



# Challenges in the Management of Childhood Cancer Patients in a Tertiary Hospital in Southern Nigeria

E. U. Bassey<sup>a\*</sup>, I. A. Akpan<sup>a</sup>, C. Nnoli<sup>a</sup> and E. E. Akpan<sup>a</sup>

<sup>a</sup> Department of Paediatrics, University of Uyo Teaching Hospital, Uyo. Akwa Ibom State, Nigeria.

## Authors' contributions

This work was carried out in collaboration among all authors. Author EUB designed the study and wrote the first draft. Authors IAA and CN contributed to the subsequent drafts. Author EEA retrieved the data and made entries. All authors read and approved the final manuscript.

## Article Information

DOI: 10.9734/AJMAH/2022/v20i1030509

## Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/89135>

Original Research Article

Received 04 May 2022  
Accepted 13 July 2022  
Published 19 July 2022

## ABSTRACT

**Introduction:** The burden of childhood cancer is an important child health concern globally. Several million new cases are diagnosed annually, but the greatest burden is borne by developing countries. The management of paediatric cancer patients in these settings is fraught with several challenges, which can significantly affect outcome.

**Aim:** To identify the various challenges in management of children with cancers in the University of Uyo Teaching Hospital Uyo, Nigeria and proffer interventions which may impact positively on their long term survival and quality of life.

**Methods:** A three year retrospective study of children admitted with cancers was carried out at the Haemato-Oncology unit of the department of Paediatrics, University of Uyo Teaching Hospital, Uyo Nigeria, from January 2019 and December 2021. The available records of their admission, treatment process, progress and outcome were reviewed.

**Results:** Of the thirty-eight (38) patients seen, all presented at a late stage of disease. The socio-economic class of parents were mostly low (81.6%) and all treatments were self-sponsored, with 44.7% discharging against medical advice due to financial constraints.

**Conclusion:** The challenges in the management of paediatric cancer patients included late presentation, late diagnosis, financial constraints/poverty, burn-out of caregivers, with a resultant high frequency of discharge against medical advice. Greater awareness about childhood cancers, increased advocacy for governmental input by way of resources, infrastructure and health insurance policies would improve outcome.

\*Corresponding author: E-mail: [utukenoobong@yahoo.com](mailto:utukenoobong@yahoo.com);

**Keywords:** Cancers; challenges; children; Nigeria.

## 1. INTRODUCTION

Cancer, which is a notable cause of death in children, still has a high burden in most developing countries. It is an important child health concern globally. Childhood cancers account for an estimated 60 - 80% of the total burden of all new cancer cases worldwide [1,2].

Many children with cancers in low-income countries still die without access to proper therapy, and the overall 5-year survival is considerably poor in most sub-Saharan African countries [3-5].

Challenges abound in the management of paediatric cancer patients, which can significantly affect outcome of treatment [6-8]. While developed nations are bothered about increased survival and cure rates, development of improved therapies and achievement of better quality of life [9], most developing countries are grappling with poor data records, ignorance, poverty, increased patronage of traditional medicine vendors, lack of centres with specialized health workers and diagnostic facilities, expensive chemotherapeutic drugs and lack of support at the level of the community [1,4,10,11].

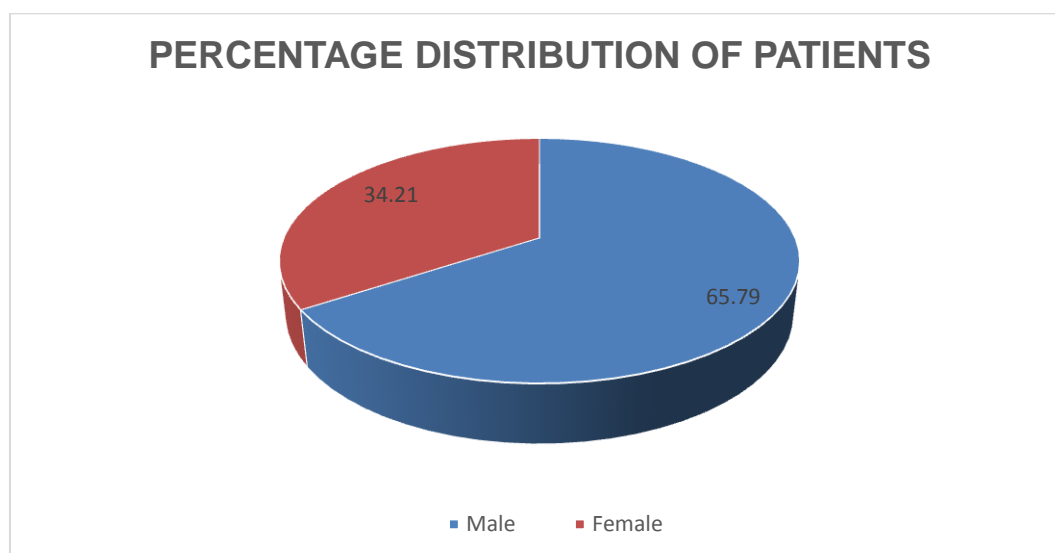
The aim of this study was to identify the various challenges in management of children with cancers in the University of Uyo Teaching Hospital, and proffer interventions which may impact positively on their survival and quality of life.

## 2. METHODS

A three year retrospective study of children admitted with cancers into the Paediatric Haemato-Oncology Unit of the University of Uyo Teaching Hospital Uyo, Nigeria between January 2019 and December 2021 was carried out. The available records of their admission, treatment process, progress, and outcome were reviewed. Socioeconomic class was determined according to Oyediji's classification [12].

## 3. RESULTS

Of the one thousand, six hundred and five (1,605) children admitted in the study period, those who were diagnosed with various cancers were thirty-eight (38), constituting 2.37% of the total number. Fig. 1 shows the percentage distribution of patients. Of the thirty-eight (38) reviewed, male comprised 25 (65.79%) and female 13 (34.21%), with a male to female ratio of 1.9:1. The age range of the children is seen in Fig. 2. Just over half of the children who presented were less than ten years of age. The various cases of cancers seen in the patients reviewed over the study period is as presented in Fig. 3. All the patients presented at a late stage of disease with all treatments being self-sponsored (Table 1). The socio-economic class of parents were mostly low (81.6%) as seen in Table 2. There was a 44.7% rate of discharge against medical advice due to financial constraints.



**Fig. 1. Percentage distribution of patients**

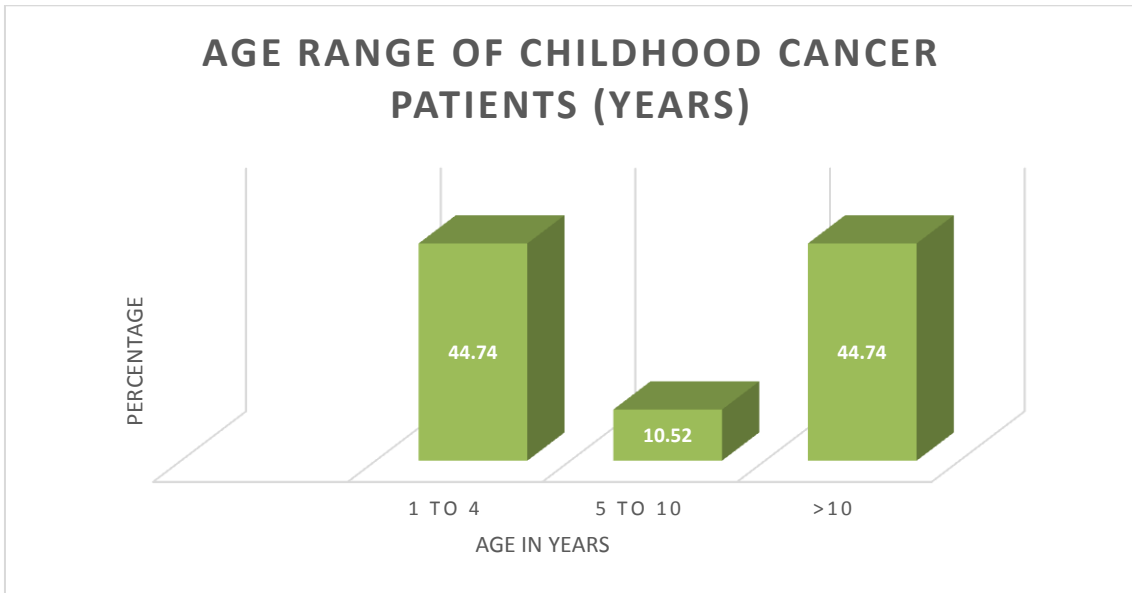


Fig. 2. Age range of childhood cancer patients (years)

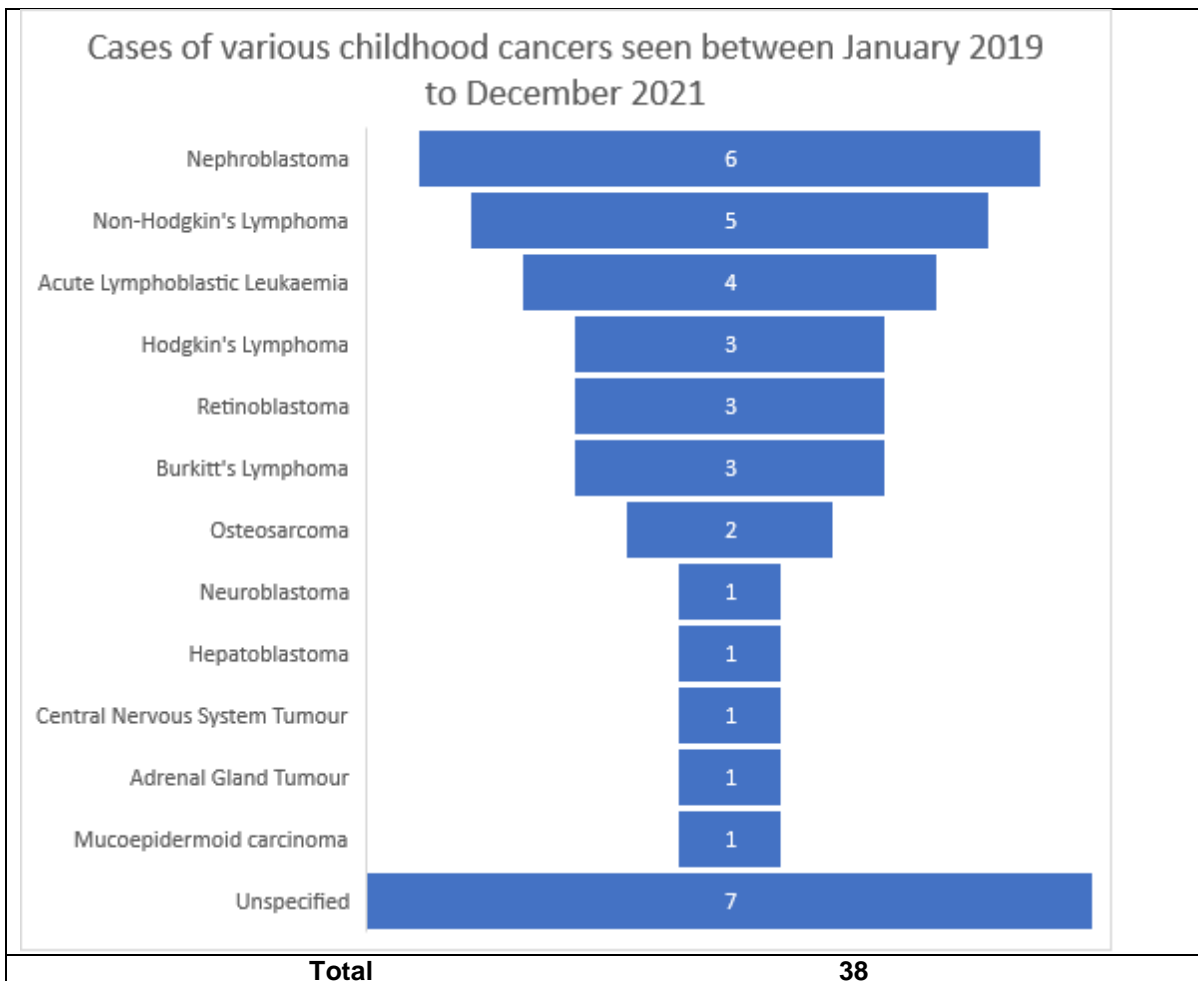


Fig. 3. Cases of various childhood cancers seen between january 2019 to december 2021

**Table 1. Stage at presentation and sponsorship of treatment**

Variable	N	%
<b>Stage of disease at presentation</b>		
Early	0	0.00
Late	38	100.00
<b>Sponsorship for treatment</b>		
Parents	38	100.00
Insurance/ngos	0	0.00

\*NGO -Non-Governmental Organization

**Table 2. Family socio-economic class**

Variable	N	Frequency (%)
High	2	5.2
Middle	5	13.2
Low	31	81.60
<b>Total</b>	<b>38</b>	<b>100.00</b>

**Table 3. Exit from treatment**

Variable	N	Frequency (%)
DAMA (Financial constraints)	17	44.74
DAMA (Other reasons)	11	28.95
Death	10	26.31
<b>Total</b>	<b>38</b>	<b>100.00</b>

\*DAMA – Discharge against medical advice

#### 4. DISCUSSION

The higher percentage of male childhood cancer patients presenting at this facility in the study period is a common trend that has also been noted in various studies from the western part of Africa to Egypt in North Africa [13,14,15]. The age range 1 to 4 years and children greater than 10 years were majority. The high frequency of embryonal tumours such as nephroblastoma and retinoblastoma documented in this centre during the study period could be one of the contributing reasons why children less than 5 years of age were among the most affected [16]. Some other studies had also noted a higher frequency of childhood cancers in this age group [17,18].

While the challenges in the management of childhood cancers are recognized worldwide, they would differ in perspective between the low and middle income countries (LMIC), and the high income ones. For instance, this study showed that all the patients with cancers during the period of review presented late, at stages 3 or 4 of the disease with few showing features of metastasis. This observation is similar to those noted in studies carried out in other parts of Nigeria [13,14,17,19] and Africa [15]. Factors associated with late presentation and diagnosis

in this centre, were found to be multi-factorial amongst which majorly included patient-related causes. The socio-economic and literacy level of most care-givers was quite low as seen in this study. Thus the associated poor awareness and ignorance of care-givers about cancers in the paediatric population, resulted in non-recognition of the symptoms of serious illness early enough. Also contributory, were financial constraints/poverty which affected healthcare seeking behaviours of many families. Late presentation is known to have a negative effect on the prognosis of childhood cancers. Awareness of cancers in children should be increased to tackle this problem.

The healthcare system also played a role in delayed diagnosis of some cancers, in that facilities for immunohistochemistry of some specimens needed for confirmatory diagnosis, was unavailable in the study centre. There was therefore need, for some specimens to be sent to other referral centres. During the COVID 19 lockdown, it became increasingly difficult to send out and receive promptly, such histological samples needed to make prompt diagnosis and institute treatment. The burden of investigations and treatment was borne by parents of affected children. This led to financial burn-out of most

caregivers, who were unable to cope with payments for required histological and laboratory investigations for the confirmation of cancer, as well as sustaining drug purchase even while undergoing chemotherapeutic cycles. Such was noted by other studies within the country, and the African region [15,17,18]. The availability and coverage of the health insurance in the country is still poor, so out of pocket payments for healthcare services remains the norm. Increasing and expansion of the health insurance coverage, and advocating for its increased uptake by state and local government including private companies will mitigate this challenge.

Discharge from care against medical advice due to various reasons was high, noting also the high rate following financial constraints and overall poverty, a trend noted by other researchers [17,18]. As seen in this study, most of the affected families were of the low socioeconomic class. Also worthy of note is that the study period reviewed, spanned through the greater part of the COVID-19 pandemic and lockdown period. This further worsened unemployment and slowed down business progression in trying to curb the spread of the disease [20,21]. Unfortunately, this also resulted in huge financial and economic hardship at the level of many families in most parts of the world, including Nigeria [20,21]. This seems to have further contributed to the observations seen in this study, as most caregivers could not sustain chemotherapeutic drug purchase and investigations needed to appraise treatment progress.

## 5. CONCLUSION

The challenges in the management of paediatric cancer patients included late presentation and diagnosis, financial constraints/poverty, burn-out of caregivers, with a resultant high rate of discharge against medical advice. Greater awareness about childhood cancers, increased advocacy for governmental input by way of resources, infrastructure and health insurance policies would improve outcome. There is also need to drive the establishment of dedicated regional paediatric cancer centres.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Chirdan LB, Bode-Thomas F, Chirdan OO. Childhood cancers: Challenges and strategies for management in developing countries. *Afr J Paediatr Surg.* 2009;6:126-30.
2. Utuk EE, Ikpeme EE. Childhood cancers in a referral hospital in south-south Nigeria: a review of the spectrum and outcome of treatment. *Pan Afr Med J.* 2015;22:325.
3. GBD 2017 Childhood Cancer Collaborators. The global burden of childhood and adolescent cancer in 2017: an analysis of the global burden of disease study 2017. *Lancet Oncol.* 2019;20(9): 1211-25.
4. Akinsete AM, Odugbemi BA, Ogundowole GE, Anene-Nzulu UU, Temiye E and Akinsulie AA. Pediatric oncology in Nigeria: a panoramic view. *J Glob Oncol.* 2019;5:1-7.
5. Hadley LG, Rouma BS, Saad-Eldin Y. Challenge of pediatric oncology in Africa. *Semin Paediatr Surg.* 2012;21(2):136-41.
6. Tanko NM, Echejoh GO, Manasseh NA, Mandong MB, Uba AF. Paediatric solid tumours in Nigerian children: A changing pattern? *Afr J Paediatr Surg.* 2009;6:7-10.
7. Ocheni S, Bioha FI, Ibegbulam OG, Emodi IJ, Ikefuna AN. Changing pattern of childhood malignancies in Eastern Nigeria. *West Afr J Med.* 2008;27:3-6.
8. Okocha EC, Aneke JC, Ulasi TO, Ezendu CE, Umeh EO, Ebubedike UR, et al. Pattern of childhood and adolescent malignancies at a tertiary institution in South-East Nigeria: A ten year study. *Niger J Paediatr.* 2015;42:111-5.
9. Pui c, Gajjar AJ, Kane JR, Qoddoumi IA, Pappo AS. Challenging issues in pediatric oncology. *Nat Rev Clin Oncol.* 2011;8(9): 540-9.
10. Yaris N, Mandiracioglu A, Büyükpamukcu M. Childhood cancer in developing countries. *Pediatr Hematol Oncol.* 2004;21: 237-53.
11. Walubita M, Sikateyo B, Zulu JM. Challenges for health care providers, parents and patients who face a childhood cancer diagnosis in Zambia. *BMC Health Serv Res.* 2018;18:314.

12. Oyedeji GA. Socio-economic and cultural background of hospitalized children in Ilesa. *Niger J Pediatr.* 1985;12:111-7.
13. James BO, Ajayi SO, Ogun OA and Oladokun RE. Factors influencing time to diagnosis of childhood cancer in Ibadan, Nigeria. *Afr Health Sci.* 2009;9(4):247-53.
14. Fasola FA, Shokunbi WA, Falade AG. Factors determining outcome of management of Patients with Burkitt's Lymphoma at the University College Hospital Ibadan, Nigeria- An Eleven year review. *Nig Postgrad Med J.* 2002;9:108-112.
15. Abdelkhalek ER, Sherief LM, Kamal NM, Soliman RM. Factors associated with delayed cancer diagnosis in Egyptian children. *Clin Med Insights Pediatr.* 2014;8(8):39-44.
16. Bassey EU, Udo, EE. Childhood cancers in a tertiary facility in southern Nigeria: A four year update. *Int J Res Med Sci.* 2022; 10(5):1012-1015.
17. Ahmad HR, Faruk JA, Abdullahi M, Olorunkooba AA, Ishaku H, Abdullahi FL, Ogunrinde GO. Pattern and outcomes of childhood malignancies at Ahmadu bello university teaching hospital, Zaria. *Sub-Saharan Afr J Med.* 2016;3: 127-31.
18. Akinsete AM, Awofeso OM, Akere ZA, Akinsulie AO, Temiye EA. Pattern of presentation, treatment, and determinants of outcome of pediatric oncology cases at a tertiary institution in Lagos. *J Clin Sci.* 2018;15:136-9.
19. Brown BJ, Bamgboye EA, Sodeinde O. Causes of death in childhood cancer at the Department of Paediatrics, University College Hospital, Ibadan. *Afr J Med Sci.* 2008;37:7-13.
20. UNDP Nigeria. The covid-19 pandemic in Nigeria: Potential impact of lockdown policies on poverty and well-being. 2020;3:1-11.
21. Nweze AU, Nnadi CF. Effect of covid-19 lockdown on the Nigerian economy: An empirical assessment of Nigerian economy. *Economics and Social Sciences Academic Journal.* 2021;10:23-39.

© 2022 Bassey et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:*  
<https://www.sdiarticle5.com/review-history/89135>