Overcoming the Challenges of Pediatric Cancer Care in Low and Middle Income Countries : A Call for Humanitarian Action

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Childhood cancer represents one of the harshest health inequities of our time. While modern oncology has transformed many pediatric malignancies from universally fatal to mostly curable conditions in High Income Countries (HICs) children in Low and Middle Income Countries (LMICs) continue to die from cancers.[1] This disparity is not merely a medical failure, but a profound moral crisis in global health. Each year, approximately 400,000 children worldwide are diagnosed with cancer, with over 90% of these cases occurring in LMICs where survival rates remain tragically very low, often below 30% compared to over 80% in HICs for common cancers like acute lymphoblastic leukemia.[2] The most common childhood cancers are leukemias, lymphomas, Wilms tumor, Rhabdomyosarcoma, Germ cell tumor, etc. are often curable when detected early and treated appropriately. However, in LMICs, late-stage diagnosis, limited treatment availability and high abandonment rates contribute to low cure rate in comparison to HICs.[3] Unlike in HICs, where pediatric cancer is a survivable disease, in many LMICs, it remains a death sentence.

The reasons behind this survival gap are complex but solvable. This survival gapreflects systemic failures in healthcare infrastructure, socio-economic barriers and global inequities in resource allocation. Unlike adult cancers that may require expensive targeted therapies, most childhood cancers respond well to established, cost-effective treatment protocols.[4] The tragedy is not that we lack the knowledge to cure these children, but that we have failed to equitably implement what we already know works.

Key Challenges in Pediatric Cancer Care are :-

i) Delayed diagnosis

ii) Advanced disease at presentation.

Late diagnosis reduces the chances of successful treatment, increases complications and raises costs. Cause of delayed diagnosis is limited access to treatment and lack of modern facilities of cancer diagnosis. Many children in LMICs are diagnosed at advanced stages due to: Low awareness among families and primary healthcare providers.[5] Cultural beliefs and stigma leading to reliance on traditional medicine before seeking hospital care.[6] Geographical barriers, with families need to travel long distances to reach specialized centers.[7]

iii) Treatment abandonment-Cancer treatment is expensive, and in the absence of robust health insurance systems, families bear catastrophic out-of-pocket costs.[8] Out-of-pocket expenses for cancer treatment push families into poverty. Many are forced to choose between treatment and basic survival needs, leading to high abandonment rates.[9]

iv) Shortage of Trained healthcare professionals, LMICs face a critical shortage of pediatric oncologists, trained nurses, and expert pathologists.[10] Additionally, mal distribution of skilled manpower and undue bureaucratic interference made a great barrier in getting proper care. These factors lead to frustrations of skilled manpower ultimately encourages brain drain also exacerbates workforce gaps.[11]

v) High treatment-related mortality frominfections and malnutrition.Children in LMICs often present with malnutrition and comorbidities, increasing susceptibility to infections during chemotherapy.[12] Sepsis and treatment toxicity contribute significantly to mortality.[13]

The WHO's Global Initiative for Childhood Cancer aims to improve survival rates to 60% by

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2030.[14] However, national cancer control plans in LMICs often lack funding and political commitment.[15]

What we need is amultisectoral approach :-

i) Strengthening health systems, integratecommon pediatric cancer into under graduate course curriculum to improve early detection. Expand Universal Health Coverage (UHC) to include childhood cancer treatment

ii) Sustainable financing mechanisms, increase government and local donor funding by creating community awareness, must prioritize childhood cancer programs. Implementation of health insurance schemes and subsidies can reduce financial burden for poor families.[16]

iii) Workforce training,expand medical education in pediatric oncology. Incentivize healthcare workers to stay in rural centers through foreign training and better working conditions.

iv) Community engagement and awareness, public health campaigns can reduce stigma and promote early diagnosis.[17] Engage traditional healers and village health workers as allies in referral systems

v) Research and Data Collection-LMIC-specific research is needed to optimize treatment in resource-limited settings.[18] Cancer registries must be strengthened to track outcomes and guide policy.[19]

The challenges in pediatric oncology facing LMICs are formidable but not uncompromising. What we require is nothing less than a rearrangement of global health priorities and resource allocation. The solutions we have discussed are, strengthening health systems, implementing adapted treatment protocols, workforce training, and community engagement are all proven strategies that can dramatically improve outcomes when properly implemented and sustained.

However, technical solutions alone are insufficient without addressing the underlying inequities that created these disparities. We must confront uncomfortable truths about how global health resources are distributed and question why certain children's lives are valued more than others based solely on geography. The moral imperative is clear: in a world that has the knowledge and resources to cure most childhood cancers, allowing children to die from treatable malignancies is an injustice that we can no longer allow to go.

This is not merely a medical challenge but a test of our collective humanity. The vision of 60% survival for childhood cancers in LMICs by 2030 set by the WHO Global Initiative for Childhood Cancer is achievable, but only if accompanied by sustained political will, adequate funding, and genuine global solidarity.

We call upon governments, international organizations, philanthropic institutions, and the global medical community to:

i) Prioritize childhood cancer in universal health coverage packages

ii) Increase funding for LMIC cancer programs with a focus on sustainability

iii) Strengthen international collaborations that build local capacity rather than create dependency

iv) Support LMIC-led research to develop context-appropriate solutions

v) Establish accountability mechanisms to track progress and outcomes.

The children of LMICs do not need our pity, they need our action. They need us to honor their right to health with the same urgency and commitment we would demand for our own children. In the end, our success in addressing childhood cancer disparities will be measured not by scientific publications or conference declarations, but by the number of children who get to grow up and fulfill their potential. That is the future we must work tirelessly to create.

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