

Assessment the Anxiety Level Among Women Who Undergoing Mammogram Screening

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Abstract: Breast cancer is the leading cause of death among women around the world. the evidence confirmed that the prognosis of breast cancer depends mainly on the early detection of the disease. Mammography screening is one of the most reliable and effective methods of early detection. One of the main barriers to early detection through screening is the anxiety of breast cancer screening. however, The primary objective of this literature review is to find out the gaps related to the role of anxiety on breast cancer early detection. and the contributing factors that can affect anxiety levels. The purpose of searching the literature is to find out where is known about the research problem). To find relevant studies, Literature exploration was carried out using different electronic data bases including the Pub Med, Cumulative Index Nursing and Allied Health Literature (CINAHL), Medical Literature On Line (Medline), The Exerpta Medical Data base (EMBASE), and Google Scholar. The search by entering a word or phrase that captures the key concepts in the articles was applied.

Keywords: Breast cancer, Mammogram, psychological barriers, Anxiety, women, screening.

I. INTRODUCTION

This paper presents the results reviewing the literature to find out the gaps related to the role of anxiety on breast cancer early detection. The purpose in searching the literature is to find out where is known about the research problem (Polit, and Beck, 2018). To find relevant studies, Literature exploration was carried out using different electronic data bases including the Pub Med, Cumulative Index Nursing and Allied Health Literature (CINAHL), Medical Literature on Line (Medline), The Exerpta Medical Data base (EMBASE) and Google Scholar. The searching by entering a word or phrase that captures the key concepts in the articles was applied (Polit, and Beck, 2018).

Key words used: anxiety, women, Mammogram screening, contributing factors. After a comprehensive searching, the following studies are supporting the aim of this study which is the assessment of the level of anxiety among women who undergoing Mammogram screening.

II. BODY OF ARTICLE

1. Breast Cancer and its prevalence

A retrospective chart review conducted by Asiri, et al. (2020) to determine the recent trends in breast cancer incidence rates by age and tumor characteristics among female patients treated in the Armed Forces Hospital Southern Region (AFHSR) from the period of January 2010 to December 2017. The result showed that the average age for diagnosed women with invasive breast cancer is about 56 years of age while in situ is 51 years. Among women of all age groups, ductal carcinoma is the most common. There is also an increase in the incidence of breast cancer between 2016 to 2017, where the highest incidence rate was reported in the year 2017. Continued vigilance, mammographic screening, and patient education are needed to establish an early diagnosis and perform the optimal treatment.

The study conducted in Saudi Arabia by Basudan, (2022) to assess breast cancer incidence patterns and trends among the Saudi female population. Breast cancer incidence parameters were obtained from the Saudi Cancer Registry (SCR). The data were retrospectively analyzed for the period from 2001 to 2017 to investigate changes in incidence rates. The result revealed that breast cancer jumped by 55% to constitute 30.9% of all cancer cases among Saudi females. The median age at diagnosis increased to reach 51 years at the end of that period, with an overall increase of 6.3%. The overall Age-Standardized Incidence Rate (ASR) escalated by 151.7% from 11.8/100,000 to 29.7/100,000 population for that period. The Eastern region noticeably had the highest ASR and peaked at 52.2/100,000 population. The joinpoint analysis of the ASR showed increased trends, with an annual percent change (APC) of 5.13% ($p < 0.05$, [95% CI 4–6.3]). An age-specific analysis was also performed and showed that the age group 70–74 years had the highest trend (APC 10.2%, [95% CI 7.2–13.4], $p < 0.05$). Region specific analysis revealed that the Jouf region had the highest trend among the regions (APC 8.8%, [95% CI 3.7–14.2], $p < 0.05$).

2. Benefits of Mammogram screening

Grimm et al., (2022) reported the primary benefits of screening for women in their 40s are a reduction in breast cancer mortality, years of life lost to breast cancer, and morbidity of breast cancer treatment by detecting cancers at an earlier stage. Compared to older women, the risks of breast cancer screening in women ages 40 to 49 years includes more false positive recalls and biopsies as well as transient anxiety. Concerns regarding radiation induced malignancy and over diagnosis are minimal in this age group.

Loving et al., (2021) reported that Screening mammography significantly reduces breast cancer mortality through early detection. Multiple medical organizations agree on this life-saving benefit, including the U.S. Preventive Services Task Force (USPSTF), American College of Radiology, National Comprehensive Cancer Network, and American Cancer Society.

3. Impact of women's anxiety on screening mammograms

A cross-sectional study was conducted in Muscat, Oman by Al-alawi et al., 2019 to determine the social, emotional, and physical dysfunction before mammogram screening the result showed 300 women who were 40 years old. The results of the investigation revealed that the use of mammography did not have a detrimental psychological effect. Women with a history of cancer were more prone to experiencing negative psychological effects on the PCQ domains. The social and emotional scores were also higher in the women between 40 and 50 years old. The employment status of the participants had a significant impact on the scores. Although women's literacy levels did not affect the domains, their educational level did not affect them, by the waiting time.

A systematic literature search will be performed in the Cochrane Library, PubMed, Embase, and Web of Science from inception to July 2020. Randomized controlled trials (RCTs) will be included to evaluate any interventions in the treatment of anxiety related to mammography screening. Conducted by Shang et al., (2020) The study's primary outcome measure is the effect of anxiety on the patient and breast cancer worry. On the other hand, satisfaction is the other measure. The result showed through a search, 782 English studies were obtained regarding the effects of anxiety on the screening for mammography. After preliminary examination, 773 studies were excluded. Nine of these will be included in the full-text assessment, and these findings will be submitted to a journal for publication.

In Taiwan, a quasi-experimental study conducted by Kuo et al., (2021) After the intervention, the experimental group's state anxiety score was significantly lower than that of the control group (30.63 ± 8.43 vs. 33.77 ± 10.74 , $p < .05$). However, there was no significant difference in pain scores (4.13 ± 2.37 vs. 4.57 ± 2.31 ; $p = 0.25$). Although a multimedia-based health education program can help reduce distress associated with mammography, it does not alleviate the discomfort that comes with the test.

In Alexandria, Egypt study was conducted by Youssef Sharaf & Abd Allah Abd El Hafeez, (2019) to determine the effect of nursing interventions like teaching deep breathing techniques and providing health education on pain and anxiety related to mammography. Results showed the participants' mean age was (39.96 ± 10.40), and they were 41.54 ± 10.45 years old in the study and control groups. The nursing interventions significantly reduced the levels of anxiety and pain in women who underwent mammography. Around 60.0% of the study participants experienced mild pain, while 32% said they not anxious.

4. women's knowledge and attitudes towards breast cancer and screening mammograms

In Saudi Arabia, a Cross-sectional study was conducted by Ashareef et al., (2020) to assess the level of awareness, knowledge and attitude of Saudi female teachers towards BC, in primary intermediate and secondary schools within the Makkah region. The results showed that knowledge and attitude about BC amongst the female teachers differed significantly by age and marital status. Those aged 46-55 ($F=8.5$, $p>0.002$) and those who are married ($F=2.7$, $p>0.04$) had more knowledge about BC than others. The majority of respondents had a limited level of knowledge and understanding of BC symptoms. However, it also showed that the teachers are very enthusiastic to learn about BC, and its prevention. Most participants (40%) reported that they had not performed any breast exams before.

A cross-sectional study was carried out by AL-Mulhim et al., (2018) to assess the attitudes and practices of women in the Eastern Province toward screening mammography (SM) and breast self-examination (BSE). The result revealed that 12.4% reported having undergone mammography, 48.1% reported that they intended to do it in the future, while 12.7% reported having no intention to perform it. 43% reported performing BSE regularly. Sources of information about breast cancer and breast cancer screening included educational campaigns (27.8%) and media (27.8%). 75.2% of the respondents reported that their physician had no role in educating them about breast cancer screening. There was a significant relationship between the educational level of respondents and the practice of both BSE ($P = 0.0001$) and SM ($P = 0.0000$), as well as a significant association between the practice of mammography and having a relative diagnosed with cancer ($P = 0.001$).

A cross-sectional study conducted by Almutairi et al., (2019) to assess the beliefs of Saudi women toward the mammography and to determine their attitude through mammography screening. The result showed that women of the present study had good beliefs (45.19 ± 4.756) about screening by mammogram. Education level was highly associated with the beliefs about breast cancer mammogram; the highest score that denoted favorable attitudes reported with postgraduate high education (47.65 ± 4.9 , $p < 0.0001$). Age and family history of participants of breast cancer were not associated ($p = 0.28$, $p = 0.473$) with their beliefs regarding breast cancer mammogram.

5. Anxiety and Barriers toward mammogram screening

In Saudi Arabia, a cross-sectional study conducted by Abdel-Aziz et al., (2018) to investigate the perceived barriers towards BC screening in Al Hassa, Saudi Arabia. The result showed that low utilization of BC screening being significantly positively associated with woman's age, higher educational status, higher family income, using hormonal contraception and positive history of previous breast as shown by the results of the logistic regression model. Exploratory factor analysis showed that personal fears (especially fear of doctors/examiners, fear of hospitals and health facilities and fear of consequences/results) were the major factors that hinder women from utilizing the free of charge BC screening with high loading eigenvalue of 3.335, explaining 30.4% of the barriers.

A cross-sectional study conducted by Al-Zalabani et al., (2018) to identify breast cancer screening barriers among women attending primary health centers (PHC) in Madinah, Saudi Arabia. The result showed that the most important predictors of the barriers to mammography were incorrect beliefs about mammography and its procedures. A belief that mammography is painful was significantly associated with a 56 % reduction in its use (OR = 0.44; 95 % CI = 0.22-0.88).

A prospective study was conducted by Aldhafeeri & Abozeed, (2020) to assess the pain and anxiety level in women undergoing mammogram investigation. The result revealed that up to 57% ($n=57$) of the women expressed severe anxiety about the mammogram procedure. Most of the women-85% ($n=85$)-were found to have poor knowledge related to mammograms and mammogram preparation. There was a strong correlation between pain before and during the mammogram procedure, P-Value (0.00001*) with Chi-squared (33.40) and a highly significant correlation between satisfactory and unsatisfactory knowledge in women's P-Value (0.00001*) with z test (6.57). A poor knowledge about breast cancer was detected in the overall studied women and those who had never undergone mammography, particularly knowledge related to the risk factors for breast cancer.

While in Turkey, A cross-sectional study conducted by Çelik et al., (2021) to determine mammography-related pain and anxiety level among women. The result revealed that 70.7% women experienced pain during mammography. About a quarter of women describe mammography as a painful procedure. Mammography-related pain level was found to be at the 38.40 ± 22.46 and "moderate" level among the participants. It was determined that women during mammography experienced mean 40.0 and "mild" anxiety level. There was no statistically significant difference between the frequency of pain and anxiety.

In Palestine, a cross-sectional study design carried out by Hamshari et al., (2021) to assess mammography screening uptake and barriers among women attending primary healthcare centers (PHCs) in northern Palestine. The result showed that the majority (69.2%) were considered to have adequate knowledge about breast cancer and mammography screening. Mammography screening uptake among the participants was 37%. Almost 85% of the women had a positive attitude towards breastfeeding as a prophylaxis factor against breast cancer, while the most frequent barrier to mammography screening was that the participants believed they did not have any symptoms (28.6%), followed by 22.1% of them who did not want to know if they had breast cancer.

A quasi-experimental design and purposive sampling were conducted by Hsu et al., (2019) to understand the major barrier of women on breast cancer and screening procedures. The result of this study showed that after multimedia health education intervention, the scores of perceived susceptibilities, perceived seriousness, perceived benefits, perceived barriers, cues to action, and self-efficacy in the experimental group were all significantly higher than the control group. We believe that the effectiveness of multimedia health education is better than traditional health education methods, and can enhance women to receive breast cancer screening.

6. Nursing role in reducing anxiety toward mammogram screening

A cross-sectional descriptive study was conducted by Zain, et al., (2020) to investigate how music would influence anxiety levels among women undergoing mammogram screening. The 'State-Trait Anxiety Inventory' form was used to measure the level of anxiety. A total of 60 respondents participated in this study of which 30 (50.0%) were in a control group and 30 (50.0%) were in the experimental group. The result showed that anxiety levels are high in women who underwent mammography with no music (60.0%) as compared to those with music (53.3%), although the difference is not significant ($p > 0.05$). Music intervention has the potential to reduce anxiety levels during mammography examinations.

A case-control study was conducted by Alsolami et al., (2019) to assess determinants of breast cancer including socioeconomic factors, health-related characteristics, menstrual histories, and breastfeeding among postmenopausal women in the Makkah region in Saudi Arabia. Results displayed that determinants of breast cancer were associated significantly ($P < 0.05$) with unemployment, large family size, lack of knowledge and awareness about breast cancer, obesity, sedentary lifestyle, smoking, starting menarche at an early age, as well as hormonal and non-hormonal contraceptive use. There was no effect of diabetes, hypertension, hyperlipidemia, and duration of breastfeeding on the incidence of breast cancer.

III. CONCLUSION

The literature review demonstrates evidence about the effect of anxiety on early detection of breast cancer as a barrier that can prevent women from doing mammogram screening. However, we found evidence confirming that the prognosis of breast cancer depends mainly on the early detection of the disease. There are many methods used for early detection of breast cancer, these include clinical breast examinations, mammogram screening, genetic screening, molecular diagnostics, ultrasonography, and magnetic resonance imaging. Mammography screening is one of the most reliable and effective methods of early detection. Anxiety before mammogram screening leads to negative impacts on the experiences of women undergoing mammography. Music intervention has the potential to reduce anxiety levels during mammography examinations.

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