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A literature review of breast cancer screening barriers among Arab American women

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Background: Immigrants of ethnic minorities are the most likely to be diagnosed with advanced breast cancer (BC), and they subsequently have a higher mortality rate than nonimmigrant women. Despite facing this risk of BC, women from ethnic minority groups, such as Arab American women (AAW), are less likely to participate in breast cancer screening (BCS).

Purpose: This integrative literature review is to provide an overview of BCS barriers among AAW.

Methods: Online searches conducted on PubMed, CINAHL, Google Scholar and PsycINFO, for articles dating from 2005 to 2015. Some of the keywords used: Arab American, mammogram, BCS, knowledge, attitude, and culture. Fifteen studies met the inclusion criteria which are (1) studies that exclusively or partially consisted of AAW participants; (2) research that studied AAW's attitudes or practices toward BCS; and (3) studies that were written in English.

Findings & Conclusion: BCS barriers among AAW are divided into four main categories that are further subdivided into subcategories, including socio-cultural barriers (family, stigma, and modesty); psychological (fatalism, perceived susceptibility, and fear); organizational barriers (language issues, health care system navigation difficulties, health care provider (HCP) preferences, and physicians' recommendations); and structural barriers (lack of health insurance, transportation issues, and distance of the facilities). Some BCS barriers, including fatalism and family relationships, were also found to be facilitators for some AAW to obtain BCS. The studies contradicted one another as to whether modesty was a BCS barrier. Acculturation and religiosity are one of possible explanations for results contradiction which need consideration in future research.

Mathematical identification of isolated clustered micro-calcifications based on the distribution of effective atomic number in the mammary gland

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The goal of this work was to improve the efficiency of early detection of micro-calcifications, the earliest indicators of breast cancer. Studies have shown that the presence of isolated clustered micro-calcifications in the mammary gland significantly increases the range of variation of effective atomic number and significantly changes the form of its distribution. Isolated micro-calcifications may not be visible at neither traditional neither difference, neither dividing mammograms, neither at the distribution of their linear convex combination. However, the fact of its presence in the mammary gland can be set analytically by the form of the distribution of the effective atomic number. The distribution of the effective atomic number in the tissue without micro-calcifications is symmetrical and close to normal law. But breast with isolated clustered micro-calcifications is characterized by asymmetry and high values of the maximum effective atomic number. The coordinates of the location of isolated micro-calcifications can be calculated mathematically.