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Implementing a Multidisciplinary Lifestyle Medicine Clinic for Cancer Survivorship

ABSTRACT

Background: Lifestyle medicine (LM) is increasingly recognized in cancer survivorship guidelines. The 6 LM pillars are physical activity, a predominantly plant diet, restorative sleep, stress management, avoiding risky substance use, and social connections. Through a multidisciplinary LM clinic in oncology, we describe 2 illustrative cases and the implications for broader implementation and dissemination of this clinic model.

Methods: In the multidisciplinary LM clinic in oncology, patients meet with an American College of Lifestyle Medicine (ACLM) board-certified physician or nurse practitioner, a registered dietitian, and, as needed, a clinical psychologist, a psychiatrist, an obesity medicine physician, a physical therapist, and/or a rehabilitation medicine physician.

Results: Patient 1 met with the physician, the registered dietitian, the psychologist, and an affiliated cancer center psychiatrist. Patient 2 met with the nurse practitioner and the registered dietitian. The 2 cases presented illustrate the diversity of LM pillars and strategies to increase health and well-being post cancer treatment.

Conclusion: This paper details the model of implementation of a novel oncology-focused multidisciplinary LM clinic and the clinical focuses of 2 diverse patients. The LM needs of cancer survivors seeking lifestyle consultation are growing, and awareness of the benefits of LM for this population can enhance the quality of life for patients who are survivors of cancer.

Keywords: lifestyle medicine, cancer, survivorship, clinical program, case studies

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There are currently over 18 million cancer survivors in the US, with this population projected to increase to 26 million by 2040.^{1,2} As the US population ages and cancer survival rates increase, there is a growing need to address the complex care needs of this population.² Cancer survivorship is often a time of heightened worry about ending treatment, fear of cancer recurrence, and concerns about the health consequences of treatment.³ Awareness of the critical importance of healthy lifestyle behaviors in the survivorship period has grown such that authoritative bodies such as the American Society of Clinical Oncology (ASCO), the American Cancer Society (ACS), the NCCN, the CDC, and the American College of Lifestyle Medicine (ACLM) now recommend incorporating lifestyle medicine (LM) education and practice into the continuum of cancer care.⁴⁻⁸ ACLM defines the field of LM as the “therapeutic use of evidence-based lifestyle interventions to treat and prevent lifestyle-related diseases in a clinical setting.”⁸ The 6 pillars of LM are physical activity, a plant-predominant diet, restorative sleep, stress management, avoidance of risky substances, and social connections, all of which are important components of cancer survivorship.^{7,9-13}

Guidance around each LM pillar for cancer survivors is as follows:

- 1. Physical activity:** Engage in 150 to 300 minutes per week of at least moderate-intensity, aerobic activity and incorporate strength training.⁵
- 2. Nutrition:** Eat a whole-food, predominantly plant diet, with a variety of fruits, vegetables, and whole grains, and limit consumption of red meats and processed meats.⁵
- 3. Sleep:** Focus on achieving quality, restorative sleep and implement strategies to address sleep disturbance and insomnia.¹⁴
- 4. Stress management:** Learn strategies such as eliciting the relaxation response and mindfulness-based stress reduction.^{10,11}
- 5. Avoidance of risky substances:** This includes tobacco, alcohol, and other substances.¹⁰
- 6. Social support:** Build and enhance social connections to improve outcomes for this population.¹⁵

Addressing these 6 pillars in the survivorship period can improve quality of life and physical functioning and, in many cases, reduce the risk of recurrence and the development of additional cancers.^{7,9-13}

Though awareness and access have grown, few clinics have been established to address the LM needs of people in cancer survivorship.¹⁶ Accordingly, our team of oncologists and supportive oncology clinicians developed a multidisciplinary LM clinic for cancer survivors. The development of this clinic, the first known of its kind within supportive oncology, has been previously documented.¹⁷ The present case studies and discussion are based on patients seen in the multidisciplinary longitudinal clinic within the past year (2023-2024).

Methods

The present multidisciplinary clinic is conducted within the cancer center of an academic medical center in a major US metropolitan area. The clinic operates virtually via Health Insurance Portability and Accountability Act-compliant Zoom. The structure has evolved since its launch in 2020 from a single-day, in-person consult clinic to an insurance-billed, electronic medical record-integrated longitudinal clinic.¹⁷ Patients can be referred through a member of their oncology care team or a primary care provider, or be self-referred. Patients can be anywhere in their cancer trajectory, and all types of cancer diagnoses are seen.

The first appointment is with the ACLM-certified physician or nurse practitioner. During this visit, a comprehensive medical history is taken and patients are screened for limitations on physical activity using the Physical Activity Readiness Questionnaire.^{4,17} The 6 pillars of LM are used as a foundational structure for the initial visits. Patients are encouraged to identify the topics within LM most important to them as a focus of the consultation (eg, exercise limitations or recommendations). Patients may follow up with the physician or nurse practitioner on a semiregular basis or as needed. Currently, there is no deadline or prescribed end point to the follow-up visits, although this may come about if clinic volume continues to increase.

Patients can then be referred to other members of the LM team or various programs or specialists in the hospital system as appropriate. Most commonly, patients are referred to an oncology-registered dietitian for a comprehensive nutrition assessment and personalized recommendations. Nutrition follow-up can be further scheduled if the patient has specific nutrition-related goals. Follow-ups are scheduled as needed following the initial nutrition consultation. If psychosocial concerns, stressors, or difficulty with behavior change planning are identified, a referral is placed to the clinical psychologist who sees patients for short-term cognitive/behavioral therapy (eg, 3-16 sessions). Additional referrals to obesity medicine, stress management groups, psychiatry, physiatry, and physical therapy are made as needed, based on the needs and goals identified in the visit. A 6-session virtual group visit program based on the 6 pillars of LM was developed by members of this team to offer ongoing education and skills for lifestyle education and behavior change skills. The virtual group visits offer a structured, longitudinal LM model to increase access for patients seeking more general LM support and education, as a separate resource, beyond the individual consultation visits. The curriculum for the group visits is based on the established PAVING The Path to Wellness curriculum,^{18,19} to which patients with breast cancer can also be referred. The groups are offered on a rolling basis, and participants are encouraged to attend all 6 visits.

This article will present 2 cases seen by members of our multidisciplinary team, demonstrating the range of lifestyle medicine interventions that can improve health and quality of life for survivors of diverse cancers.

CASE 1

Young man with diagnoses of seminoma, alcohol use disorder, obesity, neuropathy, OCD, and ADHD

LM specialists involved: LM physician, psychologist, dietitian, psychiatrist

Background: The patient is a 33-year-old, single, White man who lives alone, has a bachelor's degree, and works in the field of art/music production. He initially presented to a local emergency department (approximately 30 miles from our hospital: Mass General Brigham) but transferred due to needing specialty care unavailable at his community hospital. He ultimately presented to our hospital's emergency department with paraplegia and bladder/bowel incontinence and he was found on imaging to have evidence of spinal cord compression secondary to an epidural tumor at T10-12. The patient underwent a thorough workup and was diagnosed with stage IIIC seminoma. The patient proceeded with aggressive treatment for curative intent, with a left orchiectomy and 4 cycles of chemotherapy (bleomycin, etoposide, and cisplatin). Following the completion of therapy, he had no evidence of disease. He was subsequently referred to the multidisciplinary cancer center LM program to address further strategies to optimize his health and outcome.

Following an initial assessment with the team physician, who focused on the 6 pillars of LM outlined above, the patient revealed that he had alcohol use disorder, untreated attention-deficit/hyperactivity disorder (ADHD, inattentive type), and obsessive-compulsive disorder (OCD). His body mass index at the time of diagnosis was in the obese range and he described difficulty with healthy meal planning and regular exercise. After his LM consultation, he was referred to our team's psychologist and oncology-registered dietitian to address these health challenges. As he progressed through his recovery, he was able to better engage with healthy lifestyle medicine practices, including improving his dietary habits, losing weight, and increasing exercise, while remaining sober.

Pillars 1 and 2 of behavioral therapy: physical activity and nutrition. Following his cancer treatment, the patient was unable to engage in his preferred physical activities due to peripheral neuropathy in his feet. This symptom was reviewed by his oncology team. The neuropathy symptoms diminished over time with increased physical activity and no additional medical intervention. Using a cognitive behavioral therapy approach with the team's psychologist, he explored much about his cancer journey, including its impacts on his values of working vs having time to pursue his creative activities. Over time, he decided to cut back on his work hours, which allowed him to engage more in physical activity and healthy eating.

During the 1 year of monthly therapy sessions, specific, measurable, achievable, relevant, and time-bound (SMART) goals were set around his physical activity (eg, skateboarding, working at a physically demanding job, reducing sedentary time). During the later stages of his time in the clinic, he met with the team's registered dietitian. He was counseled about cutting back on processed and convenience foods and increasing fruits, vegetables, and water intake. He reported making all these changes without major barriers and was pleased with his progress.

Pillars 3 and 4 of behavioral therapy: avoiding risky substances and stress reduction. Regarding his alcohol use, at initial intake, he was drinking 4 to 6 beers per night, often socially, to help fuel his music/art production and to mitigate underlying anxiety symptoms. He had quit smoking cannabis during his cancer diagnosis but continued to use cannabis edibles several nights per week. He felt that alcohol use was impacting his sleep, weight, motivation, and cognition. Further, he came to the clinic with diagnoses of OCD and ADHD, neither of which was being treated with medications or therapy at the time. Therapy began to focus on the benefits of abstaining from substance use from a motivational interviewing standpoint, as well as considerations for engaging with psychiatry for medication management of his mental health conditions. After 4 months of therapy, he was amenable to speaking with our cancer center psychiatrist. She helped him start an anxiolytic and a stimulant, which are still being used to excellent effect.

Pillars 5 and 6: sleep and social connections. Though these were not primary areas of concern for this patient, these topics were discussed during therapy. His sleep was disrupted because of his alcohol use and he reported difficulty waking up for work. Upon abstaining from alcohol, his sleep improved dramatically, impacting his energy and work functioning. He has strong family support and a large circle of friends; however, his social life largely surrounded drinking alcohol. Upon his sobriety, he has been able to uncouple socializing from drinking.

Outcomes: The patient has been abstinent from alcohol for the past 7 months, with appreciable improvement in sleep and energy and without experiencing cravings (new diagnosis: alcohol use disorder, mild to moderate, in early remission). He minimizes socialization built around alcohol and finds intoxication undesirable to be around. He continues to use cannabis edibles several nights per week. He continues to find satisfaction with his consolidated part-time work hours, with improved financial and mental (stress) outcomes, and he pursues his art and music with great motivation. He has lost 50 lb since abstaining from alcohol, which he attributes to reduced fluid retention, his adoption of an active lifestyle, and decreased intake of processed foods. His OCD symptoms are greatly reduced, to the point of resolution, and he can find meaning and direction in his work and creative activities: "I wake up looking forward to the day."

CASE 2

Middle-aged female survivor of breast cancer and, with impaired lifestyle health behaviors

LM specialists involved: LM nurse practitioner, dietitian, physical therapist

Background: This patient is a single, 46-year-old, White woman who is single, has her master's degree, and works doing freelance work, with a prior history of localized melanoma and a recent diagnosis of early-stage estrogen receptor–positive, HER2-positive invasive ductal carcinoma of the breast. She also carries a *PALB2* mutation. The patient underwent lumpectomy followed by adjuvant chemotherapy with paclitaxel plus trastuzumab followed by radiation, and she then completed a full year of trastuzumab therapy. She was prescribed adjuvant endocrine therapy with tamoxifen.

At the time of her breast cancer diagnosis, she noted work-related stress: She was finishing a book manuscript and the time required to do so led to a reduction in her self-care practices, which included regular exercise (eg, marathon training) and an overall healthy diet. To save time, she ordered takeout food 3 days a week, skipped meals, worked late, slept less, decreased her physical activity, and experienced increased stress. Her diagnosis of breast cancer and subsequent treatment added to her stress levels and she also experienced fatigue, which further stalled her return to her healthy lifestyle behaviors. Her oncology social worker referred her to the multidisciplinary cancer center LM program to help her learn strategies to aid in her recovery, and provide a comprehensive discussion about healthy lifestyle behaviors.

In her initial visit, she met with an oncology advanced practice provider (APP) who is ACLM certified as an LM practitioner. At the time of the visit, the patient had been undergoing radiation therapy but had begun to feel better after completion of adjuvant chemotherapy and had been taking some steps to improve her health habits. The LM plan included goal setting in each of the 6 LM pillars.

Pillars 1 and 2: physical activity and nutrition. The patient reported starting to increase her exercise activities, though she noted some discomfort and tightness in the shoulder and chest wall likely related to her surgery. The LM APP referred the patient to physical therapy to address postsurgical pain and tightness. The ACS exercise guidelines for survivors of cancer were discussed. She set an exercise goal to build up to and maintain a weekly exercise regimen of at least 3 days of moderate to vigorous physical activity per week and to return to a weekly yoga class. She was also referred to an oncology-registered dietitian for a comprehensive nutrition evaluation and counseling. They worked together to help her learn how

to prepare healthy meals and resume a more regular eating pattern that suited her energy and nutrient needs.

Pillars 3 and 4: avoiding risky substances and stress reduction. This patient reported a history of depression, but her mood was stable at the time she was seen in the clinic. She was followed by an outside therapist and an oncology social worker. She chose to incorporate short meditation and breathing practices into her daily routine to further reduce stress. She reported rare alcohol use, no tobacco use, and occasional cannabidiol (CBD) use. Given the questions she had about CBD, she was referred to a cannabis therapeutics physician to further explore the safety and use of CBD/cannabis for symptom management.

Pillars 5 and 6: sleep and social connections. The patient had begun taking steps to improve sleep hygiene practices to reduce the use of cannabis as a sleep aid. She reported difficulty “sometimes” falling asleep but did not meet the criteria for insomnia. She aimed to return to her previously effective sleep hygiene regimen with a goal to reduce screen use at bedtime. For social support, she reported close friendships, though her family did not live close by. She acknowledged some challenges maintaining certain friendships while undergoing treatment but overall, noted she was navigating this well with helpful input from her oncology social worker. This pillar was not a focus of her work in the LM clinic.

Outcomes: Over time, the patient set a goal to resume distance running. To reinforce her knowledge about the importance of a healthy lifestyle after cancer, motivation, and peer support, she was referred to the LM Group Visit Program and completed all 6 shared medical visits. Fifteen months after her initial LM consultation and completion of the LM Group Visit Program, she has resumed running 3 days per week without pain, has improved and maintained healthy sleep habits, and is practicing stress reduction with meditation on most days. She has transitioned to a whole-food, plant-based diet and plans to train for another marathon within the next year. In reflection, she noted the power of the diversity of LM interventions making the biggest impact. She reflected on her improved well-being from a holistic perspective: “Cancer is a complicated web of factors, and you can’t sharp-shoot [1 single pillar of LM] to mitigate your risk.”

Discussion

The 2 patient cases presented here demonstrate the benefits of incorporating broad and diverse LM tools in oncology supportive care. Both patients benefited from a multidisciplinary approach with a focus on education about the 6 pillars of LM and coaching to help them with behavior change. Case 1 focused on a 33-year-old man with stage IIIC seminoma. At the conclusion of his aggressive treatment, he had no evidence of disease. However, he had numerous other medical issues that needed to be addressed in the survivorship phase of his care to reduce his risk of future health complications. His referral to the LM

clinic enabled him to access a multidisciplinary team that offered expertise in behavioral health so he could address his alcohol use disorder, weight, neuropathy, OCD, and ADHD.

Case 2 focused on a 46-year-old woman with a history of early-stage, estrogen receptor–positive, HER2-positive breast cancer and localized melanoma. Due to the demands of treatment for her breast cancer, and other stressors, she had moved away from her prior commitment to a healthy diet and regular physical activity, and she noted severe fatigue and difficulty readopting healthy lifestyle behaviors. Her referral to the LM clinic enabled her to access a different scope of the multidisciplinary team, which included expertise in nutrition and physical therapy, as well as the LM Group Visit Program, so she could develop her own SMART goals and improve her health behaviors.

These case studies illustrate the benefits of enhancing care for cancer survivors by incorporating multiple tools from LM. Both patients derived great benefits from an initial individualized assessment in our LM clinic and were referred to programs and specialists within our hospital system/cancer center. These referrals included treatment with an oncology registered dietitian, a psychologist with expertise in behavior change, a physical therapist, a psychiatrist, a social worker, and other specialists. Our program also facilitates referrals to obesity medicine, stress management groups, and psychiatry, among others.

Key elements of survivorship care include monitoring for disease recurrence, addressing the medical and psychosocial consequences of cancer treatment, and promoting health with lifestyle interventions that may improve quality of life, reduce the risk of other chronic diseases, and decrease the risk of cancer recurrence in this growing population.² Addressing lifestyle factors from the time of diagnosis, during treatment, and beyond is a challenging but essential component of comprehensive care for individuals with a diagnosis of cancer. Recent studies have demonstrated the rising burden of cardiovascular disease in cancer survivors²⁰ due to cardiometabolic risk factors and treatment toxicity, as well as the role of obesity, poor diet, and metabolic health in worsening outcomes after a cancer diagnosis/treatment.²¹ Thus, it is imperative that survivors of cancer receive comprehensive, whole-person care to improve their quality of life and physical functioning and, in many cases, reduce the risk of cancer recurrence and the development of other chronic diseases.^{7,9,22-26}

Despite the growing evidence of benefits, there are many barriers to the implementation of LM in oncology care. In 2014, ASCO made “Obesity and Cancer” a core initiative, a key component of which was to increase oncologists’ knowledge about nutrition, physical activity, and weight management and to ensure that these topics were being addressed in the oncology clinic. ASCO conducted a survey of its members to assess knowledge about the role of obesity and the role of nutrition and physical activity.²⁷ This study reported survey

data from nearly 1000 practicing oncology health care providers and noted that most respondents frequently assessed their patients’ body weight, physical activity level, and diet habits. However, the rate of referral of patients to weight management or physical activity programs was much lower.

Barriers to implementation included (1) lack of education on these topics for the oncology team members, (2) lack of time during a clinic visit, and (3) lack of programs for cancer patients to focus on weight management and physical activity. New initiatives are needed to support oncology health care providers’ comfort and ease of referral and counseling. ASCO subsequently conducted an online survey of survivors of cancer to assess what weight-management education was provided during clinic visits.²⁸ The study, as well as a health behavior survey conducted within the present clinic,¹⁷ found that most respondents are not meeting diet or physical activity recommendations.

Further, weight management was addressed in only a quarter of visits. Importantly, in those instances where an oncology health care provider addressed the role of diet and/or physical activity, the respondents were more likely to adopt changes in these behaviors compared with those respondents who did not receive this type of counseling. These findings highlight the important role that members of the oncology health care team play in terms of health promotion and ensuring that cancer survivors incorporate healthy lifestyle behaviors as a part of their survivorship care. There is a need to educate oncology health care providers about tools from LM and to develop multidisciplinary clinics that can address the needs of our patients.

Based on guidelines from all major authoritative bodies, LM tools should be incorporated into the continuum of cancer care to improve the quality of life, physical functioning, and downstream health outcomes of cancer survivors.^{4-7,9,22-26} Despite these benefits, few clinics have been established to address the LM needs of this population.¹⁶ The development of our LM clinic model, the first known of its kind within supportive oncology,¹⁷ has great potential to enhance the care and quality of life of cancer survivors. ■

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