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# Comparison of Breast Cancer Risk Estimations, Risk Perception, and Screening Behaviors in Obese Rural Korean Women

SoMi Park, PhD, RN, Barbara B. Cochrane, PhD, RN, FAAN, Sang Baek Koh, MD, and ChaeWeon Chung, PhD, RN

**P**erceived risk of a health issue involves a risk judgment about the possibility of experiencing that issue; therefore, accurate information about cancer risk can influence health behaviors for prevention and screening (Katapodi, Dodd, Lee, & Facione, 2009). A meta-analysis found that interventions tailored to promote mammography screening produced the strongest effects on health behaviors (Sohl & Moyer, 2007), particularly in women with the *BRCA1* or *BRCA2* gene or otherwise at high risk for breast cancer (Lerman et al., 2000; Rothmund, Paepke, & Flor, 2001). Breast cancer rates are increasing rapidly in Korea, with an annual average incidence rate of about 6.5% from 1999–2008 (National Cancer Information Center [NCIC], 2011) compared to a 1.5% decrease rate per year in the United States (American Cancer Society [ACS], 2011). As breast cancer is the second most prevalent cancer in Korean women after thyroid cancer, involving 15% of female cancers (NCIC, 2011), strategies to assess women's risk are necessary for the adoption of proper health behaviors for prevention and early detection.

In Korea, the obesity rate was about 26% in adult women older than age 19 in 2007; the rate was higher in rural women (35%) compared to urban women (26%) (Ministry for Health, Welfare and Family Affairs, & Korea Centers for Disease Control and Prevention, 2008). Worldwide, obesity increases women's risk of breast cancer, as well as cardiovascular diseases and type 2 diabetes (Selvan, Wilkinson, Chamberlain, & Bondy, 2004; Stephenson & Rose, 2003; Yoo, Noh, & Choi, 1995). In a 14-year prospective cohort study in Korea, obese women (body mass index [BMI] = 30 or higher) aged 50 years or older were at increased risk for developing breast cancer (hazard ratio [HR] = 1.38, 95% confidence interval [CI] [1, 1.9]) (Jee et al., 2008). A cohort study with postmenopausal

**Purpose/Objectives:** To assess three breast cancer risk assessment tools in obese rural Korean women.

**Design:** Cross-sectional survey design.

**Setting:** Community settings in the rural region of north-eastern South Korea.

**Sample:** A nested cohort sample of 64 severely obese women aged 40–60 years from the Korean Genomic Regional Cohort registry.

**Methods:** The Breast Cancer Risk Assessment Tool of the National Cancer Institute (BCRAT-NCI), Breast Cancer Risk Appraisal for Korean Women (BCRA-K), and Estimation of Individualized Probabilities of Developing Breast Cancer for Korean Women (EIPDBC-K) were used for interview data. Mammography, women's perceptions, and screening behaviors also were analyzed.

**Main Research Variables:** Breast cancer risk assessment, mammography findings, women's perceptions of breast cancer risk, and breast cancer screening behaviors.

**Findings:** A total of 5 (BCRAT-NCI), 19 (BCRA-K), and 43 (EIPDBC-K) women were at higher (above average or high) risk for breast cancer. The BCRA-K ( $r = 0.28$ ,  $p < 0.05$ ) and EIPDBC-K ( $r = 0.43$ ,  $p < 0.001$ ) correlated with mammography findings. However, the BCRAT-NCI correlated only with the BCRA-K. Women's breast self-examination ( $\chi^2 = 4.77$ ,  $p < 0.05$ ) and mammography findings ( $\chi^2 = 5.22$ ,  $p < 0.05$ ) differed according to their risk perception.

**Conclusions:** Risk assessment by the BCRA-K and EIPDBC-K was related to mammography findings. Women's perception of breast cancer risk influenced their screening behaviors. When choosing a risk assessment tool, healthcare professionals should consider the ethnic and cultural backgrounds of the target population.

**Implications for Nursing:** Healthcare professionals should use appropriate risk assessment tools in breast cancer education and counseling to help women understand their risk factors and adopt proper health behaviors.