

Racial/Ethnic Differences in Neurocognitive, Emotional and Quality of Life Outcomes in Adult Survivors of Childhood Cancer: A Report from the Childhood Cancer Survivor Study (CCSS)

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Background: Survivors are at risk of impaired neurocognitive/emotional functioning and health related quality of life (HRQOL). The impact of CNS-directed therapy by race/ethnicity has not been reported.

Methods: Analyses included 12,257 ≥5-yr survivors of childhood cancer: median age at follow-up 31.2 yrs (range 16.1-54.1), 490 non-Hispanic Black (NHB), 725 Hispanic (H) survivors and 2994 siblings. Self-reported neurocognitive (working memory, task efficiency, emotional regulation, organization), emotional (depression, anxiety, somatization) and HRQOL (components assess physical, emotional and mental health, social functioning, pain and vitality) outcomes were evaluated using the CCSS Neurocognitive Questionnaire, BSI-18 and SF-36. Impact of cranial radiotherapy (CRT) was investigated using general linear models adjusted for clinical/demographic factors to estimate differences in mean scores between survivors and siblings within racial/ethnic stratum. The magnitude of differences for NHBs and Hs were compared to those of non-Hispanic Whites (NHW).

Results: Among non-CRT exposed survivors, no significant differences were observed between NHB, H and NHW for all neurocognitive, emotional, and HRQOL outcomes. Among CRT exposed survivors, while there were no significant differences for neurocognitive outcomes by race/ethnicity, mean scores for depression differed between H survivors vs siblings (49.9. vs 46.5, $p<0.001$), which was greater than NHW survivors vs siblings (49.2 vs. 47.7, $p<0.001$; p comparing differences in means between H and NHW =0.047). Survivor-sibling differences in mean HRQOL scores for social functioning for NHB (-7.70, $p=0.02$) and H (-6.27, $p=0.01$) survivors exposed to CRT were greater than for NHW (-1.48).

Conclusions: After CRT exposure, there were no differential effects on neurocognitive outcomes based on race/ethnicity. However, minority survivors who received CRT had increased risk for depression and reduced social function. The role of environmental and socio-economic factors in helping survivors recover from CRT exposure should now be investigated.