

# The Interaction of Perceived Risk and Benefits and the Relationship to Predicting Mammography Adherence in African American Women

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**B**reast cancer is the second-most fatal form of cancer among women in the United States. Studies show that African American women experience higher breast cancer mortality rates compared with Caucasian women (33 of 100,000 versus 22 of 100,000, respectively) (Ries, Melbert, & Kraphcho, 2009). African American women continue to have lower five-year survival rates (78%) compared to Caucasian women (91%), leading to the increased mortality from breast cancer seen in the African American population (American Cancer Society, 2011). Screening mammography has been associated with a 44% reduction in risk of late-stage disease for all populations (Harris, Miller, & Davis, 2003). Although one-time use of mammography has increased (Breen, Gentleman, & Schiller, 2011), some women do not adhere to mammography screening recommendations that would reduce breast cancer mortality (i.e., yearly mammograms recommended at age 40 and continuing for as long as a woman is healthy) (Menon et al., 2007). Researchers have described relationships between theoretic variables included in the Health Belief Model (HBM) and mammography screening outcomes; however, little research has addressed the interaction of those same theoretic variables and their ability to predict mammography adherence.

HBM constructs, including perceived barriers to and self-efficacy for mammography, have been shown to predict mammography use (Champion, Skinner, & Menon, 2005; Ronis, 1992). Cultural beliefs among African American women also have been related to mammography screening, including fear of cancer discovery and treatment (Adams, Becker, & Colbert, 2001; Allen, Sorensen, Stoddard, Colditz, & Peterson, 1998; Champion et al., 2004; Karliner, Patricia, Juarbe, Pasick, & Perez-Stable, 2005; Mayne & Earp, 2003) and a fatalistic view about the inevitability of death once diagnosed (Mayo, Ureda, & Parker, 2001; Powe, 1994, 1995; Powe, Hamilton, & Brooks, 2006). In addition, folk beliefs such as injury

**Purpose/Objectives:** To test the interaction of perceived risk and benefits and how they impact stage of mammography readiness and adherence.

**Design:** Cross-sectional study.

**Setting:** Community gathering centers and healthcare clinics across Indiana.

**Sample:** 299 African American women who had not had a mammogram in more than 18 months.

**Methods:** In-person interviews were used to collect data on sociodemographics, health belief variables, and stage of readiness to undertake mammography screening. Four categories were created to measure the combined magnitude of high or low levels of perceived risk and benefit, with health belief variables linked to modified mammography screening behavior.

**Main Research Variables:** Perceived risks and benefits, stage of readiness, and mammography adherence.

**Findings:** The lowest rate of mammography adherence was in women with a high perceived risk and low perceived benefit toward mammography adherence (26%). The highest rate of adherence was in women with a high perceived benefit and low perceived risk (46%). Differences in mammography adherence were statistically significant between the groups ( $p = 0.009$ ).

**Conclusions:** The interaction of high perceived risk and low perceived benefits impacted readiness to undergo screening mammography.

**Implications for Nursing:** Reducing disparities in breast cancer diagnosis and survival requires timely and efficient mammography adherence. African American medically underserved women with high perceived risk and low perceived benefits exhibited a reluctance to move forward with mammography adherence. Interventions are needed to increase the perception of mammography benefit and to subsequently reduce breast cancer mortality rates in that population.

spreading cancer (Lannin et al., 1998) and that cancer may be caused by squeezing and touching the breasts (Russell, Monahan, Wagle, & Champion, 2007) also may be barriers. Religious beliefs have been associated with