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Efforts to Improve Breast Cancer Screening in a Rural Primary Care Clinic

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Introduction of the Problem

Breast cancer is the second-leading cause of cancer-related deaths among women in the United States (American Cancer Society, 2016). The chance that a woman will die from breast cancer is about one in thirty-eight (American Cancer Society, 2019). Although the risk increases as a woman ages, more women aged 40-70 are diagnosed with breast cancer (Wagner, Anderson, & Broxton, 2016). Death rates from female breast cancer have decreased from 1989 to 2016 by 40%, which can be attributed to screening mammograms and earlier treatment (American Cancer Society, 2019). Mammography is an important screening tool because it can detect cancer in early stages, resulting in earlier treatment and reduced mortality (Leeman et al., 2013).

Healthcare providers are at the forefront of advocating secondary prevention such mammograms to patients that meet age-defined American College of Obstetricians and Gynecologists (ACOG) guidelines. Despite recommendations from ACOG, rural women still have lower rates of mammography screening compared to their inner city counterparts. It is imperative that healthcare providers help reduce these health disparities. The rural Illinois outpatient clinic chosen for this project was a prime location to implement an intervention to increase the percentage of eligible women obtaining screening mammograms. The patient criteria consisted of women between 50 to 74 years of age at average risk of breast cancer. A nurse practitioner was the primary stakeholder of this project who provided access to the percent of women pre- mammogram education and post-mammogram education and assisted in providing education to eligible women who met mammogram criteria.

According to research, a health care provider's recommendation is a good predictor of mammogram use (Wagner, Anderson, & Broxton, 2016). Nurse practitioners may play a vital role in providing education to underserved women and understanding the barriers to obtaining

screening mammograms. The six constructs of the Health Belief Model (HBM), perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy were utilized as the conceptual framework in studying cancer-preventive behaviors and guide the implementation of the educational intervention for this project (Champion & Skinner, 2008). When individuals find themselves at risk of developing breast cancer (perceived susceptibility), realize the disease has serious possible consequences (perceived severity), believe that prevention (e.g. a screening mammogram) would have positive results (perceived benefits), understand that there are fewer barriers than obtained benefits (perceived barriers) and believe they have the ability to perform preventative health activities (self-efficacy), then they are more likely to partake in preventative health behaviors such as screening mammograms.

Literature Review

The Centers for Disease Control and Prevention (CDC) define mammography as an X-ray image of the breast that assesses for breast cancer. (CDC, 2018). A screening mammogram detects early signs of breast cancer in women who have no discernible symptoms of the disease (National Breast Cancer Foundation, Inc., 2016). Providing education to patients based on the American College of Obstetricians and Gynecologists (ACOG) guidelines is an integral component in increasing the percentage of eligible women obtaining screening mammograms. Preventative care such as screening mammography should be assessed and documented during each provider visit. Healthcare providers should encourage eligible women to obtain yearly screening mammograms as well as discuss risks, benefits, and barriers to obtaining screening mammograms.

Rural women have low rates of mammography screening which may be attributed to certain barriers (NRHA, 2012). Barriers cited for low screening rates include lack of insurance, geographic distribution of screening facilities and poor health literacy (NRHA, 2012). Additional

barriers include poverty, cultural beliefs, and fear of test or diagnosis (NRHA, 2012). Any delay in screenings may have serious consequences as treatment at a later stage in the disease has a 15%-49% survival rate compared to 93% survival rate if diagnosed earlier. Women of rural areas experience a more advanced stage with breast cancer diagnosis and higher cancer-related mortality (Peppercorn et al., 2015).

Education is the single most important factor in increasing the percentage of women obtaining screening mammograms. This may involve educational sessions with providers, educational posters or brochures, following up with phone calls, newsletters, and pocket reminder cards. Additionally, healthcare providers may address the barriers to screening mammography and serve as advocates in obtaining transportation and access to services such as breast cancer screening programs.

Project Methods

The purpose of this project was to develop and implement an evidence-based quality improvement process to help increase mammography compliance in a rural primary care clinic. The project was a pilot study, which consisted of a nurse practitioner and her office staff. Our education intervention was derived from The Health Belief Model (HBM), which states that if women believe they are susceptible to developing breast cancer or its serious complications and are aware of benefits conferred by screening mammograms, then they are more likely to obtain a screening mammogram.

A mammography questionnaire was distributed to women during their well-visit examination who met the American College of Obstetricians and Gynecologists (ACOG) requirements for annual mammogram screening. The questionnaire included 8 questions regarding barriers to mammogram screening and knowledge of the ACOG guideline for mammogram

screening. Any woman aged 50 to 74 years at average risk of breast cancer received the questionnaire. The questionnaire was then used to determine if women in this rural primary care clinic encountered the same barriers that were discussed in our literature review. Based off this information, an onsite educational session was presented as a lunch-in at the clinic to the provider and her staff. Brochures were also developed with information about barriers to mammogram screening, the mammography questionnaire and our literature review. Additionally, the nurse practitioner, office staff, and DNP candidates developed an educational intervention that was implemented at the start of October 2019, which was breast cancer awareness month. During the pre- implementation stage, any woman aged 50 to 74 years of age who came in for a well-visit and met the recommended criteria for breast cancer screening, received the educational brochure to take home. An educational poster was also developed and placed in each nurse practitioner's examination room during these months. The office staff also conducted reminder phone calls, as well as sent postcard reminders in the mail. The impact of this intervention was assessed by examining the rates of mammogram screening in the period prior to and after implementation.

Evaluation

Initially, out of the 100 questionnaires that were distributed to qualified women, 88 (88%) were fully completed. The remaining 12 were either incomplete (2%) or the patient refused to participate (10%). The nurse practitioner also noted 8 missed opportunities to disseminate the questionnaire due to the workload of the clinic in combination with being short-staffed on certain days. The implementation of the educational intervention was October 2019, which was breast cancer awareness month. Post-implementation in December of 2019, the staff at the clinic ran their statistical data on health maintenance requirements for the months of October through December 2019. Prior to the implementation of our project, the nurse practitioner had only 5.5% of 142

eligible women who completed their screening mammogram. Following implementation of the mammogram education, the nurse practitioner had 147 eligible women who met the recommendation for yearly screening mammograms. Of these 147 women, 6.5% of mammograms were completed.

Impact on Practice

The implemented education intervention impacted this clinical practice site by increasing the percentage of eligible women obtaining screening mammograms. Although this is a small increase, this percentage only included women seen by the nurse practitioner and not inclusive of women seen by other providers in the clinic. The barriers we encountered throughout the implementation of this project included lack of time, failure to hand out questionnaires to women who met the criteria, the workload of the clinic, and lack of involvement from other providers in the office. The time constraint for the implementation of the project was a major barrier. A longer time-frame for the implementation may have given more time to provide brochures and education to patients, as well as increased involvement from the other providers. It is probable that we would have seen a more significant increase in the compliance rate of screening mammograms.

This rural clinical site has two other locations also located in Illinois. Since there was a percentage increase at this clinical site, the long-term impact of this project may lead to application of this educational intervention to increase mammogram compliance at the other two locations. The implementation of this quality improvement project was effective and the results revealed the influence that nurse practitioners may have on increasing health maintenance. While it may be difficult to get all staff members on board with brochure distribution, reminder phone calls and postcards, this project was a step in the right direction.

Conclusions

The Health Belief Model (HBM) served as the conceptual framework for the development of this educational intervention. Understanding the barriers to obtaining screening mammograms enables a health-care provider to advocate for the patient. Provider education, recommendations, and reminders are important in getting women to comply with screening mammography. As the nurse practitioner continues to implement these changes at the current clinical site, we hope that other providers at Macoupin Family Practice will also contribute to help increase compliance with screening mammography.

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