

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

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**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.