Underestimation of Breast Cancer Risk: Influence on Screening Behavior

Maria C. Katapodi, PhD, MSc, BSN, Marylin J. Dodd, PhD, RN, FAAN, Kathryn A. Lee, PhD, RN, FAAN, and Noreen C. Facione, PhD, RN, FAAN

Breast 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 & Nicolic, 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 recommendations 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 cancer risk, identify the percentage of women with inaccurate risk perceptions, and examine the influence of perceived and objective risk on screening behavior. 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 recommendations 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 cancer risk, identify the percentage of women with inaccurate risk perceptions, and examine the influence of perceived and objective risk on screening behavior. 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 recommendations 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 cancer risk, identify the percentage of women with inaccurate risk perceptions, and examine the influence of perceived and objective risk on screening behavior.