
contributions to disease (Rosser, 2000). The social ideology, however, recognizes the accumulated knowledge linking toxic chemicals found in the environment with the increasing breast cancer rates and means we must focus our energies and efforts on prevention (Sherman, 2000).

The biomedical model of disease currently provides the best options for curing patients with breast cancer, but as scientists announce new fields of research in breast cancer studies, behavioural, social and environmental factors must become a part of the climate for this research. Continuing to focus solely on the cellular, hormonal and genetic causes represent a reductionist approach to the problem (Rosser, 2000). The old adage “an ounce of prevention is worth a pound of cure” is more than applicable to this situation, therefore it is of the utmost importance that information on prevention is available to women; recognizing the role played by social, economic and environmental factors.
REFERENCES


