Title: INTOLERANCE OF UNCERTAINTY IN ADULT SURVIVORS OF CHILDHOOD CANCER: A REPORT FROM THE CHILDHOOD CANCER SURVIVOR STUDY

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Background and aims: Intolerance of uncertainty (IU) is a dispositional tendency to perceive uncertainty as unacceptable or threatening. Despite the uncertain nature of childhood cancer survivorship, no studies have examined IU and its associated risk factors in this population.

Methods: A representative sample of 228 adult survivors enrolled in the Childhood Cancer Survivor Study (50.4% female; median[range] age 40[22-64] years; 32.8 years since diagnosis) completed self-report measures of IU (Intolerance of Uncertainty Scale-Short Form; IUS-12), clinically significant depression (Patient Health Questionnaire 8-Item; ≥10), clinically significant anxiety (Generalized Anxiety Disorder 7-Item; ≥10), chronic pain (2 items assessing pain lasting ≥3 months), and perceived poor health status (1-item yes/no). Total scores on the IUS-12 range from 12 to 60, with higher scores indicating greater IU. Grade 2-4 chronic health conditions were used, based on CTCAE v4.03. Linear regression models adjusted for sex, race, age at diagnosis, and current age estimated mean effects (B) with 95% confidence intervals (CI) for associations of key risk factors with IU.

Results: The mean level of IU among survivors was 26.2 (95%CI[24.9-27.5]). Higher IU was associated with female sex (B [95% CI]; 2.7 [0.1-5.3]), unemployment (5.2[1.8-8.6]), chronic pain (5.8[3.3-8.4]), clinically significant depression (8.5[5.8-11.2]) and anxiety (13.4[10.9-15.9]), cardiovascular conditions (5.1[2.3-8.0]), neurological conditions (4.8[1.1-8.4]), and poor health status (8.8[5.4-12.2]), but not diagnostic group or cancer treatment factors.

Conclusions: Overall, levels of IU were comparable to those observed in non-clinical samples. The current findings also suggest associations between IU and distress observed in the general population occur among childhood cancer survivors also, while highlighting factors potentially specific to the experience of elevated IU among survivors, including chronic pain, poor health status, and chronic conditions. Further research is needed to elucidate the direction of the association between IU and depression and anxiety, which will help inform psychosocial screening and intervention in survivors.