Motivating behavior change in adult survivors of childhood cancer: A randomized controlled trial (RCT) from the Childhood Cancer Survivor Study (CCSS)

Cheryl Cox, RN, PhD 1, Wendy Leisenring, ScD 2, Kayla Stratton, MS 3, Brenda Steen, MSN 4, Susan Ogg, MSN 5, Nina Tinner, MA 1, Leslie L. Robison, PhD 6, Melissa M. Hudson, MD 7. (1) Epidemiology, Cancer Prevention and Control, St. Jude Children's Research Hospital, 262 Danny Thomas Place, Memphis, TN 38105. (2) Clinical Statistics, Fred Hutchinson Cancer Research Center, 1100 Fairview Ave N. D5-360, Seattle, WA 98103. (3) Clinical Statistics, Fred Hutchinson Cancer Research Center, 1100 Fairview Ave N. D5-360, Seattle, WA 98103. (4) Anesthesiology, St. Jude Children's Research Hospital, 262 Danny Thomas Place, Memphis, TN 38105. (5) Epidemiology Cancer Prevention and Control, St. Jude Children's Research Hospital, 262 Danny Thomas Place, Memphis, TN 38105. (6) Epidemiology, Cancer Prevention and Control, St. Jude Children's Research Hospital, 262 Danny Thomas Place, S-6014, Memphis, TN 38105-2794. (7) Oncology, St. Jude Children's Research Hospital, 262 Danny Thomas Place, S-6014, Memphis, TN 38105-2794.

BACKGROUND: A substantial proportion of adult pediatric cancer survivors at risk of adverse cardiovascular outcomes do not participate in recommended cardiac screening. This RCT tested the efficacy of a conceptually-derived nursing intervention (INT) in modifying at-risk survivors' motivation for completing a left ventricular function assessment (LVFA).

METHODS: CCSS participants (age > 25 years) who received cardiotoxic therapy and reported no cardiac screening in >5 years were eligible. Participants (n=472, mean age 40.1, range 25.0-59.0; 53.3% females) were randomized to: standard care (SC) (personalized cancer treatment summary, lifestyle and cardiac health screening recommendations (n=234)) or INT (SC plus two nurse-tailored telephone sessions (n=238)). At 1 year, motivation measures were compared using adjusted linear models; LVFA completion was validated by medical records and compared between the two arms (adjusted relative risks (RR), 95% confidence intervals (CI)).

RESULTS: With 411 participants completing the study, the two groups did not differ by demographic or clinical characteristics. INT survivors scored higher than SC survivors on targeted motivation measures: autonomous regulation (p=0.001), effort (p<0.0001), competence (p=0.04), and screening value/utility (p=0.02). Among the INT survivors, 107/205 (52.2%) completed screening compared to 46/206 (22.3%) SC survivors (p<0.0001). With adjustment for gender, age (<30, 30+) and Children's Oncology Group recommended screening intervals (annual, 2 years, 5 years), INT survivors were > two times more likely than SC survivors to obtain an LVFA (RR 2.31; 95% CI: 1.74-3.07).

CONCLUSIONS: Consistent with conceptual premises, risk behavior can be modified if the intervention addresses motivation for change and the behavioral outcome simultaneously.