

THE IMPACT OF BREAST CANCER RISK, PSYCHOLOGICAL DISTRESS, & DISPOSITIONAL OPTIMISM ON IMMUNE RESPONSES IN HEALTHY WOMEN

Na-Jin Park, MSN / Duck-Hee Kang, PhD

University of Alabama at Birmingham

School of Nursing

1530 3rd Avenue South, Birmingham, AL 35294

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Background: Breast cancer is a multifactorial disorder influenced by gene-environment interactions. Family history of breast cancer, especially in first-degree relatives (FDR) is a known risk factor of developing breast cancer. Women who have FDR diagnosed with breast cancer, therefore, may perceive themselves to be at high risk, often exaggerating their risk, and experiencing undue psychological distress. Psychological distress, in turn, negatively affects immune response such as natural killer cell activity (NKCA) and lymphokine activated killer cell activity (LAKCA) that play an important role in tumor defense mechanism. Optimism, on the other hand, is known to moderate risk perception and psychological distress.

Purpose: Based on the Selye's framework of Physiological Response to Stress and Lazarus and Folkman's Transactional Model of Stress, the specific aims of this study are to: (1) examine the impact of objective and subjective breast cancer risk on immune responses; (2) examine the mediating role of psychological distress on the relationship between subjective breast cancer risk and immune responses; (3) determine the moderating role of optimism on the relationship between subjective breast cancer and psychological distress; and (4) assess the association between objective and subjective breast cancer risk in healthy women with or without family history of breast cancer in FDR.

Methods: For this cross-sectional, descriptive study, a convenience sample of 126 healthy women complete self-report questionnaires of objective and subjective breast cancer risk, psychological distress and optimism and provide a blood sample once. Objective breast cancer risk is calculated using the modified Gail model. NKCA and LAKCA are determined by a chromium-51 release cytotoxicity assay using K562 target cells. Multiple regressions will be used to test the magnitude of impact of (objective vs. subjective) breast cancer risk on NKCA and LAKCA (Aim 1) and a mediating and moderating role of psychological distress and optimism on the subjective breast cancer risk-immune relationships (Aim 2 & 3). Pearson's correlation coefficients will be used to test the relationship between objective and subjective breast cancer risk (Aim 4).

Discussion/Relevance: Findings of this study will advance the understanding of psychological-immune interactions in healthy women with varying degrees of breast cancer risk, which may contribute to developing better preventive strategies against breast cancer for general population in the future.