Web-Based Intervention Helps Kids Stay Physically Active After Cancer Treatment

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Contact
Alise Fisher
571-483-1354
alise.fisher@asco.org

Expert Perspective

“This study shows that online tools can be an excellent way to motivate young people with cancer to be more active. We know that exercise brings a wide range of benefits. It improves heart health, reduces fatigue, and helps control weight – all of which are important after cancer treatment,” said ASCO Expert Timothy Gilligan, MD, MSc, FASCO, moderator of today’s presscast.

ALEXANDRIA, Va. – A pilot study of cancer survivors ages 11-15 suggests that a web-based, interactive intervention that provides rewards for exercising can motivate kids to stay physically active. Moderate to vigorous physical activity increased by an average of nearly 5 minutes a week in the group that used the intervention and decreased by an average of over 24 minutes in the control group. These findings will be presented at the upcoming 2018 Cancer Survivorship Symposium in Orlando, Florida.

“Compared to the general population, childhood cancer survivors have an increased risk for obesity and metabolic syndrome, conditions that can lead to heart disease, stroke, and diabetes, so it is really important that they are physically active,” said lead study author Carrie R. Howell, PhD, a clinical research scientist at St. Jude Children’s Research Hospital in Memphis, Tennessee. “By intervening in this young age group, we hope to help kids develop healthy exercise habits for life.”

About the Study
Researchers randomly assigned 97 survivors ages 11 to 15 who were no longer receiving cancer treatment and were physically active less than 60 minutes a day to a web-based physical activity intervention or to a control group. The study was open to children with any type of cancer; about 25% had acute lymphoblastic leukemia (ALL). Both groups received an educational handout with information about the importance of physical activity and examples of activities, along with a wearable activity monitor.

The intervention group also had access to an interactive, age-appropriate website. On at least a weekly basis, participants would connect their monitor to a computer and log their activity through the website. Upon achieving certain thresholds of activity, they received rewards, such as T-shirts and gift cards by mail. At the beginning and at the end of the study, participants visited St. Jude for an assessment of their physical fitness (strength, flexibility, and endurance) and neurocognitive measures (attention, memory), as well as health-related quality of life (assessed using the Pediatric Quality of Life Inventory questionnaire).

**Key Findings**

A total of 78 participants – 53 in the intervention group and 25 in the control group – completed the 24-week program. Time spent performing moderate-to-vigorous physical activity increased by an average of 4.7 minutes per week in the intervention group and decreased by an average of 24.3 minutes per week in the control group. In the intervention group, researchers also noted improvements in hand grip strength (from an average of 19.9 kg to 21.0 kg), number of push-ups (from an average of 15 to 18) and sit-ups completed (from an average of 11 to 14), verbal fluency and health-related quality of life (from score of 74.2 to 78.0 – higher number indicates better quality of life), but no changes in any of those measures were seen in the control group.

“In this age group, it is common to see a decrease in physical activity over time, even among healthy kids. Therefore, we are encouraged that our intervention was successful at maintaining physical activity levels, but a longer program may be needed to create lasting exercise habits,” said Dr. Howell.

**Next Steps**
Based on this pilot study, the researchers designed a larger clinical trial of a web-based physical activity intervention. The trial, ALTE1631, which is funded by the National Institutes for Health (NIH), aims to enroll 384 survivors of childhood ALL at institutions across the United States. The intervention will last one year, with follow-up at 18 months.

Further down the line, the researchers also plan to explore the relationship between physical activity and cognition. Many childhood cancer survivors have treatment-related cognitive problems, and there is preliminary evidence suggesting that exercise may improve cognitive function.

The study was supported by grants from the National Cancer Institute Cancer Center Core Grant CA 21765 and by the American Lebanese Syrian Associated Charities; devices, website access, and study support provided by HopeLab.

View the full abstract.

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2018 Cancer Survivorship Symposium News Planning Team:

Lewis E. Foxhall, MD, FAAP, American Academy of Family Physicians (AAFP); Carol A Rosenberg, MD, FACP, American College of Physicians (ACP); and Timothy D. Gilligan, MD, MSc, FASCO, American Society of Clinical Oncology (ASCO).

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