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"Health disparities of mammography use for breast cancer screening in US women"

Breast cancer has been the second leading cause of cancer deaths in women for the last three decades. Multiple studies have shown that breast cancer screening practices, like mammography, are vital to early breast cancer detection and reducing its mortality. Many factors can influence mammography rates such as education and health insurance. These and other factors have contributed to the health disparities seen today in cancer screening. According to the American Cancer Society, only 30% of uninsured women were up to date with breast cancer screening compared with 64% of insured women in 2018. This study aims to understand which factors contributed to mammography use for women aged 40-54. This study was conducted using the 2019 National Health Institute Survey (NHIS) data, a national survey conducted by the U.S. Census Bureau. Our study population included 3,651 women aged 40 to 54 with valid information for the two mammogram questions: "Ever had a mammogram?" and "Most recent mammogram?". We focused on evaluating the following 8 factors associated with mammography use: demographics (age, race, and marital status), socioeconomic factors (education level and income), health care (health insurance and access to healthcare), and behavioral factor (smoking status). The primary outcome for this study is mammography use status: binary (never vs. ever use) and 3-group status (never, >1 year, and past year). Associations between variables of interest and mammography use status were tested using Chi-square tests and logistic regression models via R Studio. Among US women age 40-54, 18.9% women never had mammogram screening for breast cancer, and 49.8% had a mammogram during the past year, which followed the breast cancer screening guideline. Except race, all factors were statistically significantly associated with the 3-group mammography use. For evaluating factors associated with following breast cancer guidelines of mammogram screening, women who were older (57.5%, aged 50-54), with college or above education (52.2%), higher income (58.9% for family poverty ratio>=5), married (53.0%), with health insurance (52.2%), access to healthcare (51.8%), and never smoking (52.7%) tended to have a mammogram screening in the past year compared to their counterparts. For evaluating factors associated with "never use" mammogram screening, both univariate and multivariable logistic models were performed. In the multivariable logistic model, except smoking and race, all factors were significantly associated with a never-use mammogram. After adjusting for other factors, young women aged 40 to 44 (odds ratio [OR] of never use mammogram= 6.3, $p<0.001$), low education (OR= 1.3, $p=0.005$), no health insurance (OR= 2.2, $p<0.001$), single or never married (OR= 1.3, $p= 0.031$), no access to health care (OR= 2.3, $p<0.001$) were the high-risk groups of never having mammogram screening compared to their counterparts. There was no significant difference between Whites and African Americans for never mammogram use status in the univariate model. However, after adjusting other factors, African American women had a higher rate of using a mammogram ($p=0.020$). These findings will provide valuable information for identifying the target intervention groups of no or low usage of mammography. This information is beneficial for policy making and community engagement for promoting mammography use and reduce breast cancer health disparity.