



The Vital Role of Nutrition and Nutritionists in Paediatric Oncology

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Commentary

The intersection between nutrition and paediatric oncology is increasingly recognised as a pivotal aspect of comprehensive cancer care. While much of the focus in cancer treatment traditionally centres around medical interventions such as chemotherapy, surgery, and radiation, nutrition is often the unsung hero that can dramatically influence treatment outcomes. For children battling cancer, proper nutrition is not merely a supplementary aspect of care—it is a cornerstone of survival and recovery.

This commentary explores the importance of integrating specialised nutrition into paediatric oncology, the challenges that malnutrition presents to cancer treatment, and the broader implications of nutritional care for long-term health and recovery. It underscores why every child undergoing cancer treatment deserves personalised, focused nutrition support to combat the harsh side effects of treatment and bolster their body's capacity to heal.

The Double Burden of Cancer and Malnutrition

Globally, an estimated 400,000 children are diagnosed with cancer each year, with lower- and middle-income countries (LMICs) bearing 80% of this burden [1]. In India alone, approximately 76,000 children may develop cancer annually [2].

Children with cancer face a dual battle: one against the disease itself and the other against the malnutrition that frequently accompanies it. Cancer dramatically increases a child's energy requirements, and yet, many children undergoing

treatment struggle with appetite loss, nausea, and other side effects that make adequate food intake difficult. Malnutrition, in turn, weakens their immune system, reduces their ability to tolerate treatment, and increases the risk of infections and complications [3].

The Cuddles Foundation's Food Heals Report 2024 has found 58% of beneficiaries to be undernourished at their initial visit [4]. A child diagnosed with cancer is often already in a state of compromised health, and the onset of aggressive treatments only exacerbates this issue.

Without sufficient nutritional support, these children are at greater risk of treatment-related toxicity, delayed recovery, and even death.

It is important to understand that malnutrition in paediatric cancer patients is not limited to undernutrition alone. Some children may also experience overnutrition as a result of the type of treatment, type of cancer, improper nutrient intake, particularly if they are provided with foods that are not balanced or tailored to their specific needs. Therefore, addressing malnutrition in these young patients requires more than just ensuring they eat enough—it requires a strategic approach to nutrition that focuses on the quality and adequacy of their dietary intake.

Why Nutrition Matters in Paediatric Oncology

Nutrition plays a fundamental role in cancer care, influencing not just immediate treatment outcomes but also long-term health. For children, who are in critical stages of growth and development, the stakes are even higher.

Proper nutrition can help

Support Immune Function

A well-nourished body is better equipped to combat infections, particularly important for pediatric cancer patients whose immune systems may be compromised due to treatments like chemotherapy. Research indicates that specific nutrients can enhance immune function. For example, vitamins A, C, D, E, and minerals such as zinc and selenium are essential for maintaining a robust immune response. A study by Han and Wang (2023) highlights that dietary interventions can significantly improve immune function in cancer patients by providing necessary nutrients that bolster the body's defences against infections and aid in recovery from treatment-related immunosuppression [5].

Promote Tissue Healing

Cancer treatments often damage healthy tissues, making adequate protein intake vital for repairing cells and tissues. Protein is crucial for synthesizing new cells and tissues, which is especially important for growing children undergoing treatment. A randomized controlled trial demonstrated that nutritional support, including protein supplementation, led to improved healing outcomes in oncology patients by facilitating faster recovery from the adverse effects of chemotherapy and radiation [6].

Enhance Treatment Tolerance

Undernourished children frequently experience more severe side effects from aggressive cancer treatments, including nausea, fatigue, and mucositis. These side effects can hinder their ability to tolerate treatment schedules effectively. Research indicates that children receiving comprehensive nutritional support experienced fewer treatment-related complications compared to those who only received standard dietary counseling [7]. This improved tolerance allows for more consistent treatment regimens, ultimately enhancing overall prognosis.

Maintain Energy Levels and Strength

Fatigue is a prevalent side effect of both cancer and its treatments. Balanced nutrition provides the necessary energy to help children maintain their strength and stamina during treatment.

Research suggests that adequate caloric intake improves quality of life by reducing fatigue levels and promoting physical activity [8]. Maintaining an active lifestyle has been shown to alleviate treatment-related fatigue and enhance mental well-being.

Support Growth and Development

Children undergoing cancer treatment are still in critical stages of growth and development. Malnutrition during this period can lead to long-term consequences such as stunted growth and impaired cognitive development. Studies indicate that adequate nutrition supports normal growth patterns despite the challenges posed by illness. Ensuring that pediatric oncology patients receive the necessary nutrients helps them continue to develop according to their genetic potential [9].

The Role of Specialised Nutritionists

One of the key recommendations of the FoodHeals™ Report 2024 is the urgent need for more specialised nutritionists in paediatric oncology. Research indicates that the time to treatment completion for pediatric cancer patients decreases with the inclusion of nutritional interventions adhering to professional dietetic standards [10].

Given the complexity of paediatric oncology, the involvement of specialised nutritionists is essential. These professionals are trained to assess the unique needs of children undergoing cancer treatment and develop personalised nutrition plans that cater to each child's specific condition. Unlike general dietary advice, the work of paediatric oncology nutritionists involves continuous monitoring and adjustment of nutritional plans based on the child's evolving health status.

Specialised nutritionists play a critical role in paediatric oncology by developing personalised nutrition plans, monitoring patients' progress, and adjusting interventions as needed. The Nutrition Care Process (NCP) outlined in the report provides a framework for nutritionists to follow, which includes assessing nutritional deficiencies, designing tailored interventions, and closely tracking patient outcomes. However, without an adequate number of trained professionals, it is difficult to implement these processes effectively.

For example, some children may require enteral nutrition (tube feeding) if they are unable to consume food orally due to nausea or vomiting, while others may need parenteral nutrition (nutrition delivered intravenously) if their gastrointestinal system is compromised. Nutritionists in paediatric oncology are equipped to make these recommendations and adjust plans as necessary, ensuring that each child receives the nutrients they need, even under challenging circumstances.

Challenges and Barriers

While the benefits of integrating nutrition into paediatric oncology care are clear, there are significant challenges to

overcome. One of the main barriers is the lack of awareness about the importance of nutrition and nutritionists among both healthcare providers and families. Too often, nutrition is viewed as secondary to medical treatments like chemotherapy or surgery. As a result, malnutrition may go unaddressed until it reaches a critical level, by which point it is much harder to correct.

In addition, economic constraints and food insecurity play a major role in limiting access to nutritious food, especially in low-resource settings. Families of children with cancer may already be financially burdened by the cost of treatment, and finding the resources to provide a balanced diet can be a significant challenge. This is particularly true in countries where healthcare systems are underfunded and nutritional support is not routinely included in cancer care programs or medical insurance.

Nutritionists need to screen for food insecurity and be trained to recognise the signs of malnutrition early. Those patients then need to be assessed and action needs to be taken before complications arise. Furthermore, policies should be in place to ensure that all children with cancer have access to adequate nutritional support, regardless of their socioeconomic status.

Looking Ahead: A Call to Action

To improve the outcomes of children with cancer, healthcare systems must prioritise nutrition as a fundamental component of paediatric oncology care. This requires a multi-faceted approach:

Policy Integration: Governments and healthcare institutions should integrate nutrition into paediatric oncology treatment protocols. Policies that mandate routine nutritional assessments and the inclusion of specialised nutritionists in oncology units can help bridge the current gaps in care.

Education and Awareness: Both healthcare providers and families need to be educated on the importance of nutrition in cancer treatment. Awareness campaigns and training programs can help shift the perception of nutrition from a supplementary aspect of care to a core component of cancer treatment.

Investment in Resources and Research: There is an urgent need for investment in training more paediatric oncology nutritionists and ensuring that they are available in all cancer treatment centres.

Additionally, funding for research to help develop evidence-based nutritional protocols for specific side-effects can help improve treatment outcomes and quality of life for

children with cancer. The development and implementation of uniform, standardized nutrition protocols, similar to the recently published consensus guidance, is the need of the hour [11].

Conclusion

Nutrition plays a critical role in the management of childhood cancer. For children undergoing cancer treatment, optimal nutritional support can significantly impact survival outcomes, treatment tolerance, and recovery, underscoring its importance in improving overall quality of care. As the medical community continues to advance in the treatment of paediatric cancer, the role of nutrition must not be overlooked. By integrating specialised nutritional care into paediatric oncology, we can not only improve treatment outcomes but also give children a better chance at a healthy, fulfilling life after cancer.

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