

Determinants of Mammography Screening Participation in Female Adult Survivors of Childhood Cancer

Background: Female childhood cancer survivors who have received mantle, abdominal, or craniospinal radiation face an increased risk for developing breast cancer. Despite this risk, the majority of female survivors do not adhere to the recommended mammography screening schedule and are less likely than female adult cancer survivors to report ever having had a mammogram. We sought to identify disease, treatment, intrapersonal, and provider factors that influence childhood cancer survivors' adherence to recommended mammography screening.

Methods: A broad-based health behavior model informed structural equation modeling of data derived from baseline, follow-up and ancillary surveys within the Childhood Cancer Survivors' Study. Female childhood cancer survivors (N=535), [mean current age = 30.92y, mean age at diagnosis = 9.25y mean years after diagnosis = 21.79y] comprised the study sample.

Results: A well-fitting model ($\chi^2=297.67$, $df = 286$, $P = 0.31$; CFI = 0.995, TLI = 0.993; RMSEA = 0.011; 90% CI = 0.00–0.024; Probability RMSEA $\leq .05 = 1.000$) explained 43% percent of the variance in mammogram recency. Survivors who were most likely to follow the recommended mammogram schedule were directly influenced by: cancer treatment exposure to mantle radiation ($P = 0.01$), less intrinsic motivation ($P = 0.01$), positive affect ($P = 0.05$), oncology clinic visits within the last 2 years ($P = 0.01$), discussion of cancer with a physician ($P = 0.001$), perceptions of more severe late effects ($P = 0.05$), age ≥ 40 years ($P \leq 0.001$), and having received a print media intervention detailing breast cancer risks and recommended follow-up strategies ($P = 0.05$).

Conclusions: Knowledge of treatment exposures, motivation, affect, and provider influences are potential modifiable targets for intervention to support recommended mammography screening in childhood cancer survivors at risk. Motivation for mammography screening likely will be enhanced through: a) tailoring personal risk information to health concerns, affect, and readiness for follow-up; b) providing personalized printed summaries of treatment exposures and recommended screening.