

# Underestimation of Breast Cancer Risk: Influence on Screening Behavior

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**B**reast cancer is the second-leading cause of cancer death for women in the United States. Epidemiology, molecular biology, and genetics have improved the understanding of disease etiology, whereas early detection has helped decrease morbidity and mortality (American Cancer Society [ACS], 2008). Breast cancer risk assessment tools, such as the Gail model (Gail & Constantino, 2001; Gail et al., 1989), use epidemiologic variables and information from a woman's reproductive history to provide an objective estimate of her probability of developing the disease. Healthcare providers can use risk assessment tools to estimate an individual's probability of developing breast cancer to provide tailored recommendations about risk factors and screening. Women with an average risk for developing breast cancer should obtain clinical breast examinations (CBEs) and annual mammograms starting at age 40 (ACS), whereas women at high risk should explore additional screening methods (e.g., magnetic resonance imaging) and might consider initiating screening at an earlier age and at more frequent intervals (Gail & Rimer, 1998; Humphrey, Helfand, Chan, & Woolf, 2002). A woman who has received factual information about her breast cancer risk will probably be more likely to maintain an appropriate level of screening (Leventhal, Kelly, & Leventhal, 1999; Weinstein & Nicolich, 1993).

Two meta-analyses (Katapodi, Lee, Facione, & Dodd, 2004; McCaul, Branstetter, Schroeder, & Glasgow, 1996) supported that perceived breast cancer risk has a significant positive effect on screening mammography. However, the reported Cohen's effect sizes were small ( $d = +0.2$  and  $d = +0.16$ , respectively) (Katapodi et al.; McCaul et al.), suggesting that perceived risk may not be the primary force behind breast cancer screening. Risk appears to be a necessary but insufficient condition for adopting and maintaining routine.

The observed small effect sizes may be explained by an underestimation of risk that inhibits women from adopting appropriate screening. The suggestion has significant clinical implications. Women at high risk for developing breast cancer who underestimate their risk are less likely to comply with medical recommenda-

**Purpose/Objectives:** To describe perceived breast cancer risk, identify the percentage of women with inaccurate risk perceptions, and examine the influence of perceived and objective risk on screening behavior.

**Design:** Descriptive, correlational, cross-sectional.

**Setting:** Community settings in a metropolitan area on the western coast of the United States.

**Sample:** Multicultural sample of 184 English-speaking women (57% non-Caucasian,  $\bar{X}$  age =  $47 \pm 12$  years) who have never been diagnosed with cancer.

**Methods:** Two perceived risk scales (verbal and comparative) and the Gail model were used to assess perceived and objective breast cancer risk, respectively.

**Main Research Variables:** Perceived breast cancer risk, objective breast cancer risk, screening behavior.

**Findings:** Participants reported that they "probably will not" get breast cancer and that their risk was "somewhat lower" than average. Family history of breast cancer was a significant predictor of perceived risk. Demographic characteristics and objective risk factors were not associated with perceived risk. Most women at high risk for breast cancer (89%) underestimated their actual risk; fewer women with low to average risk for breast cancer (9%) overestimated their risk. Age, Gail scores, and health insurance status promoted breast cancer screening; underestimation of risk had the opposite effect.

**Conclusions:** Inaccurate perceptions of risk do not promote optimal breast cancer screening. The finding has implications for most women at high risk for developing breast cancer who underestimate their risk.

**Implications for Nursing:** Oncology nurses can use risk assessment tools to provide individualized counseling regarding breast cancer risk factors and screening. Women at high risk who underestimate their risk could benefit from additional screening and from advances in cancer chemoprevention.

tions and benefit from advances in early detection and chemoprevention. In addition, women at low-average risk who overestimate their risk are likely to suffer unnecessary anxiety. As a result, this study sought to examine the accuracy of women's perceived breast cancer risk and whether inaccurate perceptions of risk influence breast cancer screening behavior. The specific aims were to (a) describe women's perceived breast