

BARRIERS TO ACCESSING AFFORDABLE ANTICANCER MEDICATIONS IN NIGERIA: A PATIENT -CENTRIC PERSPECTIVE

ABSTRACT

Background; Limitations to accessing affordable medications for cancer patients in Nigeria is increasing on a daily basis. The Nigeria Cancer Health Fund has been established as a means to address the affordability of drugs for patients at treatment centers. However, barriers to accessing these medications still exist, particularly in terms of adherence to oral anticancer medications.

Methodology: The study was a cross-sectional descriptive survey amongst patients with Cancers and other tumor diseases in the Oncology unit of the University of Nigeria Teaching Hospital (UNTH). 200 questionnaires were distributed, 180 were returned hence giving us (98% response rate) and making our sample size (n= 180). Data gotten was analyzed using the IBM statistical package for Social Sciences (SPSS).

Results; A total of 180 participants' were included in the study, there was an unequal distribution of respondents' gender (44.4% males and 55.6% females). Only about 36.7% of participants reported to be within the age range of (46- 55 years) which was the most participated age range. More than 60% of the study participants are married. Just about half of the study participants had their monthly incomes between fifty thousand to ninety-nine thousand naira while others earned less.

Conclusion; In this study, barriers to accessing affordable anticancer medications were noted. Government aiding /subsidizing the cost of anticancer medication as well as availability of anti-cancer medicines in government hospitals should be improved.

Keywords; Barriers, Affordable, Anticancer, Medication, Nigeria

1. INTRODUCTION

Cancer is considered to be a worldwide problem and is among the primary root causes of death.(1)

Access to affordable anticancer medications is a serious challenge in Nigeria, affecting the ability of patients to receive necessary treatment. In 2019, over 930 million people worldwide experienced financial hardship as regards health care and, annually, about 100 million people were impoverished.(2).

High cost of anti-cancer medicines is a global issue, and places financial burden to patients, families and societies in both low and middle-income countries (LMICs) and High Income countries (HICs); however, economic factors including wealth levels determine the pattern of affordability. Individuals diagnosed with cancer are likely to declare bankruptcy and experience other financial hardship than individuals with no cancer(3).

Limitations to accessing affordable medications for cancer patients In Nigeria is increasing on a daily basis. The Nigeria Cancer Health Fund has been established as a means to address the affordability of drugs for patients at treatment centers (4). However, barriers to accessing these medications still exist, particularly in terms of adherence to oral anticancer medications (5). Patients in Nigeria may face specific challenges related to medication access and use, which can affect their ability to adhere to treatment regimens.

The affordability of anticancer medications remain a significant obstacle for many patients with cancer, not only in Nigeria but globally (6). This barrier to care can have serious consequences, including increased risk of drug resistance and cancer recurrence (5). In order to improve patient outcomes, it is essential to address issues related to the availability, affordability, access, and pricing of anticancer medicines (7). Efforts to overcome barriers to cancer care in Nigeria and other African countries require collaboration and innovation (8).

Africa has a small number of publications on the availability and affordability of anti-cancer medicines, and studies done reported a scarcity of important medicines including anti-cancer medicines(9)

Limited information on anticancer medicines has a high and direct effect on cancer health care in Nigeria. Consequently, it hinders the adoption of effective measures the government and partners can use to ensure that cancer patients receive efficient and inexpensive anti-cancer medicine accordingly. From a medical perception, cost remains a serious challenge to the availability of oncological care, highlighting the need for interventions to improve affordability, access, and pricing of anticancer medications (10)

By providing patients with access to innovative medicines and addressing affordability concerns, it is possible to improve cancer care outcomes in these regions. Additionally, policies aimed at improving affordability and ensuring patient access to prescription drugs can help to reduce the financial burden of cancer treatment (11). In order to optimize cancer care in Nigeria, it is important to consider patient-centric perspectives and experiences. Understanding the factors that influence medication usage, as well as patient expectations and barriers toward treatment, can help to inform strategies for improving access to affordable anticancer medications (12).

By addressing these barriers and working towards greater affordability and access to medications, it is possible to enhance cancer care outcomes for patients in Nigeria and other developing countries.

The aim of this cross-sectional study was to conduct an assessment to determine the level of availability and affordability of the cancer treatment drugs in the cancer treatment hospitals in Nigeria.

METHODOLOGY

Study Design and Setting

The study was a cross-sectional descriptive survey amongst patients with Cancers and other tumor diseases in the Oncology unit of the University of Nigeria Teaching Hospital (UNTH). The University of Nigeria Teaching Hospital is one of Nigeria's first generation University Teaching Hospitals. She boasts of having the best hands in the country, with more experienced professionals. The Oncology pharmacy unit has more specialized pharmacists in the oncology specialty. This results in higher patient volume than the hospital's capacity.

Study Population and Instrument

The study participants were drawn from patients with Cancers and other tumor diseases in the Oncology unit of the University of Nigeria Teaching Hospital (UNTH). The questionnaire was a self-administered knowledge-based questionnaire that evaluated the barriers to accessing anticancer medications in Nigeria.

Data collection tool

Data were collected by using questionnaire form developed for this study. We did a pilot study to evaluate the effectiveness of questionnaire form. During pilot study, we surveyed 20 patients and recorded data regarding the topic. Pilot study provided satisfactory results for the questionnaire form to be used in our study.

Data collection process

The questionnaire was a self-administered knowledge-based questionnaire that evaluated the barriers to accessing anticancer medications in Nigeria. The study tool was distributed over 4 weeks from 1st of September to 30th September 2024. The survey tried to achieve this using different approaches like deciphering the primary reason for difficulty accessing medications, whether economic or financial issues pose a big problem to their accessing anticancer medications etc.

Data Analysis

Data were analyzed using the IBM statistical package for Social Sciences (SPSS). Frequencies and percentages as well as other descriptive statistics were computed for necessary socio-demographic characteristics, finances, social support, unavailability of medication and outcome.

RESULT

Of the 200 questionnaires distributed, 180 were completed and returned (98% response rate). From Table 1, There was an unequal distribution of respondents' gender (44.4% males and 55.6% females). Only about 36.7% of participants reported to be within the age range of (46- 55 years) which was the most participated age range. More than 60% of the study participants are married. 40% of the respondents had a monthly income of 50,000 to 99,000 while 31.1% earned below 50, 000 naira monthly. Only about 28.8 earned above 100,000 naira. 95.6% of the patients were not under any health insurance. 62.2% of these patients were not employed. 93.3% of the patients identified as Christians. Breast cancer, prostate cancer, cervical cancer, and pelvic cancer were the predominant cancer at 25.5%, 23.3%, 16.7%, and 7.8% respectively.

Unavailability of Medication: Most of study participants often experience difficulty accessing anticancer medications while some patients noted that they have never experienced any difficulty in accessing medications. Just about half reported that they sometimes experience medication stock-out.

However, a few agreed to have never experienced medication stock-out. More than half of the participants agreed that financial constraint was their primary reason for having difficulty in accessing medication.

Finances: Half of the participants skipped their doses due to medication cost. Majority of the participants reported to have experienced financial hardships during the course of treatment which has in turn affected not just them but their families as well. Most of the participants spend (31-50%) of their income on medication while a handful pay 51-80% of the treatment cost out of their own pockets. Some also mentioned to have quit their jobs because of the treatment.

Social Support: Majority of the study participants has their family's support and mentioned it has significantly helped them in the treatment process. Almost half of the participants mentioned that emotional support was very important to them. Nearly 30% still noted that they stigma and discrimination in their daily contact with the society. This still points to the need for continuous sensitization of the general public.

Outcomes: More than half of our respondents agree that the treatment has somewhat improved their quality of life. Just about half of the respondents rated the current state of their health as good which implies there is positive impact and also points out that there are still rooms for improvement.

Table 1. Socio-demographic characteristics.

Socio-demographic factors	Frequency(f)	Percentage (%)
Age	18-25	
	26-35	30
	36-45	24
	46-55	66
	>55	60
Gender	Male	80
	Female	100
Marital Status	Single	40
	Married	114
	Divorced	12
	Widowed	14
Educational level	Primary	34
	Secondary	62
	Tertiary	80
	None	4
Occupational status	Employed	42
	Unemployed	112
	Self-employed	26
Monthly income	<50000	56
	50000-99000	72
	100000-199000	42
	200000-299000	8
	>300000	2
Religion	Christian	168
	Islam	6

	Traditionalist	4	2.2
	Others	2	1.1
Health Insurance	Insured	8	4.4
	Not insured	172	95.6
Cancer Type	Breast	46	25.5
	Lung	6	3.3
	Prostrate	42	23.3
	Colorectal	2	1.1
	Cervical	30	16.7
	Pelvic	14	7.8
	Blood tumor	2	1.1
	Cardiac tumor	2	1.1
	Eye	2	1.1
	Gastrointestinal Stromal Tumor	2	1.1
	Gestational Trophoblastic Disease	2	1.1
	Uterus	2	1.1
	Vaginal	2	1.1
	Vulva	2	1.1
	Others	24	13.3

Table 2. Unavailability of medication (frequency=F, percentage =%, n=180)

Unavailability of medication								
How often do you experience difficulties accessing anticancer medications?	Often		Sometimes		Rarely		Never	
	F	%	F	%	f	%	f	%
		68	37.8	48	26.7	40	22.2	22
How Often do you experience medication stock outs?	24	13.3	82	45.6	48	26.7	24	13.3

Table 3: Reasons for patients' difficulty in accessing medications

Primary reason for difficulty accessing medications	F	%
Financial constraints	118	65.6
Lack of availability	36	20.0
Limited accessibility	14	7.8
Insufficient healthcare provider knowledge	8	4.4
Others	2	1.1
How long do you wait for medication refills (weeks)	F	%
<1	10	5.6

1-2	52	28.9
2-4	94	52.2
>4	22	12.2

Table 4. Finances (frequency=F, percentage =%, n=180)

Finances	YES	
	F	%
Have you ever skipped doses due to cost?	90	50.0
Have you experienced financial hardship due to treatment cost	144	80.0
Percentage of Monthly income that goes anticancer medications	F	%
<10%	14	7.8
11-30%	26	14.4
31-50%	86	47.8
>50%	52	28.9
How has treatment affected your employment status	F	%
No impact	6	3.3
Reduced work hours	54	30.0
Quit job	66	36.7
Others	10	5.5

Table 5: Social support (frequency=F, percentage =%, n=180)

Social support	YES	
	F	%
Do you have support system (family/friends) during treatment?	110	61.1
Have you experienced stigma or discrimination due to cancer diagnosis	46	25.6
How important is emotional support during treatment		
	F	%
Very important	86	47.8
Somewhat important	58	32.2
Not very important	4	2.2
Not at all important	4	2.2

Table 6. Outcomes (frequency=F, percentage =%, n=180)

Outcomes		
How has treatment affected your overall quality of life	F	%
Significantly improved	36	20.0
Somewhat improved	114	63.3
No change	8	4.4
Somewhat worsened	12	6.7
Significantly worsened	8	4.4
How would you rate your current health status		
Excellent	4	2.2
Good	82	45.6
Fair	72	40.0
Poor	20	11.1

DISCUSSION: This study is aimed at evaluating the barriers that hinder patients from accessing affordable anticancer medication. Among the barriers mentioned were financial constraint, difficulty accessing anticancer medication, social support, outcomes to mention but a few.

The socio-demographic characteristics of the study participants were taken and from the results, the study suggests that most of our study participants were within ages 46 years and 55 years and majority were female. It also suggests that more than half were married, just about half reached the tertiary level of education and more than half were unemployed which agrees with the article by (6). It was deduced from the result that over 90% of responders didn't have health insurance which most indicated that they don't have it bureaucratic bottleneck involved in the insurance process. This study is in concordance with the article "Barriers to the Accessibility, Availability and Affordability of Radiotherapy Services in Nigeria" by (6) which was observed that majority of the patients (77.2%) had no health insurance. Most of the responders were diagnosed with breast cancer and prostate cancer which has been identified as the most common cancer for the female and male gender respectively which is in concordance with the study "Barriers and Facilitators of Adherence to Oral Anticancer Medications Among Women with Breast Cancer: A Qualitative Study" by (5) and (10) respectively.

Unavailability Medication; More than 30% of study participants often experience difficulty accessing anticancer medications, just about 30% noted that they sometimes experience difficulty while accessing anticancer medication while some patients noted that they have never experienced any difficulty in accessing medications. Just about half reported that they sometimes experience medication stock-out. However, a few agreed to have never experienced medication stock-out. More than half of the participants agreed that financial constraint was their primary reason for having difficulty in accessing medication while lack of availability of medication is the second major reason why participants cannot access anticancer.

Finances: This factor is vital in the treatment of cancer and other chronic diseases. It greatly impacts on the patient and their families, determining if they will be able to continue treatment, whether or not the children of the patient will complete their education to mention but a few. In this study, half of the participants skipped their doses due to medication cost. Majority of the participants reported to have experienced financial hardships during the course of treatment which has in turn affected not just them but their families as well. Most of the participant spend (31-50%) of their income on medication and in

relation to the earlier mentioned socio-demographic were it was noted that majority of our participants earn between fifty to ninety-nine thousand naira monthly. This supports the study that mentioned that the expenses of the treatment course, splurge these patients and their families into financial hardship or doom and in a very unfortunate case were the patients succumb to the illness, leaves the families taking care of the pile of debt left behind which was created during the cause of treatment. From the results of the study, a handful pay 51-80% of the treatment cost out of their own pockets which agrees with the article written by (6) where he mentioned that, in a country like Nigeria with a myriad of multi-dimensional challenges and a high percentage living below the poverty line. Coupled with a healthcare system that is predominantly dependent on out-of-pocket expenditure, uptake of such services could be prohibitive.

Some also mentioned to have quit their jobs because of the treatment. This explains why most patients after their cancer diagnoses, refuse treatment with fear that the emotional, financial and psychological trauma associated with the treatment will cause more harm than good. Some improvements that can be made was cited in the article, 'Availability, Affordability, Access, and Pricing of Anti-cancer Medicines in Low- and Middle-Income Countries: A Systematic Review of Literature' which mentioned that, governments should launch initiatives to promote generic prescribing by physicians, improve price transparency and empower patients to shop around for cheaper medicine prices(9)

Social Support: Majority of the study participants has their family's support and mentioned it has significantly helped them in the treatment process. This is a great improvement from where we were as a Nation it goes a long way to showcase that sensitizing the masses works. Almost half of the participants mentioned that emotional support was very important to them which agrees with the study carried out by (13) where Patients highlighted the importance to be recognized as unique, respected and acknowledged for their values and needs, and expected these qualities to be reflected within the encounters with their Oncologists. This is expedient as they are always with oncology specialist at every step of their treatment and the way they are treated by their, physicians, pharmacist and nurses will go a long way to soothe them. Nearly 30% still noted that they stigma and discrimination in their daily contact with the society. This still points to the need for continuous sensitization of the general public.

Outcomes: More than half of our respondents agree that the treatment has somewhat improved their quality of life. Just about half of the respondents rated the current state of their health as good which implies there is positive impact and also points out that there are still rooms for improvement.

Africa and indeed Nigeria is confronted with a high burden of diseases and cancer is one of its major challenges. Adequate investment in the healthcare sector, could substantially prevent any further loss of from the African population and stimulate economic growth and development. This study is also in agreement with studies in Uganda (14) and in agreement with that of Mostert et al. Which report that patients are the prime recipients of the impact of corruption on the health sector as access to necessary cancer care especially in (LMICs), is disrupted by longer waiting queues, delayed diagnosis and late or intermittent cancer treatment, resulting in recurrence or poor cancer survival or prognosis (15).

CONCLUSION AND RECOMMENDATION: In this study, barriers to accessing affordable anticancer medications were noted which ranges from unavailability of medication, finances, social support and outcomes. Government aiding /subsidizing the cost of anticancer medication as well as availability of anti-cancer medicines in government hospitals should be improved and the Government should curb underfunding for cancer treatment, or poor stock management in public hospitals causing suboptimal consumption of anti-cancer medicines. All cancer treating hospitals that have the option of chemotherapy shall ensure the availability of anti-cancer medicines in stock.

Data Availability

The dataset used in this study can be made available upon reasonable request to the corresponding author.

Declarations**Ethical approval and consent to participate**

Ethical clearance was obtained from the University of Nigeria Teaching Hospital Health Research Ethics Committee (NHREC/05/01/2008B-FWA00002458-1RB00002323), Ref: UNTH/HREC/2024/11/3043 where we collected the data. All study procedures were performed in accordance with the 1964 Declaration of Helsinki. Informed consent was obtained from all the participants before participating in the study.

Consent for publication

NA.

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REFERENCES

1. Siegel RL, Miller KD, Fuchs HE, Jemal A. Cancer statistics, 2022. *CA Cancer J Clin.* 2022;72(1):7–33.
2. Eze P, Lawani LO, Agu UJ, Acharya Y. Catastrophic health expenditure in sub-Saharan Africa: systematic review and meta-analysis. *Bull World Health Organ.* 2022 Apr 4;100(5):337.
3. Altice CK, Banegas MP, Tucker-Seeley RD, Yabroff KR. Financial Hardships Experienced by Cancer Survivors: A Systematic Review. *J Natl Cancer Inst.* 2017 Feb;109(2):djw205.
4. Adeniji AA, Dulal S, Martin MG. Personalized Medicine in Oncology in the Developing World: Barriers and Concepts to Improve *Status Quo*. *World J Oncol.* 2021 Jun;12(2–3):50–60.
5. Onwusah DO, Ojewole EB, Manyangadze T, Chimbari MJ. Barriers and Facilitators of Adherence to Oral Anticancer Medications Among Women with Breast Cancer: A Qualitative Study. *Patient Prefer Adherence.* 2023 Dec 31;17:2821–39.
6. Akinwande A, Ugwuanyi D, Chiegwu H, Idigo F, Ogolodom M, Anakwenze C, et al. Barriers to the Accessibility, Availability and Affordability of Radiotherapy Services in Nigeria. 2022 Dec 25;1–10.
7. Bamodu OA, Chung CC. Cancer Care Disparities: Overcoming Barriers to Cancer Control in Low- and Middle-Income Countries. *JCO Glob Oncol.* 2024 Aug;(10):e2300439.
8. Kunene V, Mahlangu J. Access to Systemic Anticancer Treatment and Radiotherapy Services in Sub-Saharan Africa. In: Adedeji OA, editor. *Cancer in Sub-Saharan Africa: Current Practice and Future* [Internet]. Cham: Springer International Publishing; 2017 [cited 2024 Nov 14]. p. 175–90. Available from: https://doi.org/10.1007/978-3-319-52554-9_13
9. Ocran Mattila P, Ahmad R, Hasan SS, Babar ZUD. Availability, Affordability, Access, and Pricing of Anti-cancer Medicines in Low- and Middle-Income Countries: A Systematic Review of Literature. *Front Public Health.* 2021;9:628744.
10. James ND, Tannock I, N'Dow J, Feng F, Gillessen S, Ali SA, et al. The Lancet Commission on prostate cancer: planning for the surge in cases. *The Lancet.* 2024 Apr 27;403(10437):1683–722.
11. James SL, Abate D, Abate KH, Abay SM, Abbafati C, Abbasi N, et al. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet.* 2018 Nov;392(10159):1789–858.
12. t Hoen E. Access to Cancer Treatment: A study of medicine pricing issues with recommendations for improving access to cancer medication [Internet]. Oxfam International; 2015 [cited 2024 Nov 14]. Available from: <https://oxfamilibrary.openrepository.com/handle/10546/344070>
13. Lipovetski O, Cojocar D. Achieving Patient-Centered Care with Shared Decision-Making among Colorectal Cancer Patients in Israel. *Rev Cercet Si Interv Sociala.* 2020 Sep 14;70:250–64.
14. Bouchard M, Kohler JC, Orbinski J, Howard A. Corruption in the health care sector: A barrier to access of orthopaedic care and medical devices in Uganda. *BMC Int Health Hum Rights.* 2012 May 3;12:5.

15. Mostert S, Njuguna F, Kemps L, Strother M, Aluoch L, Buziba G, et al. Epidemiology of diagnosed childhood cancer in Western Kenya. Arch Dis Child. 2012 Jun;97(6):508–12.

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