Breast Cancer in Germany: A Health Education Perspective

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Abstract

Cancer is a global problem. In Germany, the burden of cancer has been established through the creation and maintenance of national cancer registries. Breast cancer in Germany has been determined to be a primary contributor of morbidity and mortality. One of the factors that can assist in cancer control efforts is early detection of breast cancer. Early detection practices in turn can be increased through health education. Germany has an extraordinary system of health care including a strong health education infrastructure. Through health education, breast cancer control can be achieved. Cancer control efforts in Germany are underway.

Introduction

Breast cancer continues to be a universal public health problem, and a significant cause of morbidity and mortality worldwide (Horton, 1998). Furthermore, breast cancer is a serious disease and cause of premature deaths among women (Phillips, Glendon & Knight, 1999). Breast cancer can have serious consequences, such as, physical and emotional effects (Horton, 1998).

Breast cancer research and treatment has become a truly international endeavor and demands further investigation (Davies, Hoel, Fox & Lopez, 1990; WHO Programme on Cancer Control, 2000). The American Cancer Society, National Cancer Institute, World Health Organization, and the European Union have joined forces to increase the number and accuracy of cancer registries in Europe. This effort will assist in the understanding of all types of cancers, their risk factors, and distribution in different countries. Once the cancer distribution is determined, cancer control strategies can be further developed.

Breast cancer is the most commonly diagnosed malignancy in North American women, and the incidence of breast cancer has been rising for some years (Phillips et al., 1999). The United States is one of the leading countries in the provision of early detection or screening mechanisms. The American Cancer Society (2000) has attributed higher cure rates and decreased mortality rates from breast cancer screening and early detection efforts.

Breast cancer screening enables the cancer to be detected early enough to be treated. Nonetheless, as a public health goal, appropriate recommendations for women at risk of developing breast cancer are still needed (Goldhirsch, Glick, Gelber & Senn, 1998). Educating the public about the risk of breast cancer promises to contribute to the prevention or early detection of the disease (Phillips et al., 1999). As health educators we can accomplish this.

In Germany, the incidence of breast cancer and mortality rates demonstrate a need for increased awareness. Health education and health promotion efforts can be achieved through the well-established German health care system and its health education and promotion infrastructure. Through these mechanisms, the increased awareness of breast cancer and early detection practices can be achieved.

Overview of Breast Cancer Risk Factors

Among women, breast cancer is an important cause of illness and a leading cause of death and potential years of life lost (Harvey, Miller, Baines & Corey, 1997). This is evidenced by the fact that more than 99% of all breast cancer diagnoses occur among women (ACS, 2000). Risk factors associated with breast cancer are: gender, age, personal history of breast cancer, family history of breast cancer, early age at menarche (first menstrual period), late age at menopause, not having children and advanced age at first birth (Gail, 2000). However, it should be noted that, of the cases of breast cancer diagnosed every year, 70% of the women have none of the risk factors (Breast Cancer Information System, 1996). Nonetheless, risk factors should neither be ignored or be a source of alarm. Risk factors should be communicated so persons at risk can be screened properly increasing the chances of early detection and treatment (Breast Cancer Information, System, 1996; Harvey, et al., 1997).

Why Are International Cancer Registries Important?

Cancer occurs throughout the world, but the risk of cancer varies from region to region, suggesting geographic, environmental and cultural implications (NCI, 1997). Since, not all countries maintain population-based tumor registries, death rates are used to illustrate differences in cancer risk from one country to another (NCI, 1997). Accurate cancer registries are necessary to determine a population's risk of cancer. Thus, cancer registries enable the development of effective services and programs according to the need.

The development of national policies for cancer depends upon assessing the extent to which the population is affected by cancer, determining the factors responsible for the disease, and identifying means of dealing with the problem (WHO Programme on Cancer Control, 1998). The overall health care

system of a nation can be used for mass education about the nature of cancer, its causes, and manifestations, and about what preventive action can be taken by the individual (WHO Programme on Cancer Control, 1998).

International efforts to enhance cancer registries are under development in Europe. For example, the *European Network of Cancer Registries*, *EUROCARE*, *International Association of Cancer Registries*, and *WHO mortality database* have a current program named *Europe Against Cancer*. Other European cancer agencies and registries include: *International Agency for Research on Cancer* and *Cancer Mondial* among others.

Cancer Registries in Germany

It is estimated that each year more than 340,000 persons in Germany develop cancer and more than 210,000 die from this disease (German Cancer Research Center, 2000). To understand cancer trends, uniform data reporting for the entire Republic of Germany was needed to understand cancer trends in its entirety. Cancer registration began in the eastern part of Germany in 1961 (German Cancer Research Center, 2000). However, data generated in West Germany was limited to the Hamburg and Saarland cancer registries. Since these two geographic areas represent just 5% of the total West Germany population, epidemiologists were unable to obtain accurate numbers (German Cancer Research Center, 2000). To address this issue, in early 1995, new legislation was enacted for the purpose of instituting complete, nationwide cancer registration for all Germany (German Cancer Research Center, 2000).

Another factor limiting the availability of cancer data in Germany was attributed to confidentiality issues. Since the eastern part of Germany had been collecting cancer information on patients for the past 40 years a large amount of data became available in the early 1990s (Shulman, 1993). This unveiling included, over 2.2 million files containing detailed medical data of about 95% of all cancer cases in East Germany for over the past 40 years (Shulman, 1993). However, this data contained all of patients' information including their name. Epidemiologists have been allowed, through a court ruling, to use the data separate from patients' personal information. It has been this breakthrough in information that has greatly increased the knowledge of cancer among Germans (Shulman, 1993).

Breast Cancer in Germany

In 1998, a total of 212,700 Germans died of cancer out of a total population of 42,062,600 (Federal Statistical Office, 1999). It is estimated that unless dramatic breakthroughs in cancer prevention are achieved in cancer prevention in the next few years, cancer will become the leading cause of death in Germany within 15 to 20 years (German Cancer Research Center, 2000). Furthermore, in 1997, the incidence of breast cancer in Germany women was 46,920 new cases with mortality of 18,667 (43.7%) deaths (Black, 1997). These rates suggest that screening efforts in Germany need to be increased.

For many years, breast cancer was the most common cause of cancer death among females in the United States (U.S.). Today, lung cancer mortality exceeds breast cancer mortality in the U.S. (ACS, 2000; NCI, 2000; Thibodeau & MacRae, 1997). In European countries, including Germany, breast cancer death rates are higher than lung cancer among women (NCI, 2000). The decline of breast cancer deaths in the U.S. is attributed to the increase of early detection practices among the population, which in turn is attributed to health promotion and educational efforts nationwide. Is there perhaps a need to increase breast cancer early detection practices in Germany?

In March of 2000, the German *Society of Senology* published a consensus statement on screening for breast cancer, aimed at starting an interdisciplinary early breast cancer detection program (Roggla, 2000). The proposed program supports breast cancer early detection through: 1) breast self-examination for all women from age 30; 2) palpation and inspection performed regularly by a physician for all women starting at age 40; and, 3) mammography for all women age 50-70 years (Roggla, 2000). This new recommendation, along with treatment advances and an established health education and promotion infrastructure could perhaps impact breast cancer incidence and mortality in Germany. The breast cancer screening program proposed in Germany earlier this year anticipates to prevent between 3,000 to 4,000 deaths due to breast cancer each year (Roggla, 2000). One of the strengths of the upcoming breast cancer control efforts in Germany is the availability of health insurance by all Germans. The German health insurance system covers breast cancer screening.

Detecting Breast Cancer Early

In the United States, from 1991 to 1995 breast cancer mortality declined 6.3% among women of all ages. The largest decline (9.3%) was seen in women under the age of 65 followed by a reduction of 2.8% in women over 65 years of age (NCI, 1997). Part of the recent increase in breast cancer survival may be due to early detection (NCI, 2000). The American Cancer Society (2000) says that the best strategy for successfully beating breast cancer is to follow guidelines for early detection. The three approaches to breast health are advocated in the U.S. through the American Cancer Society's *Triple Touch Program* (ACS, 1997). The three main forms of screening recommended in the U.S. are: 1) breast self-exam (BSE), starting between 18-20 years of age; 2) clinical breast exam (CBE), starting between 18-20 years of age ; and 3) mammography, starting at age 40 (Lewis, 1999). Screening mammograms are often recommended because they can detect small tumors

and breast abnormalities up to two years before they can be felt (and are most treatable) (Lewis, 1999). A complete breast health plan should still include the BSE and CBE as well.

It is important to conduct monthly BSE and have an annual CBE by a health care professional. Although small tumors are detected earlier through a mammogram, between 10% and 15% of breast cancers that can be palpated do not show up on a mammogram, because of variations in breast mass density (ACS, 1997). It has been reported in the U.S. that approximately 90% of breast cancers are found by the woman, accidentally or through BSE (Benedict, Williams & Hoomani, 1996). BSE along with CBE are still considered an important adjunct to screening mammography (ACS, 1997; Aitken & McDermott, 1997; Cooper, Yuan, Bowlin, Dennis, Kelly Chen & Rimm, 1998; Hislop, 1997). Consequently, women should be aware of the importance of self-examination, although other methods of early detection exist.

Health Education and Breast Cancer

Breast cancer is a disease that causes great fear, from performing screening tests to unexpected results. This fear must be addressed through education aimed at decreasing the burden of the disease (Dickersin, 1999). Breast cancer survival can be a story of a journey from fear, pain, and darkness to light, hope, and joy (Thibodeau & MacRae, 1997). Health educators should be aware of screening services available and be a resource for the public. Similarly, updates in treatment options, therapies, screening guidelines and lifestyle changes should be observed regularly by health educators. In this manner, current information can be communicated to the public. As health educators we can help alleviate some of the anxiety associated with screening tests.

Early detection of breast cancer increases the chances of survival through timely treatment (Preboth, 2000). Since early detection is attributed to the decrease of breast cancer mortality in the U.S. screening practices have been highly promoted. Before a country pursues increase early detection, cost effectiveness must be determined. For example, in the United States, mammography is considered cost effective for women 50-69 years of age, but the value of continuing screening mammography after age 69 is unknown (Kerlikowske, 1999). For this reason, some screening centers will not screen women past a certain age. Public awareness of early detection can be achieved through health education efforts. Since Germany has a strong health education and promotion infrastructure, it is probable that tier efforts aimed at early detection and screening for breast cancer will be successful.

Proposing Breast Cancer Control Efforts through Health Education in Germany

Health education in Germany is an ongoing, interdisciplinary responsibility at all levels. At the federal level, health education efforts are undertaken by the Bundeszentrale für gesundheitliche Aufklärung (BZgA) or Federal Center for Health Education (FCHE) as a specialist authority in the sphere of responsibility of the Federal Ministry of Health (BzgA (a), 1998). In Germany, national health education campaigns focus on topics such as: tobacco control, control of alcohol consumption, prevention of illegal drug use, family planning, sex education and AIDS prevention.

Health education in Germany is conducted mostly through mass campaign efforts such as: billboards, television ads and printed materials (BZgA (b), 1998). Health education is also multicultural, aimed at not only Germans, but other people from different cultural backgrounds who reside in Germany (BZgA (a), 1999). The health education infrastructure in Germany includes needs assessment, quality assurance and evaluation endeavors (BZgA (b), 1999).

The global strategy for cancer control from the World Health Organization's (WHO) Programme on Cancer Control (1998) emphasizes that preventive strategies could considerably reduce the global disease burden at low cost. Furthermore, the WHO also acknowledges that optimal organization of prevention and detection programs as well as treatment services are universal problems in all economic environments. From a public health point of view, the impact of any treatment or service depends not only on efficacy but also on availability, affordability, and acceptability of the intervention (Eisinger, 2000). In Germany, these conditions already have been established. Through this established infrastructure, along with universal insurance coverage for breast cancer and other screening services, breast cancer rates in Germany can be lowered.

Conclusion

Breast cancer screening remains an important component of women's health. Health educators must provide information to women to increase awareness of their bodies and learn about their screening options. Germany has an extraordinary health care system, including a health education and promotion infrastructure. Breast cancer control efforts can be achieved through this already existing framework of services in Germany. These efforts are well underway. Germany is committed to cancer control efforts through the establishment of comprehensive cancer registries, health education efforts and availability of breast cancer screening services along with other research efforts like environmental studies and development of a breast cancer therapeutic vaccine (Immunotherapy Weekly Editors, 1999; Vaccine Weekly editors, 1999).

References

Aitken, S. & McDermott, R. (1997). Adjuncts to screening mammography. *Proceedings of the National Workshop on Organized breast Cancer Screening Programs, Ottawa*. 4-8.

American Cancer Society (1997). *The Breast Health Guide*. American Cancer Society, Florida Division: Tampa, FL.

American Cancer Society (2000). *Cancer Facts & Figures 2000*. American Cancer Society, Atlanta, GA.

Benedict, S., Williams, R. D. & Hoomani J. (1996). Method of discovery of breast cancer. *Cancer Practice, 4* (3), 147-155.

Black, R. J. (1997). Cancer in the European Union. *European Journal of Cancer, 33*, (7), 1075-1107.

Breast Cancer Information System (1996). *Breast Cancer Risk Factors*. Found on-line: http://trfn.clpgh.org/bcis/GeneralInfo/risk.html.

BzgA (a), (1998). *BZgA Tasks and Objectives*. BZgA Order No. 960 000 70, Köln, Germany.

BzgA (b), (1998). *Aims, Tasks and Organization*. BZgA 2-23-tp, Köln, Germany.

BZgA (a), (1999). *Intercultural Sex Education and Family Planning*. BZgA Booklet I/99, Köln, Germany.

BZgA (b), (1999). *Evaluation as a Quality assurance Tool in Health Promotion*. BzgA ISBN 3-933191-27-0, Köln, Germany.

Cooper, G. S., Yuan, Z., Bowlin, S. J., Dennis, L.K., Kelly, R., Chen, H. & Rimm, A. A. (1998). An ecological study of the effectiveness of mammography in reducing breast cancer mortality. *American Journal of Public Health, 88*, (2) 281-284.

Davis, D. L., Hoel, D., Fox, J. & Lopez, A. 91990). International trends in cancer mortality in France, West Germany, Italy, Japan, England and Wales, and the USA. *Lancet, 336*, (8713), 474-482.

Dickersin, K. (1999). Breast screening in women 40-49 years: What next? *Lancet, 353*, (9168), 1896-1899.

Eisinger, F. (2000). Acceptability of prophylactic mastectomy in cancer-prone women. *JAMA, 283*, (2), 202.

Federal Statistical Office (1999). *Causes of Death in 1998*. Found on-line: http://www.statistik-bund.de/presse/english/pm/p9394092.htm .

Gail, M.H. (2000). Gail model and breast cancer. *Lancet, 355*, (9208), 1017.

German Cancer Research Center (2000). *Atlas of Cancer Mortality in the Federal Republic of Germany*. Found on-line: http://www.dkfz-heidelberg.de/epi/Home_d/Programm/AG/Praevent/Krebshom/main/

Harvey, B.J., Miller, A. B., Baines, C. J. & Corey, P. N. (1997). Effect of breast self-examination techniques on the risk of death from breast cancer. *Canadian Medical Association Journal, 157*, (9), 1205-1212.

Hislop, T. G. (1997). Is breast self-examination still necessary? *Canadian Medical Association Journal, 157* (99), 1225-1226.

Horton, J.(1998). Breast cancer care: Developments in 1998. *Cancer Control, 5*, (4), 338-345.Immunotherapy Weekly Editors (1999). CEL-SCI starts cancer vaccine collaboration in Germany. *Immunotherapy Weekly, December 13, 1999*.

Kerlikowske, K. (1999). Continuing screening mammography in women aged 70 to 79 years: Impact on life expectancy and cost-effectiveness. *JAMA, 282*, (22), 2156-2169.

Lewis, C. (1999). Breast cancer. *FDA Consumer, 33*, (4), 7.

National Cancer Institute-NCI. (1997). *Cancer Death Rate Declined in the 1990s for the First Time Ever*. Found on-line: http://cancernet.nci.nih.gov/cgi-bin

National Cancer Institute-NCI (2000). *Cancer Survival Rates*. Found on-line: http://rex.nci.nih.gov/NCI_Pub_Interface/raterisk/rates28.html.

Phillips, K.A., Glendon, G. & Knight, J.A. (1999). Putting the risk of breast cancer in perspective. *New England Journal of Medicine, 340*, (2), 341-344.

Preboth, M. (2000). Use of mammograms and papanicolaou tests. *American Family Physician, 61*, (2), 571.

Roggla, G. (2000). Breast-cancer screening proposed for Germany. *Lancet, 355*, (9207), 909.

Shulman, S. (1993). A treasure trove of data: Cancer records from the former East German Republic. *Technology Review, 96*, (2), 14-16.

Thibodeau, J. & MacRae, J. (1997). Breast cancer survival: A phenomenological inquiry. *Advances in Nursing Science, 19*, (4), 65-75.

WHO Programme on Cancer Control (1998). *National Cancer Programme*. Found on-line: http://who-pcc.iarc.fr/NCP/NCP_Definion.html.

WHO Programme on Cancer Control (2000). *Developing a global strategy for cancer*. Found on-line: http://who-pcc.iarc.fr/Strategy/strategy.html .