

SOCIAL ADJUSTMENT IN ADOLESCENT SURVIVORS OF PEDIATRIC CNS TUMORS: A REPORT FROM THE CHILDHOOD CANCER SURVIVOR STUDY

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Background/Objectives: Pediatric CNS tumor survivors experience problems with social adjustment. We examined tumor, treatment and demographic factors associated with social adjustment deficits in adolescent long-term survivors of pediatric CNS tumors.

Design/Methods: Survivors of CNS tumors (n=665; 53.8% male; median [range] 15.0 [12.0-17.0] years old; 12.1 [8.0-17.7] years from diagnosis; 51.7% treated with cranial radiation) were compared to solid tumor survivors (neuroblastoma, Wilms tumor; n=1377; 50.4% male; 15.0 [12.0-17.0] years old; 13.2 [8.3-17.9] years from diagnosis) and sibling controls (n=726; 52.2% male; 15.0 [12.0-17.0] years old). Social adjustment was measured with items examining the quality and quantity of peer interactions from the Behavior Problems Inventory. Latent profile analysis identified social adjustment classes. Multinomial logistic regression determined predictors of class membership. Path analysis was used to determine whether social problems were mediated by sensory, physical and/or cognitive limitations.

Results: A well-adjusted class was identified in 53.4% of CNS tumor survivors, 86.2% of solid tumor survivors and 91.1% of siblings. Nearly seven times as many CNS tumor survivors (15.3%) reported zero friends compared to solid tumor survivors (2.9%) and siblings (2.3%). More CNS tumor survivors reported interacting with friends less than once per week (41.0%) compared to solid tumor survivors (13.6%) and siblings (8.7%). Among CNS survivors, cranial radiation dose was associated with poor quality (OR=1.16 per 10Gy; 95%CI 1.08-1.25) and limited interactions (OR=1.14; 95%CI 1.04-1.25), adjusting for age, sex and age at diagnosis. Limitation in cognitive function was a stronger mediator of number of friends ($\beta=0.380$, $p<0.001$) and time with friends ($\beta=0.266$, $p<0.001$) compared to sensory ($\beta=0.110$, $p<0.047$; $\beta=0.136$, $p<0.026$) or physical ($\beta=0.096$, $p<0.007$; $\beta=0.123$, $p<0.002$) limitations.

Conclusion: Cranial radiation therapy and cognitive impairment are associated with increased risk of social adjustment problems among CNS tumor survivors. Interventions to facilitate development of cognitive and social skills in this high-risk population are needed.

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