

Title: Physical Activity Influences in Survivors of Pediatric Cancer

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Background: Physical activity (PA) in survivors of pediatric cancer is essential in reducing mortality and morbidity. Despite this, limited data on strategies to enhance PA among survivors exists. Physical therapists are integral to maintaining mobility among patients with cancer, yet less than 24% of patients have access. The role of healthcare providers, family, and community members in promoting PA among survivors is unclear. This study examined the perceived influence of these individuals on survivors' PA level during treatment, and identified facilitators and barriers to PA in survivorship.

Method: This post-test only with non-equivalent groups design included a cohort of 42 survivors of non-CNS cancer > 5 years post-cancer treatment. The cohort was separated into two groups by exposure to physical therapy (PT) during cancer treatment. Participants answered questions about healthcare professionals and family/community influence on PA during treatment, Patient-Reported Outcome Measurement Information System PA items, and PA facilitators and barriers. Analysis included descriptive statistics, chi-square tests to compare groups (PT vs. non-PT), and content analysis to identify PA facilitators and barriers.

Results: Of survivors who received PT during treatment, 100% reported that physical therapists influenced PA levels. Oncologists influenced PA in 59% of survivors in the PT group and 27% in the non-PT group ($p=0.09$). A nurse's influence on survivor PA was significantly greater in the PT group (52% vs. 7%, $p=.01$). Within a survivor's social environment, family had the largest influence on PA level (81% PT vs. 53% non-PT, $p=0.11$), with friends being a distant secondary influence (41% PT vs 20% non-PT, $p=0.31$). At a median 13 years post-treatment, more participants in the PT group versus the non-PT group reported >10 minutes of PA >3 days per week (70% vs. 40%, $p=0.11$). Facilitators of PA included sports participation, exercising with family and friends, and outdoor activity. Physical impairments such as pain and fatigue were the most common barriers to PA.

Discussion: Multiple individuals influence survivors' PA. When involved, physical therapists are specifically influential on PA, in addition to oncologists and nurses. Family is a critical influence.

Collaboration between healthcare disciplines and caregivers has the potential to increase PA participation. Strategies to mitigate pain and fatigue among survivors should be prioritized to enhance PA.