

“Prevalence of Lifestyle Modification among Patients Living with Cancer: Review of literature”.

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Abstract

Introduction

Cancer diagnosis and treatment can influence dietary practices, physical activity, tobacco and alcohol use, body weight, psychological well-being, and use of complementary health practices. Although lifestyle modification is increasingly incorporated into survivorship care, the extent to which patients initiate and maintain evidence-based behaviours remains variable. This review synthesizes available evidence concerning the prevalence, patterns, determinants, barriers, and facilitators of lifestyle modification among patients living with cancer.

Methods: A narrative review was undertaken; evidence was organized according to dietary modification, physical activity, smoking cessation, alcohol reduction, weight management, stress-management practices, complementary and alternative medicine use, and adoption of multiple concurrent behaviours. **Findings** were compared according to cancer type, treatment stage, sociodemographic characteristics, and access to healthcare-provider support.

Results: The reviewed literature suggests that dietary modification is commonly reported after cancer diagnosis, but adherence to evidence-based dietary recommendations is inconsistent. Only a minority of survivors achieve recommended physical-activity levels, and activity often decreases during intensive treatment. Smoking cessation and alcohol reduction occur in a substantial proportion of patients, although relapse and continued risky use remain important concerns. Weight gain is frequently reported among breast and prostate cancer survivors, whereas weight loss and cachexia are prominent concerns in gastrointestinal and lung cancers. Stress-management practices and complementary approaches are used by some patients, but access and disclosure vary according to socioeconomic, cultural, and healthcare factors. Adoption of several evidence-based lifestyle behaviours simultaneously is less common than adoption of a single behaviour. **Conclusion:** Lifestyle modification among patients living with cancer is heterogeneous and frequently unsustained. Treatment-related symptoms, inadequate professional counselling, financial limitations, psychological distress, and limited access to multidisciplinary services are major barriers. Oncology services should integrate individualized lifestyle counselling with diet, exercise, behavioural-health, tobacco-cessation, and culturally appropriate supportive-care services.

Keywords: cancer survivors; lifestyle modification; diet; physical activity; smoking cessation; alcohol reduction; weight management; supportive care; survivorship.

How to cite this article: Shailaja M J Mathews¹ Dr Kirti Jamdar². “Prevalence of Lifestyle Modification among Patients Living with Cancer: Review of literature”.. Int J Drug Deliv Technol. 2026;16(85s):815-820. DOI: 10.25258/ijddt.16.85s.83.

Introduction

“The review of literature is a study of current knowledge about a current issue affecting practice problems and includes what is known and yet to learn about the problem.” The literature is reviewed to summarize knowledge for use in practice or to provide a basis for conducting a study.

Cancer diagnosis and treatment represent significant life-altering events that often prompt patients to reconsider their lifestyle behaviours. Lifestyle modifications, including changes in diet, physical activity, smoking cessation, alcohol consumption, and stress management, have been increasingly recognized as important components of comprehensive cancer care. This focuses on the existing literature on the prevalence of lifestyle modifications among patients living with cancer, across different cancer types, demographic groups, and stages of the cancer.

Reviews were divided in the following sub sections:

1. Prevalence of Dietary Modifications
2. Physical Activity Patterns
3. Smoking Cessation
4. Alcohol Consumption Modification

5. Weight Management

6. Stress Management and Mental Health

Prevalence of Dietary Modifications

Diet represents one of the most commonly modified lifestyle factors following cancer diagnosis. Research indicates that between 30% to 85% of cancer survivors make some form of dietary change after diagnosis, with considerable variation depending on cancer type and cultural context (Beeken et al., 2016). A large-scale study by Zhang et al. (2020) found that 48% of cancer patients reported making significant dietary modifications within the first-year post-diagnosis, with increased fruit and vegetable consumption being the most common change.

The types of dietary modifications vary widely. Romaguera et al. (2018) documented that colorectal cancer patients showed higher rates of dietary change (67%) compared to other cancer types, likely due to the direct relationship between diet and their specific cancer. Common modifications include reducing red meat consumption, increasing plant-based foods, limiting processed foods, and adopting

specific dietary patterns such as Mediterranean or anti-inflammatory diets (Christifano et al., 2022).

However, adherence to evidence-based dietary guidelines remains suboptimal. A systematic review by Harrington et al. (2019) revealed that while many cancer patients express interest in dietary modification, only 25-40% successfully implement and maintain changes consistent with cancer prevention guidelines. Barriers to dietary modification include conflicting nutritional information, lack of professional guidance, financial constraints, and treatment-related side effects affecting appetite and taste (Coa et al., 2021).

Physical Activity Patterns

Physical activity represents another critical lifestyle factor, with substantial evidence supporting its benefits for cancer patients and survivors. Despite this evidence, physical activity levels among cancer patients remain concerning low. Research by Schmitz et al. (2020) indicates that only 15-30% of cancer survivors meet recommended physical activity guidelines of 150 minutes of moderate-intensity exercise per week.

The prevalence of physical activity engagement varies across the cancer continuum. During active treatment, physical activity levels typically decline significantly, with studies showing that 60-80% of patients experience reduced activity compared to pre-diagnosis levels (Hardcastle et al., 2018). Post-treatment, approximately 30-50% of survivors increase their physical activity, though many still fall short of recommended levels (Clifford et al., 2018).

Cancer type influences physical activity prevalence. Breast cancer survivors demonstrate relatively higher rates of physical activity engagement (35-45%) compared to lung or gastrointestinal cancer survivors (15-25%), potentially due to differences in disease burden, treatment side effects, and targeted intervention programs (Focht et al., 2016). Age also plays a significant role, with younger survivors (under 65 years) showing higher engagement rates than older survivors (Rock et al., 2020).

Smoking Cessation

Smoking cessation is particularly critical for cancer patients, as continued smoking negatively affects treatment efficacy, increases complications, and elevates recurrence and mortality risks. Studies indicate that smoking prevalence among cancer patients ranges from 15% to 25% at diagnosis, depending on cancer type (Westmaas et al., 2015). Following diagnosis, approximately 40-50% of smokers with cancer attempt to quit, with quit rates ranging from 30% to 60% depending on cancer type and available support (Gritz et al., 2018). Head and neck cancer patients show higher cessation rates (50-70%) compared to lung cancer patients (30-50%), possibly due to the direct causal relationship and severity of symptoms (Nayan et al., 2019).

However, relapse rates remain substantial. Warren et al. (2017) found that approximately 30-40% of cancer patients who initially quit smoking relapse within the first year. Factors associated with successful cessation include younger age, higher socioeconomic status, stronger social support, and participation in formal cessation programs (Borderud et al., 2014).

Alcohol Consumption Modification

Alcohol consumption represents a modifiable lifestyle factor associated with cancer risk and outcomes. Research suggests that 30-45% of cancer patients reduce their alcohol consumption following diagnosis (Burki, 2021). A longitudinal study by Kwan et al. (2017) found that 37% of cancer survivors who previously consumed alcohol reduced their intake post-diagnosis, while 15% ceased consumption entirely.

The prevalence of alcohol reduction varies by cancer type. Patients with alcohol-related cancers (head and neck, liver, oesophageal) show higher modification rates (50-60%) compared to those with other cancer types (25-35%) (Giraldi et al., 2020). However, a concerning proportion of survivors continue risky drinking behaviours, with studies indicating that 15-25% of cancer survivors consume alcohol above recommended guidelines (Kenzik et al., 2016).

Weight Management

Weight management represents a significant challenge for cancer patients, with both weight loss and weight gain occurring depending on cancer type and treatment. Approximately 40-60% of cancer patients attempt weight management strategies post-diagnosis, though success rates vary considerably (Ligibel et al., 2019).

Obesity prevalence among cancer survivors ranges from 25% to 40%, often exceeding rates in the general population for certain cancer types (Greenlee et al., 2016). Breast and prostate cancer survivors particularly struggle with weight gain, with 50-70% experiencing weight increase during and after treatment (Paxton et al., 2016). Conversely, gastrointestinal and lung cancer patients frequently experience unintentional weight loss and cachexia, affecting 40-80% of patients (Prado et al., 2020).

Stress Management and Mental Health

Psychological distress affects 30-50% of cancer patients, prompting many to seek stress management interventions (Caruso et al., 2017). Approximately 25-40% of cancer patients report engaging in some form of stress reduction practice, including meditation, yoga, mindfulness, or counselling (Carlson et al., 2018).

Mind-body interventions have gained popularity, with studies showing that 20-35% of cancer patients participate in yoga or meditation programs (Talib et al., 2017). However, significant disparities exist in access to these interventions, with higher utilization

among patients with higher socioeconomic status, younger age, and urban residence (Mao et al., 2016).

Complementary and Alternative Medicine (CAM)

The use of complementary and alternative medicine approaches represents a form of lifestyle modification, with prevalence rates ranging from 40% to 80% among cancer patients, depending on definitions and geographical location (Wode et al., 2019). Common CAM practices include herbal supplements, acupuncture, massage therapy, and special diets (Horneber et al., 2018).

Asian populations demonstrate particularly high CAM utilization rates (60-80%), while Western populations show more moderate rates (40-60%) (Deng et al., 2018). Concerns exist regarding potential interactions between CAM and conventional treatments, yet only 30-50% of patients disclose CAM use to their oncologists (Davis et al., 2015).

Multiple Lifestyle Modifications

While single lifestyle modifications are common, adoption of multiple concurrent lifestyle changes occurs less frequently. Research indicates that only 15-25% of cancer patients successfully implement multiple evidence-based lifestyle modifications simultaneously (Tollosa et al., 2019). A study by Bours et al. (2016) found that merely 8% of colorectal cancer survivors adhered to all recommended lifestyle guidelines regarding diet, physical activity, weight management, alcohol, and smoking.

The clustering of healthy behaviour's appears more common among certain demographic groups, including younger patients, females, those with higher education, and those with strong social support (Phillips et al., 2020). However, even among motivated patients, sustaining multiple lifestyle changes beyond the first-year post-diagnosis remains challenging, with maintenance rates declining to 20-30% by year two (Anderson et al., 2016).

Demographic and Clinical Factors Influencing Lifestyle Modification

Numerous factors influence the prevalence and success of lifestyle modifications among cancer patients. Sociodemographic variables play a significant role, with higher education, greater income, and younger age consistently associated with higher rates of positive lifestyle change (Murnane et al., 2015). Gender differences exist, with female cancer patients generally showing higher engagement in lifestyle modifications compared to males (Williams et al., 2017).

Clinical factors also influence modification patterns. Cancer stage at diagnosis affects lifestyle change, with early-stage patients more likely to adopt modifications compared to advanced-stage patients, potentially due to better physical function and prognosis (Lee et al., 2019). Time since diagnosis

matters, with peak motivation occurring immediately post-diagnosis, followed by gradual decline in adherence (Rabin et al., 2018).

Treatment modality impacts lifestyle capability, with patients undergoing intensive treatments (chemotherapy, radiation) experiencing more barriers to physical activity and dietary modifications due to side effects (Blanchard et al., 2016). Comorbidity burden negatively affects lifestyle modification prevalence, with patients managing multiple chronic conditions facing additional challenges (Stein et al., 2017).

Significant geographic and cultural variations exist in lifestyle modification prevalence. Studies from Western countries generally report higher awareness of lifestyle importance and greater access to supportive programs compared to low- and middle-income countries (Patel et al., 2018). However, actual adherence rates do not always correspond with awareness levels.

Cultural beliefs and practices substantially influence modification patterns. Traditional dietary practices, family structures, and health belief systems shape how cancer patients approach lifestyle change (Kagawa-Singer et al., 2016). Asian cancer patients often incorporate traditional medicine and dietary approaches alongside conventional treatments, while Western patients may emphasize exercise-based interventions (Chung et al., 2017).

Barriers and Facilitators

Understanding barriers to lifestyle modification is essential for improving prevalence rates. Commonly reported barriers include lack of knowledge about appropriate modifications, absence of professional guidance, physical limitations from treatment, financial constraints, time limitations, lack of social support, and competing priorities (Hardcastle et al., 2019).

Treatment-related side effects constitute major barriers, with fatigue, nausea, pain, and cognitive changes limiting patients' ability to implement changes (Stone et al., 2017). Psychological factors, including depression, anxiety, and low self-efficacy, also impede lifestyle modification efforts (Galvão et al., 2020).

Conversely, facilitators include strong healthcare provider recommendation, access to structured programs, social support from family and peers, integration of changes into routine, and positive early experiences with modifications (Hardcastle et al., 2018). Cancer diagnosis itself serves as a "teachable moment" that can motivate change, particularly when healthcare providers leverage this opportunity effectively (Demark-Wahnefried et al., 2015).

Role of Healthcare Provider Guidance

Healthcare provider involvement significantly influences lifestyle modification prevalence. Studies consistently show that patients who receive specific lifestyle recommendations from their oncology team

are 2-3 times more likely to make and maintain changes (Spector et al., 2016). However, research indicates that only 20-40% of cancer patients report receiving comprehensive lifestyle guidance from their healthcare providers (Nadler et al., 2017). Barriers to provider-delivered lifestyle counselling include time constraints, lack of training in lifestyle medicine, uncertainty about evidence-based recommendations, concerns about patient receptivity, and lack of reimbursement for counselling services (Beesley et al., 2018). Multidisciplinary care models incorporating dietitians, exercise physiologists, and behavioral health specialists show promise for improving modification rates (Paskett et al., 2018).

Summary

The literature reveals that while many cancer patients express interest in lifestyle modification and substantial proportions attempt changes, actual prevalence of sustained, evidence-based lifestyle modifications remains suboptimal. Significant variations exist based on modification type, cancer type, demographic characteristics, and geographic location.

Improving the prevalence of lifestyle modifications among cancer patients requires multi-level interventions. Healthcare systems must prioritize integrating lifestyle medicine into standard oncology care, training providers in lifestyle counselling, and ensuring access to multidisciplinary supportive services. Patient education, addressing barriers, and providing ongoing support throughout the cancer treatment essential strategies. As the cancer survivor population continues to grow, optimizing lifestyle behaviours represents a critical opportunity to improve outcomes and quality of life for this population.

Conclusion

The review demonstrates that lifestyle modification among patients living with cancer is a complex, cancer diagnosis often serves as a catalyst for behaviour change, evidence-based lifestyle modifications remain challenging for most patients. The evidence indicates moderate to low prevalence rates for adherence to recommended lifestyle guidelines across dietary patterns, physical activity, smoking cessation, alcohol reduction, and weight management.

Key barriers including lack of professional guidance, treatment-related side effects, insufficient knowledge, financial constraints, and limited access to supportive resources continue to impede optimal lifestyle modification prevalence. Strong healthcare provider support, structured intervention programs, social support networks, and integration into routine care emerge as critical facilitators.

As the population of cancer survivors continues to expand globally, optimizing lifestyle behaviours represents a critical, modifiable opportunity to

improve clinical outcomes, reduce recurrence risk, enhance quality of life, and potentially prevent secondary cancers. This requires coordinated efforts across research, clinical practice, health policy, and community-based programs to support cancer patients in adopting and maintaining healthy lifestyle behaviours throughout their cancer journey and beyond.

Conflicts of interest: None.

Declaration of generative AI and AI-assisted technologies in the writing process: During the preparation of this work, the authors have used ChatGPT (OpenAI) to improve readability and language.

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