

Role of the nurse practitioner in breast and cervical cancer prevention

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Breast and cervical cancer claim the lives of more women in the U.S. each year than all other forms of cancer of the female reproductive tract combined. Early detection and aggressive treatment of these malignancies could save many women's lives, yet U.S. women often do not follow recommended screening guidelines. Nurse practitioners (NP) have important roles in primary and secondary prevention of breast and cervical cancer because their holistic perspective and advanced practice skills enable them to intervene for clients at all levels of health care. NPs are capable of not only assessing the health of their female clients, but also the system that serves client needs. They use their advanced knowledge and practice skills to educate women about cancer risk factors, and to initiate screening programs aimed at early detection and intervention. NPs monitor screening and treatment services extended to women clients, and promote high quality care by educating both professional and non-professional care givers to health care needs. Advocacy in behalf of women's health issues impacting breast

and cervical cancer screening and care is an additional facet of the NP's role.

Key Words: Breast—Cervical cancer—Nurse practitioner—Breast cancer.

Breast and cervical cancer claim thousands of women's lives in the U.S. each year. Prognosis for recovery is directly related to the stage of the disease at the time of discovery; therefore, early detection through vigorous screening is essential. Nurse practitioners (NP) complete a comprehensive health assessment that includes family history and personal risk factors for breast and cervical cancer, as well as a thorough physical examination. Health teaching focused on cause and prevention of cervical and breast cancer is an important role for NPs.

BREAST CANCER

Breast cancer is the most common type of cancer in women. One in eight women in the U.S. has the lifetime probability of contracting the disease (1). This statistic has risen significantly in the past several decades, from 1 in 14 in 1972 and 1 in 10 in 1990 (2). In 1992, ~181,000 new cases of cancer of the breast were diagnosed in the U.S. Of these, 180,000

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cases occurred in women. Approximately 46,300 people died from breast cancer in 1993: 46,000 women and 300 men (3). Breast cancer is second only to lung cancer as the leading cause of death from cancer in women (4), and it accounts for almost twice as many annual deaths as all other forms of cancer of the female reproductive tract combined (5).

The prognosis for recovery from breast cancer is directly related to the stage of the disease at which it is diagnosed. The 5- and 10-year survival rates for women with malignant breast tumors are directly related to tumor size and node status at the time of detection (4). It is not surprising, therefore, that emphasis has been placed on early screening and detection in the hope that aggressive treatment could change the course of the disease. As early as 1973, a study by Shapiro et al. (6) indicated that early detection of breast cancer through physical examination and mammography could reduce mortality from the disease by >30%.

Guidelines for breast cancer screening were issued in December 1992 (Table 1) (7) and have been endorsed again by numerous medical and advocacy groups in 1994 (8). Despite the fact that early detection and treatment of breast cancer could save women's lives, it was found that U.S. women do not follow the recommended guidelines for breast self-examination (BSE), clinical examination, and mammography (9). Impediments that might account for women's lack of adherence to screening guidelines include lack of access to health care, lack of insurance or inadequate insurance to pay costs of screenings, personal and cultural barriers, and role overload. Additional explanations for not practicing optimal breast health care behaviors include lack of knowledge of the risk factors associated with breast cancer (Table 2), and recommended screening guidelines and methods (5). Although 75–90% of breast tumors are detected by women themselves (5), it is estimated that only about one-fourth of women practice monthly BSE (9). A

TABLE 1. *Recommended guidelines for breast cancer screening*

Event	Frequency
Breast self-examination (BSE)	Monthly
Clinical breast examination	Annually
Mammography	
First (baseline) mammogram	By age 40
Screening mammography	Age 40–49: 1–2-year intervals Age 50 and over: annually

From the National Cancer Institute (7).

TABLE 2. *Risk factors associated with breast cancer*

Accepted risk factor	Questionable risk factors
Age	Diet high in animal fats
Family history of breast cancer	Diet low in fiber
Personal history of benign breast disease	Alcohol consumption
Nulliparity	Long-term estrogen replacement therapy (conflicting reports)
Late age at first live birth (30 years of age or over)	
Early age at menarche	
Late age at menopause	
Upper socioeconomic status	
U.S./Western countries	
High-dose radiation exposure	
Obesity	

From Seidman et al. (10) and Spiegel (3).

study of women who reported that they perform BSE found that 92% felt competent in their proficiency. Only half of this group, however, actually performed BSE according to American Cancer Society guidelines (11).

Clinical breast examination of female patients is also neglected. A study by Keller et al. (12) revealed that only half of the women between the ages of 25 and 65 have annual clinical breast examinations. Rimer (13) reported that mammography, a safe and effective method of detecting most breast lumps before they can be detected by palpation, was reported to have been utilized by only 38% of women aged 40 and over. Of the women in Rimer's study, only 15% reported that they had had a mammogram the previous year.

CANCER OF THE CERVIX

Mortality from cancer of the cervix in U.S. women is not nearly as high as mortality from cancer of the breast. However, ~7,000 women in this country will die from cervical cancer this year. Such comparatively conservative mortality statistics were not always the case. At one time, cervical cancer was the leading cause of cancer deaths in women. Mortality from cervical cancer has declined by 70% in the last few decades (14).

The decline in deaths resulting from invasive cancers of the cervix can be attributed to a safe, simple, inexpensive, relatively noninvasive diagnostic test—the Papanicolaou (Pap) smear. The ability to detect cervical cancer through smears of the cervix and vagina was first described by Babes in 1928 (15).

The Pap smear did not become a common diagnostic or screening tool until Papanicolaou popularized it in the 1940s and 1950s. Since the 1950s, the Pap smear has become one of the most common laboratory tests ordered (15).

Cervical, endometrial, and vaginal cancers are potentially detectable when screened according to a systematic schedule. It is estimated that deaths from cancer of the cervix, endometrium, and vagina would decline by two-thirds if women followed the recommended guidelines for Pap smears (Table 3). Although risk factors for the development of cervical cancer have been identified (Table 4), many women avoid having routine pelvic examinations and Pap smears. Recommendations for frequency of Pap smears are based on the understanding that progression from premalignant cervical changes to invasive disease is typically slow. The progression often takes up to 10 years (15). Recent findings, however, point to the fact that human papilloma virus (HPV), especially types 16 and 18, are strongly correlated with cervical cancer (14). HPV type 18 is associated with progression to invasive cancer in a matter of months rather than years (15). The strong correlation of HPV and rapidly invasive cervical cancer has serious implications for teenagers and young women who are sexually active and whose lifestyles often put them at risk for contracting the virus.

Lack of adherence to recommended screening guidelines is a major problem among postmenopausal women, who are commonly faced with tremendous barriers to personal health care. High levels of poverty, lack of transportation, inadequate understanding of the need for preventative health maintenance, and health problems causing limited mobility all contribute to inaccessibility of health care for older women (16). This group of women no longer needs birth control intervention to spur them into seeking care, and, as a result, they may not see a gynecologist or health care provider on a regular basis, if at all. According to Taylor (17), 8% of women aged 45 or older and 15% of women aged 65 or older have never had a Pap smear. Postmenopausal women are not the only group that does not follow recommended cervical screening guidelines. It is known that 27% of women aged 18 and over have not had a Pap smear in the past 3 years (17).

IMPLICATIONS FOR NURSING

In order to promote early detection of breast and cervical cancer and prevent unnecessary mortality

TABLE 3. *Recommended guidelines for cervical cancer screening*

Event	Frequency
Pap smear	Age 18, or women who are or have been sexually active: three consecutive annual Pap smears After three consecutive normal Pap smears: at the discretion of health care provider

From the U.S. Department of Health and Human Services (14).

from the disease, vigorous screening, education, and treatment programs must be undertaken. Nurses who are involved in advanced practice roles with female clients have unique opportunities to implement primary and secondary prevention programs for their clients.

ASSESSMENT

Nurses practice from a perspective of holism and must assess each client within a holistic framework. It is important that the NP involved in women's health care perform a complete health assessment for every woman seen. Nursing assessment should include family history, thorough physical assessment, including gynecologic and sexual history, and careful documentation of personal risk factors. Being female is the single greatest element of risk for developing breast cancer.

A preexisting family history of breast cancer is also a principal risk factor for developing the disease. A woman who has one first degree relative (mother or sister) with breast cancer has an approximate twofold overall increased risk of developing breast cancer herself. If both a mother and sister have had breast cancer, a woman has a 2.5 relative risk of contracting the disease (18). The female relatives of women with breast or ovarian cancer have an increased risk of developing either malignancy. This would imply that women who have relatives with either breast or ovarian malignancies must be carefully followed and screened for both types of malignancies. It is thought that in some families there is a genetic predisposition for breast cancer. The genetic predisposition is carried on an autosomal dominant gene, which can be conferred by either the maternal or paternal lines of inheritance (19). There is no evidence, at present, of a familial tendency for cervical cancer (20).

It is important that women who are at higher risk of developing breast or ovarian cancer be given

the information they need to make informed decisions about their health. NPs can teach women about risk factors and risk reduction/prevention so that clients respect the need for screening and preventive services, but do not become unnecessarily fearful.

While performing physical assessment, the NP must listen carefully to a client who verbalizes health complaints and symptoms. Age, reproductive history, and history of preexisting health problems should be carefully documented and analyzed. A woman who has a prior history of breast cancer has a significantly increased risk of developing a second cancer in the same or opposite breast (21). Approximately 35% of women who have had cervical cancer will have recurrent or persistent disease (22). Although many of these women will continue to seek follow-up care from physicians who treat gynecologic oncology, changes in life circumstances such as relocation or altered economic status might cause them to seek primary health care services from an NP. Information about prior cancer history will alert the NP to the need for careful evaluation, follow-up, and referral for additional treatment as indicated. A history of cancer should cause the NP to be aware of psychological ramifications of the prior illness that might still exist for the client. These include fear of cancer recurrence, additional treatment, pain, alterations in lifestyle, economic issues, and the ever-present specter of death.

Personal risk factors are documented as a part of every woman's health assessment. Older women are at greater risk than younger women for developing both breast and cervical cancer. This older age group is less likely to be screened for either cancer. Older women who are of low socioeconomic status and are uninsured have especially low breast and cervical cancer screening rates (23). NPs who are in contact with older women must be vigorous in promoting good breast and cervical cancer screening practices. Underinsured women often do not have adequate personal financial resources to undergo regular mammograms, Pap smears, or clinical breast examinations. Such women should be made aware of low cost or no cost screening and health care opportunities that are available. NPs can identify low cost screening programs frequently underwritten by community agencies. As health problems are identified, the NP can refer the client to appropriate resources for intervention and follow-up care.

An important part of determining a woman's personal risk for developing cervical cancer is a thorough sexual history (Table 4). Although the cause

of cervical cancer is not known, it is reasonable to assume that the disease is highly associated with multiple insults to the cervix (24). All activities that cause trauma to the cervix, especially sexually transmitted diseases (STD), should be assessed. Women are at risk of developing STD from a single act of intercourse (25). Women who have not been sexually active or who have had only one sexual partner who has also been monogamous are at low risk for developing STDs, whereas women who have been sexually active with several partners are at high risk for developing STD. At least 30 organisms have been identified that play a role in STD, including HIV, gonorrhea, syphilis, chlamydia, genital herpes, genital warts, monilia, trichomonas, and sexually transmitted hepatitis B (26).

Although more STDs in women occur in the under 25 age group, older women have also been diagnosed with the diseases. More than 179,000 cases of AIDS in women have been reported to the Centers for Disease Control (CDC). Of the cases reported for women, 11% were in women 50 years and older at the time of diagnosis (25). AIDS-infected women appear to have an increased prevalence of cervical intraepithelial neoplasms associated with human papillomavirus (HPV) (27). AIDS and herpes simplex virus (HSV) are also strongly linked. According to Corey (qtd. in Hansfield et al., p. 4 [27]), "Every population that has had an HIV epidemic had a preexisting HSV-2 epidemic." It is estimated that 20% of women in the general population and 30% of the obstetrical population in the U.S. have HSV-2 antibodies. Because it is believed that 75% or more of women with HSV-2 do not recognize that they have the infection, lack of treatment increases the possibility of transmitting the disease to their partner or, during pregnancy, to an unborn child (27).

TEACHING

An integral facet of helping women to enjoy optimal health is giving them the information they need to protect and care for themselves. Women often have limited knowledge about their bodies and bodily functions. While performing a physical examination, the NP can inform women of the components of the normal breast and reproductive tract. Guiding a woman's fingers over her breasts while informing her of underlying breast structures and normal changes that occur provides an excellent opportunity for teaching. A mirror can be used to facilitate teaching women about their genital area.

TABLE 4. Risk factors associated with cervical cancer

First sexual intercourse at under 18 years of age
Multiple sex partners
History of sexual intercourse with a man who has had multiple partners or a man who has sexually transmitted disease (STD)
History of sexual intercourse with a man whose past partner has had an abnormal Pap smear or cervical cancer
History of human papillomavirus (HPV)
Immunocompromise
History of cancer of the cervix
History of radiation to the pelvis
Cigarette smoking

From Lucci and Berman (15) and the U.S. Department of Health and Human Services (14).

Women can be told about normal vaginal secretions and normal secretory changes during the menstrual cycle. Abnormal changes accompanied by symptoms can signal an infection requiring further evaluation and/or treatment (28).

NPs have the opportunity to teach body function in language women typically use and can understand. Lauver (23) reported that lay literature is often written at a 10th or 11th grade reading level. Reading at this level is beyond the ability of many women and could create a barrier for learning. NPs must be sure that informational pamphlets given to clients are written at the client's level of comprehension and are illustrated, if possible, to enhance clients' understanding. Educational pamphlets should be clear, concise, and address only a single topic in order to avoid confusion. Nurses who write health education articles might consider writing for women's magazines that have wide circulation and appeal to lay readers.

Women should be informed of the risk factors associated with breast and cervical cancer. Although many risk factors cannot be controlled, women should be helped to understand that certain behaviors can reduce health-related risks and enable them to promote good health for themselves. Practicing safer sex, smoking cessation, eating a low-fat/high-fiber diet, and exercising regularly should be among the risk reducing behaviors addressed by NPs. Women should be informed that using condoms during sexual intercourse, limiting the number of sex partners, participating in health screenings, and having regular check-ups will also reduce health risks. The appropriate use of hormone replacement therapy (HRT) in postmenopausal years should be advocated and implemented by NPs who care for older women. Dupont and Page (29) report that a low dose of estrogen (0.625 mg/day) does not increase a woman's risk of developing breast cancer. By adding progesterone to

estrogen therapy, the risk of endometrial cancer in postmenopausal women is virtually eliminated (30). Not every woman, however, is an appropriate candidate for HRT. Women who have undiagnosed genital bleeding, or known or suspected estrogen-dependent cancers should not be given HRT (31). A review of research to date does not indicate that a family history of breast or cervical cancer, in the absence of diagnosed or suspected disease, is a reason to withhold HRT in postmenopausal women (32).

NPs can make a vital contribution to the health of women by encouraging them to have mammograms and clinical breast examinations. NPs should identify community resources that offer low cost or no cost breast and cervical cancer prevention and screening services to economically disadvantaged women. Such services are often available through state health departments and other local or regional agencies. Women should also be encouraged to perform BSE according to recommended guidelines. NPs can emphasize that the purpose of BSE is to help a woman know how her breasts normally look and feel so that she can discern and report changes from the normal. Women should be told that knowledge of the correct way to perform BSE is not intended to turn them into diagnosticians but will enable them to be caretakers of their own health. Some women may be reluctant to touch themselves or feel uncomfortable being examined by health care providers. NPs can help clients overcome their reticence by exploring attitudes in a nonjudgmental, unhurried, sensitive way in a private, comfortable setting.

Women need to be informed of the importance of Pap tests. Many women who do not utilize the services of gynecologists do not receive Pap smears and mammograms on a regular basis (13). Lauver (23) reported that a chief barrier to women receiving breast and cervical cancer screening tests is the failure of practitioners to perform or refer patients for the tests. Murata and Li (33), in their study of 121 subjects, found that physicians who perform Pap tests also refer women for mammograms significantly more often than physicians who do not perform Pap tests. The researchers concluded that performance of Pap tests acts as a prompt for physicians to refer clients for mammography. Pap smears and mammograms should be offered as a package of services. NPs have an opportunity to promote Pap smear and mammogram screening packages in their collaboration with physician and nurse colleagues.

NPs' teaching roles can extend to the staff with whom they work. Nurses who do not function in an

advanced practice role need to be aware of guidelines and preparation for breast and cervical cancer screening so that the information can be shared with clients. Staff who schedule client appointments for Pap smears can inform women not to schedule the test when they are menstruating. Women should not use tampons or vaginal medications, douche, or have sexual intercourse for 48 h before their Pap smear (15). Staff should also inform women who are scheduling mammograms not to use body powder, perfume, or deodorant before their x-ray. These simple instructions will help to insure clearer test results, and will help minimize the expense, inconvenience, anxiety, and frustration of retesting.

ADVOCACY

Statistics bear witness to the increase in breast cancer in women and to deaths directly attributable to the disease. Cancer survival rate and morbidity, especially from breast and cervical cancer, are disproportionately distributed among economically disadvantaged groups (34). The monies earmarked for breast cancer research in the U.S. paint a grim picture. Approximately \$132 million was dedicated to breast cancer research for 1992. In 1991, the Breast Cancer Coalition initiated a letter writing campaign to Congress demanding more money for breast cancer research. More than 600,000 letters were written and delivered to Capitol Hill. This action influenced Congress to appropriate an additional \$43 million to breast cancer research. The success of the Breast Cancer Coalition's goal to have an additional \$300 million allotted to breast cancer research achieved a large measure of success due to the unified supportive efforts of concerned individuals and groups (2).

A particular role of nursing is to advocate in behalf of clients. Advocacy for women's health includes organizing and/or participating in activities that affect health policy decision making. Women should not be excluded from health care because of gender, income, race or geographic isolation. By forming or joining groups to lobby government and private agencies, NPs can influence health policy decision makers to provide universal access to care. Such universal access to care includes facilities for services; programs for health screening, maintenance, and restoration; and transportation for clients. By virtue of their advanced knowledge and clinical skills, NPs are uniquely suited to educate the public about health risks, appropriate interventions, and programs that address the needs of individual clients or select

groups. These nurses, in the course of identifying and analyzing services available to women, are aware of gaps in services. Efforts must be initiated to fill such gaps in health care. NPs have both the ability and responsibility to implement change on behalf of clients. Nurses can use their group power to influence government and the private sector to provide money for research focusing on women's health and innovative health care programs. Dissemination of knowledge gained from research will, in turn, lend credibility to information used to influence health policy decision making. Nurses must actively involve themselves in their professional organizations and in groups such as the Breast Cancer Coalition to promote women's health causes.

CONCLUSION

NPs can be the threads that weave the health care tapestry together for women. Their holistic perspective and advanced practice skills enable NPs to intervene at all levels of care. An NP's assessment takes in not only the health of the client but also of the system that serves the client. Any health deficits of either the client or care system must be identified, and appropriate intervention should be initiated. Health teaching must be geared to women so that they can comprehend it, but must also be directed to those professional and nonprofessional caregivers involved in health service provision. Advocacy, derived from knowledge of strengths, weaknesses, and gaps in health services for women, must be vigorously undertaken to insure that clients do not receive inadequate care due to gender, income, race, or geographical isolation. □

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