Survivor Fitness

An exercise program for young survivors and patients with cancer

Jose A. Acevedo, MS Ed., CTRS, CPT, RM

Children, teenagers, and young adults who have survived courses of treatment for cancer or blood disorders often have issues rejoining their communities. Although the American Institute for Cancer Research (2008) recommends a physically active lifestyle, finding appropriate exercise alternatives that cater to their specific needs can be challenging. Often, children, teenagers, and young adults with cancer have been medically excused from participation in physical education at school. Some are placed on the sidelines in their gym classes and discouraged from participating by teachers who are not experienced in adaptive physical fitness. The Children’s Oncology Group ([COG], 2016) states that many factors influence a survivor’s ability to be physically active; however, childhood cancer and treatment should not be barriers to staying physically active. To address this need, a pilot fitness program, Move4Fun/Move4Fitness (M4F/M4F), was developed at an urban cancer center in New York.

**Move4Fun/Move4Fitness Purpose**

M4F/M4F was created to meet the physical activity needs of teenagers and young adults with cancer and survivors of cancer. The author developed this program while working as a recreation therapist and wellness program coordinator in pediatric oncology. During the monthly teen and young adult support groups, several of the participants requested exercise tips. Many of them had had fitness club memberships but did not find going to the gym enjoyable for various reasons. The primary barrier to participation among participants revolved around poor body image and self-esteem. Many adults find it difficult to join a health club and see the results they want without additional guidance. The high-tech equipment and fit people at the gym can be daunting to anyone. These teens and young adults also have body-image issues related to visible surgical scars, prosthetic limbs, bald patches of skin that may never regrow hair, and weight gain from medication, all of which may discourage them from exercising in such an environment.

In addition, the patients and survivors who participate in this program are inner-city teenagers going through chemotherapy in an age when cyberbullying is the norm. One young woman from Pakistan named J.H. not only had to adapt to the hip-hop–based teenage culture in New York City but to a society in which women were allowed to pursue higher education at school. Some are placed on the sidelines in their gym classes and discouraged from participating by teachers who are not experienced in adaptive physical fitness. The Children’s Oncology Group ([COG], 2016) states that many factors influence a survivor’s ability to be physically active; however, childhood cancer and treatment should not be barriers to staying physically active. To address this need, a pilot fitness program, Move4Fun/Move4Fitness (M4F/M4F), was developed at an urban cancer center in New York.

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Program Selection Criteria and Design

M4F/M4F began as a 12-week basic fitness program for 10 participants aged 16–24 years. Seven of the participants were off-treatment cancer survivors, two participants regularly received blood transfusions to manage sickle-cell anemia, and one was receiving maintenance chemotherapy. Each participant received medical clearance from his or her oncologist to participate and was assessed by a physical therapy team prior to beginning the program. Recommendations on movements or exercises to avoid during the exercise sessions were individually tailored based on these assessments.

The selection criteria excluded participants who received chemotherapies containing anthracyclines. According to COG (2016), a heart affected by anthracyclines and chest radiation may not be able to handle the stress of certain exercises that dramatically increase heart rate, blood pressure, or volume of blood in the circulatory system. Cardiovascular exercise is usually good for the heart, but certain exercises can put too much stress on the heart. To err on the side of caution and safety, survivors treated with anthracyclines or chest radiation therapy should be medically assessed prior to commencing an exercise or fitness program.

Regular exercise increases bone mass, strengthens bones, and helps maintain or improve muscle strength, coordination, and balance. This improvement in functional strength translates to everyday activities of daily living by reducing the risk of falls and fractures from falling. CancerCare (2014) believes that a healthy diet and exercise are important in maintaining good bone health. Although the current author incorporated movements in the exercises to help increase bone density, some patients were instructed to avoid bounding exercises that might add additional stress to their bones. For example, a participant who had limb salvage to treat osteosarcoma was instructed to avoid bounding and jumping exercises.

Participants in the program met two days per week for 12 weeks, and each session lasted about 75 minutes. On day 1, week 6, and week 12, physical agility and body measurements were assessed. The physical agility component consisted of the maximum number of push-ups (modified, box, or standard) and crunches or sit-ups in one minute, and toe-touches to measure flexibility. The voluntary body measurements consisted of height, weight, waist circumference, hip circumference, and body mass index (BMI). Two male participants also requested bicep measurements.

Each session began with a 10-minute warm-up, consisting of stretching and movements to increase the heart rate (e.g., hopping in place, jogging around the room). The exercises in each session included primarily calisthenics (i.e., push-ups, squats, and lunges), kickboxing, and the use of resistance bands and light dumbbells. M4F/M4F was designed to teach the participants how they could continue this exercise program on their own with limited space and equipment, that is, without having to go to a gym.

As with most things in life, consistency is key in working toward a particular result. A few participants were not able to attend all the sessions, which affected their overall results. Many of them held one another accountable, often calling or texting one another to remind them to attend the program that day. The most consistent participant, J.H., missed only 1 of 24 sessions and showed the biggest improvement in almost every measured area. She lost 10 pounds and 3 inches around her waist and hips, and her BMI decreased from 27.8 to 25.5. One of the biggest improvements J.H. experienced could not be measured with a scale or measuring tape. Shortly after completing the program, she re-enrolled in college; she had dropped out two years before. Her consistency in fitness translated into consistency in the classroom as she completed an associate’s degree and then pursued a bachelor’s degree. Her example truly demonstrates how a physical change can emotionally and spiritually affect an individual for the better. She was able to translate her newly discovered self-confidence and inner drive she gained from challenging herself through exercise to challenging herself in everyday life.

Children’s Oncology Group Survivorship Guidelines

The COG (2016) guidelines recommend that children and adolescents engage in at least 60 minutes of moderate to vigorous physical activity (e.g., running, aerobics, heavy yard work) per day at least five days a week. Epidemiological studies during the past several decades have shown that physical activity plays a major role in cancer prevention. Information presented by the American Institute for Cancer Research (2008) has revealed that, in recent years, scientists have begun to better understand how exercise may help prevent cancer, reduce recurrence, and improve quality of life for cancer survivors—all independent of weight control. According to Keats and Culos-Reed (2008), lifestyle interventions, such as physical activity, hold great promise in reducing comorbid disease and enhancing overall well-being and quality of life. Studies have determined that several factors are involved in decreasing the number of survivors in this age range. Although little evidence determines the
reasons for this age group’s lack of long-term survivorship, preliminary data point to sedentary lifestyles, lack of medical insurance, and a sense of invincibility.

Physical activity is an important component in survivor health, but lack of socialization related to exclusion can negatively affect a child or teenager’s self-esteem. Teasing about clothing or physical appearance is common in adolescence. However, through the M4F/M4F program, participants experience physical transformations, as demonstrated through weight loss and building of muscle, but also transformations of self-confidence, learning that everyone has the ability to achieve success in any field through dedication, consistency, and determination.

**Conclusion**

Physical and emotional transformation often go hand in hand. The increased self-esteem and social bonds created in young adults through this program show how a sense of belonging and camaraderie during a critical time can change a person’s overall outlook on life.

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The author takes full responsibility for this content and did not receive honoraria or disclose any relevant financial relationships.

**REFERENCES**


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