Breast Cancer: Common Killer of Women

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Cancer in general is a disease the community hears about often. Cancer attacks the body by mutated cells growing rapidly in an abnormal pattern, and it metastasizes different tissues, cells, and organs in the body. However, out of all other cancers, women are most likely to die of breast cancer (Lilleborge et al., 2021). Before breast cancer intricacies can be discussed, one must understand the basic anatomy of the breasts.

The breasts are located on the thoracic cavity's anterior side in the pectoral region. They are two adipose-filled sacs that contain nearly twenty lobes each that end with a milk-producing sac/bulb. The bulbs connect to lactiferous ducts that exit the body at the nipple. Surrounding the breast are fluid-filled sacs called lymph nodes. The main location of the lymph nodes for the breast is in the axillary space, but there are also parasternal nodes and posterior intercostal nodes (Bazira et al., 2021). It is in each of these parts of the breast that cancer can develop and further spread. Although breast cancer can occur in men, it is considered the most common killer of women and understanding the treatment and screening options could be the difference between life and death.

Statement of the Problem

During studies done in the year 2018, one out of eight women will develop breast cancer in their life, while only one out of every thousand men will develop it (Alkabban & Ferguson, 2022). According to a 2020 global cancer study, approximately 2.3 million women are diagnosed with breast cancer each year. However, out of the two million diagnosed, 690,000 cases may end in death (Sung et al., 2021). This number of cases and deaths has declined exponentially from fifty years ago in America. "In total, the death rate dropped by 43% during 1989–2020, translating to 460,000 fewer breast cancer deaths during that time" (Giaquinto et al., 2022).

However, the number of deaths is still high when early screening and treatment could further prevent unnecessary deaths in the United States and worldwide.

It is estimated that by 2040, global cancer diagnoses will increase by 47%. If screened and treated in the same manner as it currently is, breast cancer deaths would rise to an estimated 1.2 million (Sung et al., 2021). During 2022, it is estimated that 339,250 newly diagnosed breast cancer cases will have been diagnosed in the United States female population. Out of these new cases, an approximate estimation places 43,250 women as having died from this disease (Giaquinto et al., 2022). In breast cancer, over 90% of deaths are caused by the aforementioned metastasis. Metastasis is the spread of cancer to other tissues in the body via the bloodstream or lymphatic system. Due to the location of the breasts, metastasis may occur in the lungs, bones, and lymph systems due to their proximity.

Metastasis in the lung's accounts for 21–32% of metastatic breast cancer cases. Death can occur from massive bleeding or hemorrhage due to lung tissue integrity becoming compromised by spreading breast cancer. Cancer spreading to the bone makes up 30–60% of cases. The disease can weaken bone integrity; this leads to fractures that can cause sepsis/ infection and death. As the disease spreads into the bones, the body may also be depleted of key nutrients. Metastasis of the lymph system can lead to a quick decline in health due to the transfer of cancer cells via lymph fluid to the rest of the body. The two most common sites where lymph fluid can carry cancer cells too are the liver (15–32%) and the brain (4–10%) (Wang et al., 2021). If left untreated the number of female deaths due to breast cancer would rise exponentially beyond the current 47% estimation for 2040 (Sung et al., 2021). This increase in cases would adversely affect the female population in general, but it would be extremely detrimental to the medical world.

In a 2019 United States census, out of the 3.6 million registered nurses, home health aides, and psychiatric nurses accounted for, more than 85% were women. In the same census, approximately 33% of the 763,000 physicians recorded were also female (U.S. Census Bureau, 2019). Since one out of eight women will get diagnosed with breast cancer in their life, that would mean approximately 412,860 (12.5%) women in the medical field will have this disease (Alkabban & Ferguson, 2022). If left untreated and these individuals pass away, the care provided to people in hospitals and other facilities would be lacking. If the medical staff is too overwhelmed, signs of decline may be missed, and more deaths could occur. Without the extra staff, burnout among the remaining staff would be more apparent, and the medical field would suffer exponentially. Since the risk of getting breast cancer is so high, it is imperative for women to understand what can be done to detect it as early as possible and how to treat it.

Risk Reduction/ Treatment of the Problem

When determining how to reduce the risk of breast cancer, one must identify nonmodifiable and modifiable risk factors. Non modifiable risk factors can be classified as unchangeable situations such as late menopause or early menstruation below the age of twelve, a family history of breast cancer, race, and gene alterations (Lilleborge et al., 2021). When referring to modifiable risk factors, these are chemical or environmental factors that are known to cause or increase risk for developing cancer, also referred to as carcinogens. While there are many risk factors that can be modified such as weight, nutritional status, and sedimentary lifestyle, but some of the most pertinent are alcohol/ tobacco use and hormone therapy. While tobacco use is a known carcinogen, it does not have statistical proof to lead specifically breast cancer, but it does parallel to increased risk of cancer overall. Heavy intake of alcohol has also been attributed to breast cancer risk (Arthur et al., 2018). However, the statistical information on

the use of alcohol in congruence with risk for breast cancer varies due to incorrect self-reporting of alcohol intake.

On the other hand, even minimal alcohol intake did trend with increased risk. Another modifiable risk factor in common use is hormonal therapy (HT) such as birth control and other endocrine-disrupting compounds (EDCs). These increase “2-fold risk of subsequent breast cancer compared to never-users of HT” (Lilleborge et al., 2021). This increased risk could be modified by not using unnecessary hormone therapy and searching for alternatives. Along with alternating lifestyle choices, screening for breast cancer is key to prevention. “In the United States, through the implementation of breast cancer screening and advances in treatment, a >41% mortality reduction since 1990 has been recorded” (Rahman & Helvie, 2021).

The most common screening is a mammography; this is an x-ray of the breast tissue used to find cancer that one should receive annually starting at age forty for those of average risk. High risk individuals, such as people with a family history of breast cancer, should begin screening at age thirty (Bevers et al., 2018). If cancer is found on the mammogram, treatment options can be conservative or surgical depending on how advanced the cancer is. In terms of conservative measures, chemotherapy is the use of drug therapy that kills rapidly growing cells in the body, and radiation is the use of high-power energy aimed at the location of the cancer to kill the disease. Lumpectomy is the surgical removal of the cancer from the breast, which may lead to shortening or change in breast appearance. On the other hand, mastectomy is the removal of the entire breast tissue to get rid of the cancer or decrease the spread (Spinelli, 2021). Each treatment is beneficial in its own way for the treatment of breast cancer, and although these treatments are available, screening annually is preferred. Detecting the cancer long before surgical intervention is important, and by simply altering modifiable risk factors, one can reduce the chance of developing breast cancer.

Planning of Teaching Content

Breast cancer awareness should be brought to everyone's attention. Since prevention is the preferred treatment, education is key to prevention. Teaching the community may be through a community open presentation. In this environment, the community can ask questions and receive vital information on lifestyle modifications and the importance of annual screenings. In addition, the community can learn what breast cancer is. Throughout the presentation, questions would be addressed to the individuals gathered to assess for understanding of information in an altered teach-back method. In this presentation, visual aids such as anatomy models and pictures would be used to explain the progression of the disease. Brochures and pamphlets would also be provided for the community to take the information home with them and share it with others. The written information would be information discussed in the presentation, and it would also contain local medical centers that perform mammograms. The two most important take aways from this community presentation would be that female clients above the age of forty with nonmodifiable risk factors should receive annual mammograms to screen for breast cancer and that the community understands the importance of altering one or more modifiable risk to lower chances of developing breast cancer.

Conclusion

Common killer of women: that is the true name of this disease. While the number of females diagnosed annually is high, prevention of breast cancer through altering risk factors and early screening is key to decreasing mortality rates for this disease. Treatments provided for breast cancer can be invasive or conservative depending on the severity of the cancer, but overall education and early detection are the most valuable asset to stopping this killer in its tracks.

References

Alkabban, F. M., & Ferguson, T. (2022, September 26). *Breast Cancer*. National Library of Medicine; StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK482286/

Arthur, R., Wassertheil-Smoller, S., Manson, J. E., Luo, J., Snetselaar, L., Hastert, T., Caan, B., Qi, L., & Rohan, T. (2018). The Combined Association of Modifiable Risk Factors with Breast Cancer Risk in the Women's Health Initiative. *Cancer Prevention Research*, *11*(6), 317–326. https://doi.org/10.1158/1940-6207.capr-17-0347

Bazira, P. J., Ellis, H., & Mahadevan, V. (2021). Anatomy and physiology of the breast. *Surgery (Oxford)*, *40*(2). https://doi.org/10.1016/j.mpsur.2021.11.015

Bevers, T. B., Helvie, M., Bonaccio, E., Calhoun, K. E., Daly, M. B., Farrar, W. B., Garber, J. E., Gray, R., Greenberg, C. C., Greenup, R., Hansen, N. M., Harris, R. E., Heerdt, A. S., Helsten, T., Hodgkiss, L., Hoyt, T. L., Huff, J. G., Jacobs, L., Lehman, C. D., & Monsees, B. (2018). Breast Cancer Screening and Diagnosis, Version 3.2018, NCCN Clinical Practice Guidelines in Oncology. *Journal of the National Comprehensive Cancer Network*, *16*(11), 1362–1389. https://doi.org/10.6004/jnccn.2018.0083

Giaquinto, A. N., Sung, H., Miller, K. D., Kramer, J. L., Newman, L. A., Minihan, A., Jemal, A., & Siegel, R. L. (2022). Breast Cancer Statistics, 2022. *CA: A Cancer Journal for Clinicians*, *72*(6). https://doi.org/10.3322/caac.21754

Lilleborge, M., Falk, R. S., Sørlie, T., Ursin, G., & Hofvind, S. (2021). Can breast cancer be stopped? Modifiable risk factors of breast cancer among women with a prior benign or premalignant lesion. *International Journal of Cancer*. https://doi.org/10.1002/ijc.33680

Rahman, W. T., & Helvie, M. A. (2021). Breast cancer screening in average and high-risk women. *Best Practice & Research Clinical Obstetrics & Gynaecology*. https://doi.org/10.1016/j.bpobgyn.2021.11.007

Spinelli, B. A. (2021, January 1). *Clinical Conditions in Patients with Breast Cancer* [Review of *Clinical Conditions in Patients with Breast Cancer*]. ClinicalKey; Elsevier. https://www.clinicalkey.com/#!/content/book/3-s2.0-B9780323509138001152?scrollTo=%23hl0000203

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021, March). Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA: A Cancer Journal for Clinicians*, *71*(3), 209–249. https://doi.org/10.3322/caac.21660

U.S. Census Bureau. (2019, August 14). *Your Health Care Is in Women's Hands*. The United States Census Bureau. https://www.census.gov/library/stories/2019/08/your-health-care-in-womens-hands.html

Wang, L., Zhang, S., & Wang, X. (2021, March). The Metabolic Mechanisms of Breast Cancer Metastasis. *Frontiers in Oncology*, *10*. https://doi.org/10.3389/fonc.2020.602416