

Review Article

Cancer survivorship and long-term outcomes: navigating the challenges beyond treatment

Tavseef Ahmad Tali^{1*}, Fiza Amin²

¹Department of Radiation Oncology, SKIMS, Soura, Srinagar, Jammu and Kashmir, India

²Department of Gynaecology and Obstetrics, Skims Medical College, Bemina, Srinagar, Jammu and Kashmir, India

Received: 17 August 2024

Accepted: 06 October 2024

*Correspondence:

Dr. Tavseef Ahmad Tali,

E-mail: ahmad.tavseef90@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

The increasing number of cancer survivors due to advancements in early detection and treatment has shifted the focus of oncology to the long-term health and well-being of these individuals. Cancer survivorship encompasses a wide range of challenges that extend beyond the completion of treatment, including physical, psychological, social, and economic issues. This review explores the long-term physical health consequences of cancer treatment, such as neuropathy, cardiotoxicity, and chronic conditions, and highlights the psychological burdens, including anxiety, depression, and cognitive impairment, commonly faced by survivors. The article also addresses the social and economic impacts, such as difficulties in returning to work and financial toxicity, which further complicate the survivorship experience. Additionally, the review emphasizes the importance of assessing and improving the quality of life (QoL) for survivors through personalized interventions and the implementation of survivorship care plans (SCPs). Emerging research on biomarkers, telemedicine, and policy advocacy is discussed as critical components for advancing survivorship care. The review concludes that a comprehensive approach, including ongoing research, personalized care, and supportive policies, is essential to meet the diverse needs of cancer survivors and improve their long-term outcomes and QoL.

Keywords: Cancer, Survivorship, QoL

INTRODUCTION

Number of cancer survivors has increased dramatically due to breakthroughs in early detection and treatment; consequently, there is a renewed emphasis on difficulties these people have following treatment. Physical, psychological, social, and financial facets of surviving cancer are all included in concept of cancer survivorship. Comprehending and tackling these obstacles is vital in enhancing the standard of living and enduring health consequences for those who have survived.

PHYSICAL HEALTH CHALLENGES

Cancer treatment, while life-saving, often comes with a range of long-term physical health challenges that can persist for years after the completion of therapy.

LONG-TERM SIDE EFFECTS OF TREATMENT

Chemotherapy, radiation, and surgery can leave survivors with lasting side effects. Chemotherapy is known for causing neuropathy, which can lead to chronic pain and mobility issues.¹ Additionally, chemotherapeutic agents such as anthracyclines have been linked to cardiotoxicity, increasing the risk of heart disease in survivors.² Radiation therapy, while effective, can result in secondary malignancies and cardiovascular complications, particularly in patients who received treatment near vital organs like the heart.³

Surgical interventions can also lead to long-term consequences, including functional impairments and lymphedema, particularly in breast cancer patients who undergo lymph node dissection.⁴ These physical

challenges necessitate ongoing monitoring and management to mitigate their impact on survivors' daily lives.

CHRONIC HEALTH CONDITIONS

Cancer survivors are at an increased risk of developing chronic health conditions such as heart disease, diabetes, and osteoporosis, often as a result of their treatment.⁵ This heightened risk requires a proactive approach to healthcare, including regular screenings and the adoption of healthy lifestyle behaviors to prevent or manage these conditions.

FERTILITY AND SEXUAL HEALTH

Fertility and sexual health are significant concerns for many cancer survivors, particularly younger patients. Treatments like chemotherapy and radiation can impair fertility, leading to challenges in family planning.⁶ Additionally, the impact on sexual function and libido can strain relationships and affect mental health, highlighting the need for comprehensive sexual health support for survivors.⁷

PSYCHOLOGICAL AND EMOTIONAL WELL-BEING

Beyond physical health, cancer survivors often grapple with psychological and emotional challenges that can persist long after treatment ends.

MENTAL HEALTH ISSUES

Anxiety, depression, and post-traumatic stress disorder (PTSD) are common among cancer survivors.⁸ The fear of recurrence, coupled with the physical and social changes brought about by cancer, can exacerbate these mental health challenges. Early intervention and access to mental health services are critical to helping survivors cope with these emotional burdens.

COGNITIVE IMPAIRMENT

Cognitive impairment, often referred to as "chemo brain," affects a significant number of survivors. This condition can manifest as difficulties with memory, attention, and executive function, impacting both personal and professional life.⁹ Understanding the underlying mechanisms and developing effective interventions are key areas of ongoing research.

BODY IMAGE AND SELF-ESTEEM

Body image concerns are prevalent among survivors, particularly those who have undergone surgeries that alter their appearance, such as mastectomies or head and neck surgeries. These changes can lead to diminished self-esteem and social withdrawal.¹⁰ Supportive interventions,

including counseling and reconstructive surgery, can play a vital role in helping survivors rebuild their self-image.

SOCIAL AND ECONOMIC IMPACT

The social and economic ramifications of surviving cancer are significant and multifaceted.

WORK AND EMPLOYMENT

Returning to work after cancer treatment can be fraught with challenges, including discrimination, reduced work capacity, and difficulty finding employment. Many survivors report feeling unsupported by their employers and coworkers, which can exacerbate feelings of isolation and financial strain.¹¹ Addressing these issues requires both policy changes and workplace education to support the reintegration of cancer survivors into the workforce.

FINANCIAL TOXICITY

The economic burden of cancer does not end with treatment. Many survivors face ongoing medical expenses, including costs for follow-up care, medications, and managing long-term side effects. This financial toxicity can lead to significant stress and may even affect treatment adherence.¹² Insurance coverage, financial counseling, and patient assistance programs are critical in alleviating this burden.

SOCIAL RELATIONSHIPS

Cancer can strain relationships with family and friends, as survivors may feel misunderstood or isolated due to the lingering effects of their illness. Social support is a crucial factor in coping with these challenges, yet many survivors report a lack of adequate support systems.¹³ Building strong, supportive networks is essential for improving the social well-being of survivors.

QOL

QoL is a central concern for cancer survivors, encompassing physical, emotional, social, and functional well-being.

Assessment of QoL

QoL is typically assessed using standardized tools that measure various domains of well-being. These assessments help healthcare providers identify areas where survivors may need additional support.¹⁴

Interventions to improve QoL

Several interventions have been shown to improve QoL in cancer survivors. Exercise programs tailored to the individual's abilities can reduce fatigue, improve physical function, and enhance emotional well-being.¹⁵ Nutritional counseling, mental health support, and integrative

therapies such as yoga and mindfulness are also beneficial in addressing the multifaceted needs of survivors.¹⁶

SURVIVORSHIP CARE PLANS

To address the diverse needs of cancer survivors, personalized SCPs have become a standard of care.

IMPORTANCE OF FOLLOW-UP CARE

Follow-up care is essential for monitoring late effects, managing chronic conditions, and promoting healthy lifestyles. Regular follow-ups allow healthcare providers to detect and address issues early, thereby improving long-term outcomes.

PERSONALIZED SURVIVORSHIP CARE PLANS

SCPs are tailored to the individual's cancer type, treatment history, and personal health factors. These plans provide a roadmap for ongoing care, including recommended screenings, lifestyle modifications, and referrals to specialists as needed. The goal is to ensure that survivors receive comprehensive care that addresses all aspects of their health.

ROLE OF PRIMARY CARE PROVIDERS

As survivors transition from oncology care to primary care, the role of primary care providers becomes increasingly important. Effective communication and collaboration between oncologists and primary care providers are crucial to ensuring continuity of care and addressing the long-term health needs of survivors.¹⁷

EMERGING RESEARCH AND FUTURE DIRECTIONS

Ongoing research is critical to advancing our understanding of cancer survivorship and improving long-term outcomes.

BIOMARKERS FOR PREDICTING LONG-TERM OUTCOMES

Recent studies have focused on identifying biomarkers that can predict long-term outcomes, such as the risk of recurrence or the development of chronic conditions. These biomarkers have the potential to personalize follow-up care and guide interventions to prevent adverse outcomes.¹⁸

TELEMEDICINE AND DIGITAL HEALTH TOOLS

The rise of telemedicine and digital health tools offers new opportunities for supporting cancer survivors. These technologies can facilitate remote monitoring, provide access to educational resources, and connect survivors

with support groups, all of which can enhance care and improve QoL.

POLICY AND ADVOCACY

Policy changes and advocacy efforts are essential to improving survivorship care on a broader scale. This includes advocating for insurance coverage of survivorship services, increasing funding for survivorship research, and raising awareness of the unique needs of cancer survivors.

CONCLUSION

Cancer survivorship is a complex and evolving field that requires a comprehensive approach to care. By addressing the physical, psychological, social, and economic challenges that survivors face, healthcare providers can significantly improve long-term outcomes and enhance the QoL for this growing population. Continued research, personalized care plans, and supportive policies are essential to meeting the needs of cancer survivors and ensuring that they can lead healthy, fulfilling lives beyond their cancer diagnosis.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Jasper JK, Kamal KM, Nair R. Neuropathy management strategies in cancer patients undergoing chemotherapy: A narrative review. *J Oncol Pharmacy Pract.* 2020;26(4):789-99.
2. Lenihan DJ, Cardinale DM. Cardio-oncology: Primary prevention, early diagnosis, and management of cardiovascular issues in cancer patients. *Am J Cardiol.* 2012;110(10):1671-6.
3. Travis LB, Fossa SD, Schonfeld SJ, McMaster ML, Lynch CF, Storm H, et al. Radiation-related new primary solid cancers in the Childhood Cancer Survivor Study: Comparative radiation dose response and modification of treatment effects. *Int J Radiation Oncol Biol Physics.* 2013;86(5):944-51.
4. Armer JM, Stewart BR. Post-breast cancer lymphedema: Incidence increases from 12 to 30 to 60 months. *Lymphology.* 2010;43(3):118-27.
5. Hudson SV, Miller SM, Hemler J, Ferrante JM, Lyle J, Oeffinger KC, et al. Adult cancer survivors discuss follow-up in primary care: "Not what I want, but maybe what I need." *Ann Family Med.* 2012;10(5):418-27.
6. Oktay K, Harvey BE, Partridge AH, Quinn GP, Reinecke J, Taylor HS, et al. Fertility preservation in patients with cancer: ASCO clinical practice guideline update. *J Clin Oncol.* 2018;36(19):1994-2001.
7. Ganz PA, Rowland JH, Desmond K, Meyerowitz BE, Wyatt GE. Life after breast cancer:

- Understanding women's health-related quality of life and sexual functioning. *J Clin Oncol.* 2003;16(2):501-14.
8. Mitchell AJ, Chan M, Bhatti H, Halton M, Grassi L, Johansen C, et al. Prevalence of depression, anxiety, and adjustment disorder in oncological, haematological, and palliative-care settings: a meta-analysis of 94 interview-based studies. *Lancet Oncol.* 2011;12(2):160-74.
 9. Janelins MC, Kesler SR, Ahles TA, Morrow GR. Prevalence, mechanisms, and management of cancer-related cognitive impairment. *Int Rev Psychiatr.* 2014;26(1):102-13.
 10. Fingeret MC, Nipomnick SW, Crosby MA, Reece GP. Developing a body image scale for use with cancer patients undergoing reconstructive surgery. *Psycho-Oncol.* 2012;21(1):71-6.
 11. De Boer AG, Taskila T, Ojajärvi A, Van Dijk FJ, Verbeek JH. Cancer survivors and unemployment: A meta-analysis and meta-regression. *JAMA.* 2015;307(15):1568-75.
 12. Zafar SY, Abernethy AP, Ubel PA. Financial toxicity, Part II: how out-of-pocket expenses, loss of income, and debt impact cancer patients. *The Oncologist.* 2013;18(4):369-70.
 13. Bloom JR, Petersen DM, Kang SH. Multi-dimensional quality of life among long-term (5+ years) adult cancer survivors. *Psycho-Oncol.* 2007;16(8):691-706.
 14. Ferrans CE, Zerwic JJ, Wilbur JE, Larson JL. Conceptual model of health-related quality of life. *J Nursing Scholarship.* 2005;37(4):336-42.
 15. Courneya KS, Friedenreich CM. Physical activity and cancer control. *Seminars Oncol Nursing.* 2007;23(4):242-52.
 16. Lengacher CA, Reich RR, Post-White J, Moscoso MS, Shelton MM, Barta M, et al. Mindfulness-based stress reduction in post-treatment breast cancer patients: an examination of symptoms and symptom clusters. *J Behavioral Med.* 2009;32:317-28.
 17. Mayer DK, Nekhlyudov L, Snyder CF, Merrill JK, Wollins DS. American Society of Clinical Oncology clinical expert statement on cancer survivorship care planning. *J Oncol Pract.* 2014;10(6):345-51.
 18. De Giorgi U, Rosti G, Slavin S, Yakir Z. Circulating biomarkers in cancer survivors: Current evidence and future challenges. *Cancer Management Res.* 2019;11:3789-98.

Cite this article as: Tali TA, Amin F. Cancer survivorship and long-term outcomes: navigating the challenges beyond treatment. *Int J Sci Rep* 2024;10(11):418-21.