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Chronic Pain and Disability in Long-Term Survivors of Childhood Cancer: A Report from the Childhood Cancer Survivor Study (CCSS).

Cynthia W. Karlson, Nicole M Alberts, Wei Liu, Tara M. Brinkman, Robert Annett, Daniel A. Mulrooney, Fiona Schulte, Wendy Leisenring, Todd M. Gibson, Rebecca M. Howell, Deokumar Srivastava, Kevin C. Oeffinger, Gregory T. Armstrong, Lonnie K. Zeltzer, Kevin R. Krull; University of Mississippi Medical Center, Jackson, MS; St. Jude Children's Research Hospital, Memphis, TN; Alberta Health Services, Calgary, CA; Fred Hutchinson Cancer Research Center, Seattle, WA; The University of Texas MD Anderson Cancer Center, Houston, TX; Memorial Sloan Kettering Cancer Center, New York, NY; UCLA David Geffen School of Medcn, Los Angeles, CA

Background: Chronic pain has not been well characterized in survivors of pediatric cancer. The current study is the first to examine prevalence and predictors of chronic pain and pain-related disability in this population. Methods: Participants included 10,012 adult survivors (48.7% female; median age 31 years; M time since diagnosis 15.3 years) from the CCSS. Participants completed the Short-Form 36 and Brief Symptom Inventory-18 on two occasions between 2002 and 2011. Chronic pain was defined as self-report of moderate to severe pain at both time points. Pain-related disability was defined as pain that interferes with normal work at either time point. Covariates included sex, age, time since diagnosis, treatment, and grade 3-4 chronic health conditions. Multinomial logistic regression estimated relative risk (RR) and 95% confidence intervals (CI) for predictors. Structural equation models examined associations between pain, depression, anxiety, and vitality. Results: 29% of survivors reported moderate to severe pain at either time point, 32% reported moderate to severe pain-related disability, and 10% reported chronic pain. Compared to survivors of leukemia, survivors of sarcoma (RR 1.33, CI 1.32-1.34) and solid tumors (RR 1.04, CI 1.03-1.06) reported more chronic pain. Survivors with a history of amputation (RR 1.54, CI 1.52-1.56) and, in separate models, those with chronic health conditions (RR 1.57, CI 1.56-1.59) were more likely to report chronic pain. Survivors with symptoms of depression (RR 1.11; CI 1.09-1.12) and anxiety (RR 1.25; CI 1.24-1.27) were also more likely to report chronic pain. Similar patterns were observed for pain-related disability. Controlling for demographics, treatment, and chronic health conditions, vitality mediated the effects of depression and anxiety on chronic pain (RMSEA 0.011) and pain-related disability (RMSEA 0.000). Conclusions: Adult survivors of childhood cancer experience chronic pain and pain-related disability that is associated with amputation, chronic health conditions, depression, anxiety, and poor vitality. Increased screening and comprehensive treatment of pain is warranted, particularly for these risk factors.