

Title: PREDICTORS OF INDEPENDENT LIVING AFTER CHILDHOOD CANCER: A REPORT FROM THE CHILDHOOD CANCER SURVIVOR STUDY

Authors: Alicia Kunin-Batson¹, Nina Kadan-Lottick², Liang Zh³, Cheryl Cox³, Veronica Bordes¹, Deo Kumar Srivastava³, Lonnie Zeltzer⁴, Leslie L. Robison³, Kevin R. Krull³

Purpose: With increased success of treatments for pediatric cancers, attention has focused on functional outcomes of survivors. This study examines factors that predict independent living in adult survivors of childhood cancer.

Methods: Adult survivors of childhood cancers (n= 6047) and siblings (n= 2326), all of whom were ≥ 25 years of age, completed a long-term follow-up questionnaire that assessed adaptive, neurocognitive, and psychological functioning, as well as demographic information and health status. Survivors were a mean age of 34.2 years (range 25-54) at study. Logistic regression models (expressed as odds ratio [OR] and 95% confidence interval [CI]) and structural equation modeling (SEM) were used to predict risk of dependent living based on demographic, neuropsychological, physical functioning and treatment variables.

Results: Compared to siblings, survivors were more than twice as likely to live dependently (OR=2.07, 95% CI 1.77-2.42), adjusted for age, gender and race. In multivariate logistic regression analyses, risk factors for dependent living among survivors included: racial/ethnic minority status (OR=2.60, 95% CI 2.02-3.36), cranial radiation therapy in dose dependent fashion ($>0 - \leq 24$ Gy OR=1.35, 95% CI 1.11-1.65; >24 Gy OR=3.63, 95% CI 2.82-4.68), attention and processing speed problems (OR=1.91, 95% CI 1.57-2.33), depression (OR=1.61, 95% CI 1.23-2.10), poor physical functioning (OR=1.96, 95% CI 1.53-2.50), and use of neuroleptic, anticonvulsant, or psychostimulant medication (OR=3.05, 95% CI 2.30-4.03). Structural equation modeling suggested that neurocognitive functioning influenced dependent living through mental health (EST./S.E. = -12.03, $P \leq .001$), depression (EST./S.E. = 14.97, $P \leq .001$), somatization (EST./S.E. = 5.70, $P \leq .001$), and use of neurologically-directed medication (EST./S.E. = 8.92, $P \leq .001$).

Conclusion: Adult survivors of childhood cancer are less likely to live independently compared to siblings. Specific neurocognitive, medical and psychological late effects are strongly associated with extended dependency in adulthood. Findings are discussed in terms of reducing barriers to independent living and developing interventions to promote independence.