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Assessment of management of four major non-communicable diseases among patients currently on admission in Abia State University Teaching Hospital, Aba, Nigeria

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Abstract

Background*: Most low-income and middle-income countries across the globe like Nigeria are featuring an increasing predominance of chronic, non-communicable diseases (NCDs). Management of NCDs is a multidimensional construct that focuses on clients' perceptions and evaluations of the treatments and care received while on admission. It is one of the factors that can affect the outcomes of healthcare and client's use of health services.*

The rise of NCDs is driven primarily by four major risk factors; tobacco use, physical inactivity, use of alcohol and unhealthy diets. The main purpose of management of major NCDs is to reduce the incidence, prevalence, exposure of people to NCDs risks, morbidity associated with NCDs, and improve the overall quality of life of persons living with NCDs.

Objective*: To assess the extent to which four major non-communicable diseases among patients currently on admission in Abia State University Teaching Hospital, Aba, Nigeria are managed.*

Materials and method: *A cross–sectional descriptive study which evaluated the management of patients on admission in Abia State University Teaching Hospital, Aba was done. A semi-structured questionnaire, Focus Group Discussion, observation and in-depth were used to collect information. Also, code-frame was created to group the codes and this was manually done before entering them into SPSS version 26 for analysis.*

Results*: The mean age of patients on admission was 47.2 ± 13.058. There were 31 NCDs with NCDs incidence of 31.0%. The incidence of Hypertension was 12.0% and that of cancer was 3.0%. Self-management and clinical management of NCDs were used and only those with severe cases are admitted for further management. The hospital equipment and healthcare personnel were adequate while the environmental conditions were inadequate.*

Conclusion*: The fact that the environmental conditions of the hospital were inadequate shows that the hospital environment requires further improvement that will befit a tertiary hospital standard.*

Keywords*: Assessment, management, NCDs, admission, Aba.*

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I. Background:

In Nigeria, communicable diseases such as malaria, pneumonia, tuberculosis, trypanosomiasis, yellow fever, Lassa fever, hepatitis and human immune deficiency virus (HIV) have long been among the most prominent contributors to disease burden [1]. However, like most low-income and middle-income countries across the globe, countries in sub-Saharan Africa are undergoing a rapid epidemiological transition characterized by a shift from disease-burden profiles dominated by communicable diseases and childhood illnesses to profiles featuring an increasing predominance of chronic, non-communicable diseases (NCDs). Epidemiology of NCDs in sub-Saharan African is limited by the lack of established vital statistics systems and reliable population-level data for most countries in the region [2]. The rise of NCDs is driven primarily by four major risk factors, namely tobacco use, physical inactivity, use of alcohol and unhealthy diets.

Most of these diseases are preventable as they eventually progress in early life due to lifestyle and behavioral changes [1]. The main focus on these diseases generally and their risk factors are on the elements of self-management and to reach a consensus about the prevention of NCDs at all stages of life. In Nigeria, management of NCDs emphasize more on nutrition interventions which are considered essential in managing the risk of NCDs [2] It is believed that important prevention management strategies will include individual (lifestyle

and behaviour management), family and societal (awareness management), state and national (health policy decision), and global

The main purpose of management of these major NCDs is to reduce the incidence, prevalence, and exposure of people to NCDs risks, reduce morbidity associated with NCDs, and improve the overall quality of life of persons living with NCDs. It focuses on strategies such as primary prevention and clinical care including early detection, provision of treatment services, health system strengthening involving the training of health workers, and the development of human resource capacity.

Self-management focuses on empowering and preparing patients to manage their conditions and ensuring that they do not relapse or experience adverse health outcomes. Self-management practices by patients constitute core components in the management of NCDs [3] where the patients use coherent strategies with clinician recommendations [4] It is important to understand that persons living with NCDs may have to grapple with the social, psychological, and physical strains which include dealing with signs and symptoms, negative emotional impacts, disability, difficult lifestyle adjustments, complex medication regimens, and access to useful medical care.

NCDs patients should be involved in healthy food intakes such as fruits, vegetables, moderate salt intake, fishes, increased physical activities and changes ones' lifestyle by cessation of tobacco use and avoidance of excessive alcohol intake. Carbohydrates, protein, and fats are the primary components of food with omega-3 alpha-linolenic and the omega-6 linoleic acids are essential fatty acids that are needed to make some membrane phospholipids. Vitamins (B, C, A, D, E, and K) are the classes of essential organic molecules (such as cofactors) that are required in small quantities for most enzymes to function properly. Patients should be supported in acquiring anthropometric equipment for monitoring the conditions at home and transportation fare to attend hospital reviews as need arise. Family and societal management requires creation of awareness of NCDs and the risks factors and the dangers associated with them. Healthcare workers and government at all levels should be involved in public enlightenment campaigns by educating patients on the possible causes, prevention and control of NCDs

Hospitals are the healthcare facilities where some NCDs patients especially those with complications are managed on out-patient and in-patient services. These services include laboratory services, emergency care, surgeries, health education and accommodation at the wards of health facilities and drugs listed on the essential drug lists [5]. The application of these services will make possible achievement of SDG 3.4 targets of reducing by one third, premature mortality from NCDs through prevention and treatment by the year 2030 [6,7]

State and national government should show sufficient political commitment and demonstrate high levels of priority to NCDs. State and National systems should be developed and strengthened with adequate fund allocation for the prevention and control of NCDs. Government at all levels should ensure that management of NCDs is affordable and possibly covered by National Health Insurance Authority (NHIA) to make it cheaper as done in other African countries [8].

The burden of non-communicable diseases (NCDs) continues to increase globally especially in developing countries, with different risk factors contributing to the surge [9]. This is as a result of rapid urbanization, and westernization of lifestyle and dietary habits [10,11 ,12 ,13 ,14 ,15]. Low-and middle-income countries (LMICs) are likely to suffer a greater burden of these diseases compared to the developed nations because of the limited healthcare financing for NCDs in LMICs as well as the relatively weak and unprepared health systems for these diseases [15,16,16, 17].

Government at various levels in Nigeria can make policies to create favourable environment by establishing playgrounds, bike lanes, sidewalks, community parks and village square areas with beautiful landscapes where citizens can gather, jog, meet, play during leisure to encourage people to participate in physical activity. These measures can address the risk factor of physical in-activities. It was observed in a study that the presence of available space for a stroll contributed to longevity [18] and another study reported that walking reduces the risk of coronary artery disease among women [19]. Once these structures exist, participation in physical activity becomes much easier and habitual. Nigerian citizens must understand that healthy practices are evidence-based solutions to reducing the burden of NCDs. They must agree with their health providers, cooperate with the government authorities to make use of provided structures, and consciously develop self-motivation and cues for imbibing healthy lifestyle practices.

Generally, people should avoid sedentary lifestyles, get vaccinated, consciously make time for regular medical screening and avoid patronizing herbal remedies that have no scientific evidence of their efficacy. Other policies like a price increase through a tax increase and nonprice increase should also be in place to discourage tobacco use. Presently, Nigeria takes nonprice measures such as smoking bans in public places, banning tobacco advertising and promotion, and restriction of alcohol access to people aged below 18 years, but there is little implementation of these measures. The World Health Organization (WHO) calculated that if all countries increase their taxes on cigarette packs by 50%, there would be 49 million fewer smokers [20] and this would prevent 11 million deaths caused by smoking [21]. It is noteworthy that development of healthy lifestyle practices against the

risk of NCDs should not be left to individual willpower alone. Habits are best when there are structures, motivational support systems and national policies. Healthcare professionals in Nigeria should be trained in delivering healthy lifestyle measures.

NCDs were previously viewed as diseases of the effluent with high prevalence in developed countries [22]. This is no longer the case however while still grappling with the burden from communicable diseases, LMICs are experiencing an increase in the occurrence of chronic NCDs

The efficient management of these four major NCDs is imperative to achieve the Sustainable Development Goal, SGD 3.4 target of reducing premature deaths from NCDs by one-third by 2030 [23]. Hence this study will assess the management of four major non-communicable diseases on patients on admission in Abia State University Teaching Hospital Aba.

II. Materials and methods

Study area:

This study was carried out in Abia State University Teaching Hospital in Osisioma-Ngwa Local Government Area, (LGA) Abia State. Abia state is one of the 36 states of the Federal Republic of Nigeria. It was created on 27th August 1991 from part of the then Imo State. It is found in the south-east geopolitical zone and is located at latitude 5 25 N, 7 30 E and longitude 5 417 N, 7.500 E of the equator with an elevation of 2.214ft (385m) above the sea level. Its capital city is Umuahia. It has a land area [24] of 6,320km^2 with an estimated population of 2,833,999 according to the recent population census of 2006 [25]

Upon the creation of Abia state in 1991, Osisioma-Ngwa LGA was carved out from Obioma Ngwa LGA and the other LGAs were Obi-Ngwa and Ugwunabgo LGAs. Osisioma is a semi-urban area and is in close Connections with the commercial industrial city of Aba. It has 10 electoral wards namely. Ama – Asaa, Amaitolu/Mbutu/Umuojima, Amasator, Amator, Amavo, Aro-Ngwa, Okpu-Umuobo, Oso Okwa, Umunneise and Uratta [19]. Osisioma-Ngwa is a city found in Abia State, Nigeria. It is located 5.11 Latitude and 7.37 Longitude, and it is situated at elevation 385 meters above sea level. The LGA has an area of 198 Square Kilometer and a population of 220,662 as per 2006 census data of Nigeria projected to 296,906 at 2.7% in 2024 annual growth rate [25]. Abia State University Teaching Hospital is located in Amator electoral ward.

Osisioma-Ngwa people generally make a living as farmers, traders, artisans and craftsmen, civil servants, hoteliers. The people are a heterogeneous population of both literate and illiterate persons but probably with a preponderance of semi-literate individuals and also both people of low and high socio-economic status, albeit more of the former. Just like most Igbo communities, a very high percentage of the populations are Christians by religion, though with varying denominations and hence certain differences in doctrines. Many persons in the population believe in, and patronize prayer houses in seeking solutions to their problems. Traditions beliefs are still upheld by many persons. Some combine this with their Christian beliefs, while yet some others are core traditionalists though fewer [26]. There are many Primary Health Centres, General Hospitals in Aba from where patients with complicated NCDs are referred to Abia State University Teaching Hospital (ABSUTH), Aba, Monogamy and polygamy are types of marriages practiced in this area, Fufu, tapioca, yams cocoa yams, maize, three leafed yam (unu), fruits, vegetables are types of food the people eat. There are alcoholics, smokers of different cigarettes, drug addicts and the likes found in the area.

Study Design: A descriptive cross-sectional study was adopted during the research.
Study Population: The study population comprised all the patients who were currently on admission. In essence, a total of one hundred (100) patients currently on admission for NCDs who gave their consent were studied.
Inclusion Criteria: All the NCDs patients on admission who gave their consent were included in the study.
Exclusion criteria: Patients who were not on admission for NCDs were excluded from the study.

Research Instruments

The data collection instruments included: Questionnaires, Checklist, Focus Group Discussion (FGD) and in-depth Interview.

Method of data collection

There was personal in-depth Interview with the Chief medical Director (CMD, MD)/Chairman Medical Advisory Committee (CMAC), Director of administration of the institution, Director Nursing services, Consultants in-charge of the management of the NCDs, Chief scientist of the institution, the head of the account section of the department, the head of nutrition/dietician of the institution, the chief security of the institution, chief driver, and the head of National Health Insurance Scheme of the institution. Focus Group Discussion was carried out with nine (9) of selected patients with non-communicable diseases met at the General outpatient department in the hospital.

A pre-tested semi-structured questionnaire was administered and self-administered to the patients currently on admission. Thereafter, the methods of managing the patients on admission were assessed using the check-list.

Data analysis: Data collected were analysed using Statistical Package for the Social Sciences (SPSS) software version 26.0. Data were presented in frequency tables. Qualitative data collection during interviews, running surveys, and running focus groups such as interview transcripts, notes, video and audio recordings, images, events, behaviours, activities, and text documents were gathered in a place. This data was unstructured with more depth in information. These were plotted in a spreadsheet like excel, coding was done manually and assigned with meaningful titles. Inductive coding based on available data was used instead of deductive coding which was based on list of predefined codes. Code-frame was created to group the codes. Hierarchical coding frame was used to derive insight from the analysis. Depending on number of times a particular code occurs, common themes were used. Respondents' segmentation which was based on demographic, age, interest and behaviour were applied on qualitative analysis. CAQDAS / NVivo - CAQDAS software exist for qualitative analysis. Sub codes were created to increase insight of the analysis. (IBM SPSS) as a software was used as it may make coding ease.

Data presentation: Data generated were summarized using tables and frequency distribution of variables. Descriptive analysis was done by calculating relevant means and standard deviation for quantitative variables, while qualitative variables were analyzed using proportions.

Ethical consideration and informed consent: Informed consent was obtained from Abia State University Teaching Hospital, Aba as well as from the patients on admission. Ethical consideration was obtained from the ethical committee of t Abia StateTeaching Hospital.

III. RESULTS:

Table 1: Descriptive statistics of patients' age at last birthday.

Variables		Values
Descriptive statistics of age of patients at last birthday	Mean	47.2
	Median	46.0
	Mode	48.0
	Std Error of Mean	1.306
	Std Deviation	13.058
	Variance	170.507
	Skewness	.711
	Std. Error Skewness	.241
	Kurtosis	.743
	Std. Error of Kurtosis	.478
	Range	70
	Minimum	22
	Maximum	92

Table 1 shows descriptive statistics of patients' age last birthday. The age distribution of the patients is positively skewed. Please see table 1 for more details.

Table 2: Socio-demographic variables of patients on admission.

Variables		Frequency (N)	Percentage (%)
Age group of patients on admission.	18 – 23	2	2.0
	24 – 29	5	5.0
	30 – 35	12	12.0
	36 – 41	12	12.0
	42 – 47	25	25.0
	48 – 53	20	20.0
	54 – 59	7	7.0
	≥60	17	17.0
Total		100	100.0
Gender of the patients	Males	64	64.0
	Female	36	36.0
Total		100	100.0
Level of education of the patients currently on admission	No formal education	3	3.0
	primary	1	1.0
	Completed secondary	74	74.0
	Completed tertiary	22	22.0
Total		100	100.0
Marital status of the patients currently on admission	Single	21	21.0)
	Married	79	79.0
Total		100	100.0
Religion of the patients currently on admission	Christianity	89	89.0
	Islam	6	6.0

	Traditional religion	5	5.0
Total		100	100.0
Tribe of the patients currently on admission	Igbo	92 (92.0)	92 (92.0)
	Hausa	3 (3.0)	3 (3.0)
	Yoruba	5 (5.0)	5 (5.0)
Total		100	100.0
Occupation of the patients currently on admission	Civil servant	72	72.0
	Trading	12	12.0
	Farming	12	12.0
	students	4	4.0
Total		100	100.0

Table 2 shows the socio-demographic variables of patients, more patients were within the age group of 42 – 47 years and least within the age-group of 18 – 23 years. There were more males than females on admission. On education, most of the patients had completed their secondary education while a few had primary education. Most of the patients were married. Please table 2 for more information.

Table 3: Patients status on admission.

Variables		Frequency (N)	Percentage (%)
Patients status	Communicable diseases	69	69.0
	Non-communicable disease	31	31.0
Total		100	100.0

Table 3 shows that patients who had communicable diseases were more on admission than patients who had non- communicable diseases. Please see table 3 for more details

Table 4: Patients and incidence of major NCDs managed while on admission

Variables		Male	Female	Total (100)	Incidence (%)
Patients and incidence of major NCDs managed while on admission.	Diabetes Mellitus type 1	2 (2.0%)	3 (3.0%)	5	5.0
	Diabetes Mellitus type 2	3 (4.0%)	4 (4.0%)	7	7.0
	Hypertension	6 (6.0%)	6 (6.0%)	12	12.0
	Cancer	2 (2.0%)	1 (1.0%)	3	3.0
	Asthmatic bronchitis	2 (2.0%)	2 (2.0%)	4	4.0
Total		15	16	31	31.0

Findings from table 4 shows incidence of major NCDs managed and that patient who have hypertension 12(12.0%) were more on admission than patients with other NCDs. Please see table 4 for more details.

Table 5: Types of cancer diseases seen on admission

Total		Frequency (N)	Percentage (%)
Types of cancer diseases seen on admission	Breast cancer	1	33.3
	Cervical Cancer	1	33.3
	Ovarian cancer	1	33.3
Total		3	99.9

Findings from table 5 show that cancer diseases such as breast cancer, cervical cancer and ovarian cancer appeared once respectively. Please see table 5 for more details.

Table 6: Patients on admission and Methods for settling hospital bills:

Total		Frequency (N)	Percentage (%)
Patients on admission and Methods for settling hospital bills:	Out of pocket expenditure	81	81.0
	Family paid	5	5.0
	Employer	0	0.0
	Community insurance scheme	3	3.0
	National health insurance scheme	11	11.0
Total		100	100.0

Findings from table 6 showed majority of the patients settled their hospital bills through out of pocket expenditure. Please see table 6 for more details.

Table 7: Patients on admission and types of insurance schemes they enrolled.

Variables		Frequency (N)	Percentage (%)
Patients on admission and types of insurance schemes they enrolled.	None	86	86.0
	Private insurance scheme	0	0.0
	Community Insurance scheme	3	3.0
	National Insurance scheme	11	11.0
Total		100	100.0

Table 7 showed majority of the patients did not enroll in any type of insurance scheme. Please see table 7 for more details.

Table 8: Patients on admission and the amount deposited.

Variables		Frequency (N)	Percentage (%)
Patients on admission and the amount deposited.	#5,000.00	47 (47.0)	47 (47.0)
	#6,000.00	1 (1.0)	1 (1.0)
	#7,000.00	1 (1.0)	1 (1.0)
	#10,000.00	23 (23.0)	23 (23.0)
	#15,000.00	14 (14.0)	14 (14.0)
	#20,000.00	10 (10.0)	10 (10.0)
	#23,000.00	1 (1.0)	1 (1.0)
	#25,000.00	2 (2.0)	2 (2.0)
	≥#50,000.00	1 (1.0)	1 (1.0)
Total		100	100.0

Findings from table 8 showed that a good number of the patients deposited #5,000.00 while other patients deposited different amount of money. Please see table 8 for more details.

Focus group discussions (FGDs)

FGDs conducted in Abia State University Teaching Hospital (ABSUTH), Aba.

In ABSUTH, nine (9) patients participated in the FGDs. The patients' age ranged from 40 years to 47 years. Seven (7) patients were married while two (2) patients were single. Six (6) patients had secondary education while three (3) patients had tertiary education. Five (5) patients had two male children and three female children, three (3) patients had no child and one had two male children only.

On the occupation of the patients, they had varied trades. Two (2) of the patients are tailors, three (3) are farmers, three (3) drivers and one (1) a petty trader. The question on knowledge of NCDs showed that only two (2) patients knew what non-communicable diseases are. They were able to mention diabetes mellitus, cancer and hypertension as NCDs but they did not know that Asthmatic Bronchitis is also a non-communicable disease. The rest could not mention any non-communicable disease. On the question of the health conditions the patients were admitted for, in six (6) of the patients came to hospital because of swelling legs, two (2) were admitted because of nausea vomiting and one (1) came because of headache.

On the types of diet patients consume most of the patients preferred cereals, two (2) preferred swallow and the rest of the patients preferred boiled food. Most of the patients preferred drinking water to other types of drinks. Only one (1) female patient took snuff, the rest of the patients did not take hard drugs of any kind. Six (6) of the patients came to hospital with swelling legs, two (2) came with nausea, two (2) came with vomiting and only one came with headache.

On the types of diet patients prefer to consume most of the time, three (3) patients prefer cereals, two (2) prefer swallow like garri, pounded yam, fufu, pounded unripe plantain and the rest of the patients prefer boiled food like boiled yams, plantain, potatoes. Interestingly, a good number of the patients prefer drinking water to drinking alcohol and other mineral drinks. Only one (1) female patient prefer taking snuff to other drinks.

Concerning the question on the limitation patients encounter when seeking medical care, seven (7) of the patients said availability of regular services, presence of specialist doctors, good hospital environments, and cordial relationship with healthcare staff encourage them to attend hospital whenever they are sick. Others asserted that the cost for screening, and the high cost of drugs discourage them from seeking medical care in the hospital. However, the patients suggested that if medical care services are made free, that they will be motivated to seek regular medical care when sick.

On how patients pay hospital bills, majority of the patients said they pay by out of pockets, some said family members assist in settling their hospital bills. Only one (1) patient said that his hospital bills are usually settled by the National Health Insurance Authority (NHIA).

Findings from In-depth Interviews

Questions were asked on Hospital policies guiding healthcare services in the institution. Responses from the participants show that the hospital is usually open for healthcare services to all grades of patients irrespective

of their socio-economic statuses. Also, that the policy is that the patients will be subjected to history taking, physical examinations and laboratory investigations before commencing treatments. On the procedures in the management of patients, the respondents said that the policy is that patients will be treated on outpatient basis and the treatments are on individual cases as the situation demands and that only cases with major complications that are admitted and attended to.

A greater number of the stakeholders emphasize that they approve the policy of admission for only critically ill patients with complications. Admission of patients to general or private wards is determined by the patient's social and financial statuses.

Reacting to the question on how patients settle their hospital bills, the participants asserted that a greater number of the patients settle their hospital bills by out-of-pocket expenditure and a lesser number of the patient settle their hospital bills by National Health Insurance Authority. For example, the participants held that patients from some public companies like Nigerian Breweries, Banks and private companies who retained the services of the hospital pay the medical bills of their staff after treatment through the National Health Insurance Authority.

On the question of how the staff members are trained and retrained for effective management of NCDs, respondents asserted that training and retraining were made available to all the staff members. They said that training was done through daily post-call reviews, post-graduate training, weekly unit presentations, seminars, annual conferences, Continuous Professional Developments (CPDs) organized by the hospitals, Nigerian Medical Association (NMA) and Non-governmental Organizations (NGOs) which are usually not sponsored by the Hospital or Government but by participants.

Concerning the question on methods of managing NCDs, a good number of the participants maintained that there were no special methods for managing NCDs, that cases of NCDs were subjected to history taking, observation, laboratory investigations and then administration of drugs just as it was done for communicable diseases. However, they stated that special attentions are usually given to NCDs with complications. The respondents also emphasized that there are practically no differences in the management of non-communicable diseases as NCDs are preventable though amenable lifestyle changes, massive health education and public enlightenment campaigns unlike communicable diseases that involve vaccines and immunization for prevention. It was emphasized that both types of diseases are treated on outpatient basis if the patients present mild to moderate symptoms but they are admitted to the medical wards mainly when the cases present severe complications.

On availability of facilities for management of NCDs, a worthy number of the participants avowed that facilities are available and functional. They stressed that the facilities are maintained on regular basis. The participants emphasized that there are personnel to maintained available facilities for the management of NCDs and that they are on full-time status. On resources availability to patients, the participants maintained that there are specialist clinics that are manned by endocrinologist, cardiologists, neurologists, physiotherapist, laboratory scientist and with equipment like, Electrocardiogram, (ECG) Echo radiography (ECHO), Ultrasonography and some available medications including Atorvastatin Calcium, Fluvastatin Sodium, Lovastatin (attocor), Lisinopril, Captopril, furosemide (lasis), Nifedipine Nicardipine for managing patients.

The question on availability of personnel, the participants stated that there are consultants in different disciplines such as Medicine, Pharmacist, resident doctors, House officers, Pharmacy interns, nurses, and that these staff work on full time basis. The participants added that the qualified health personnel are inadequate for the number of patients managed and that the ones available are poorly remunerated.

On the challenges encountered when managing the cases, the participants averred that the challenges of management of NCDs are mainly financial limitations on both the government and the patients' sides. Patients are poor and they also pay out-of-pocket to settle their bills. They stated that the main problem is that the government lacks the will to fund health facilities resulting to high financial involvements where some patients find it difficult to procure drugs for their treatments. The participants emphasized the inability of the government to support procurement of some essential hospital facilities as well as training of staff. Other challenges reported by the participants include the late presentation of cases to the hospital, lack of patients' commitment to drug treatments and non-compliance to instructions.

On whether there are financial supports from national and international bodies to assist in the hospital in procuring some of their needs, some participants reported that there are basically no assistance in form of funding or grants from either local or international organizations. However, the participants reported that they received occasional financial and material support from philanthropist like the legislators/politicians who donate equipment and erect some buildings as part of their constituency support funds.

The responses to the question on how drugs used in managing NCDs are sourced, the respondents reported that drugs for NCDs management are sourced from Pharmacy representatives and middlemen only. They also stated that drug revolving funds according to Bamako initiatives are adopted to ensure that availability, affordability and quality drugs are always maintained and sustained.

On the suggestions the respondents made on how to improve the management of NCDs, the participants suggested that the government should increase budgetary allocation to healthcare especially in the areas of

equipment and staffing. They also suggested the need for regular training and retraining of staff, the need for the National Health Insurance Authority (NHIA) scheme to be strengthened with a view to making healthcare accessible, available and affordable, the need to employ more staff because of the dire need of manpower requirement and that the issues of brain drain should be addressed in conjunction with relevant stakeholders.

Discussions on findings from patients currently on admission:

The findings from patients on admission showed that the mean age of patients on admission in ABSUTH Aba (47.2±13.058). The age distribution of patients in ABSUTH is positively skewed, P< 0.05.

The age group distribution of patients on admission showed that the older the patients were, the more they were on admission in the tertiary health institution. This means that between the ages from 42 to 47 several patients have already been admitted for NCDs showing that the patients might have indulged in risky lifestyles that exposed them to NCDs. The reasons why older patients were more on admission than the younger patients may be that dietary habits and behaviours, smoking of cigarettes, alcohol intake, sedentary life styles which are risk factors for NCDs are commonly seen more in the elderly than the youths

Also, NCDs are more in male than in females among those in admission, the reason may be that females sought outpatient treatment in order to take care of their children at home and possibly take care of the male while on admission. This finding collaborates with a study in Ibadan [28] in another study in rural community, Eastern Nigeria [29]

Level of education distribution among patients showed that those who had completed secondary education were more on admission than other levels of education in in ABSUTH, Aba, the reason may be that it is a teaching hospital and located in urban area. Patients of lower educational level who may be involved in occupations like artisans, faming, carpentry, drivers, mechanics and labourers which may appear more stressful and demanding than occupation of higher educational levels. So, patients of lower educational levels may be more prune to NCDs than less stressful occupations like banking, teaching and administrative works. Moreover, irregular and non-payment of salaries experienced by civil servants which has forced many of them to engage in several unhealthy lifestyles and poor food intake just to maintain their families may also result in increase in NCDs.

Marital status of the patients currently on admission in the tertiary health institutions showed that married patients were more in admission than single patients in ABSUTH, ABA. The reason may be that married patients were more vulnerable than single patients to falling ill, P>0.05. The implication may be that married patients' dietary habits, alcohol consumptions, insufficient or inadequate physical exercises may be responsible for the development of NCDs which results in being admitted in hospital for treatment more than single patients.

Occupation of the patients currently on admission in the tertiary health institutions in 2023 showed that civil servants were more on admission than patients of other occupation in ABSUTH. The reason may be due to the urban status of the location of the hospital where good number of the patients were either involved in trading or in civil service jobs.

Patients status on admission in ABSUTH, Aba showed that more patients with non-communicable disease were managed in the hospital, the reason may be that it is a teaching hospital with specialist consultant of different field and more NCDs patients referred from other hospitals to ABSUTH, Aba. Hypertension was the commonly managed NCDs in the hospital and this may be that there are more specialist consultants who manage the condition which attract the patients to the hospital. There were more type 2 diabetes mellitus than type 1 were managed in the hospital and the reason may be type 1 diabetes mellitus may have been seen in patients of under 18 years being inherited and auto-immune disease which this study did not cover.

The hypertension is the most commonly managed NCDS with incidence of 12.0% while cancer the least managed NCDs with incidence of 3.0% in ABSUTH, Aba. This implied that there may more specialist consultants who attracted more hypertensive patients or may be the medical bills are affordable which made more patients to access care in the hospital. For the management of cancer NCDs patients, it may be that there are not specialized consultants and requisite equipment for the management of NCDS.

That only 31 (31.0%) NCDs patients were managed out of 100 patients seen in the hospital implied that the hospital managed more of communicable diseases than NCDs. That only three cancer diseases namely breast cancer, cervical cancer and ovarian cancer were managed in the hospital implied that they may not have requisite manpower and relevant equipment for the management of cancer disease, it may also be that their medical bill are high such that many cancer patients seek care from other health facilities.

That majority of the patient settled their medical bill by out of pocket expenditure while only few settle their bills by National Health Insurance Authority (NHIA) implied that patients may not enroll in NHIA as they may not be aware of the existence of NHIA or that they may not be public servants who are covered by NHIA. This was similar to a study in University of Nigeria Teaching Hospital, Enugu where majority of patients settle their medical bills by out of pocket expenditure [30]. That majority 70 (70.0%) of the patients deposited between #5,000.00 and #10,000.00 on admission and this implied that their medical billing system may be moderate and affordable or that patients may not be wealthy to deposit more money on admission

Discussions on the findings from In-depth Interview:

The fact that stakeholders such as chief Medical Directors, Chairman Medical Advisory Committee, Provost of College of Medicine, Deans of Clinical Sciences, Directors of nursing services, Heads of department of clinical services, Heads of Laboratory Scientist and Heads Social Welfare Department were used for the in-depth interview implied that all the information on the running of the hospital will be generated. Knowing that the hospitals were open for healthcare services to all grades of patients irrespective of their socio-economic statuses implied that patients patronize the hospitals and major complications were admitted and attended to. Policy of admission was adopted by stakeholder and emphasized that only critically ill-patients with complications were admitted, Patients' social and financial statuses determined admissions to general and private wards. The positions of the stakeholders were that majority of the patients settled their hospital bills by out-of-pocket expenditure and few settled theirs by National Health Insurance Authority. Training and retraining were made available to all the staff members through daily post-call reviews, post-graduate training, weekly unit presentations, seminars, workshops, annual conferences and Continuous Professional Developments (CPDs). These trainings are organized by the hospitals, Nigerian Medical Association (NMA) and Non-governmental Organizations (NGOs) which are usually funded by the participants.

Cases of NCDs were subjected to history taking, observation, laboratory investigations and then administration of drugs just as done for communicable diseases. Majority held the opinion that there were no differences in the management of non-communicable diseases as NCDs were preventable through lifestyle changes, massive health education and public enlightenment campaigns unlike communicable diseases that involve vaccines and immunization for prevention. Both diseases were treated on outpatient basis. The functional and available facilities were maintained on regular basis. Endocrinologist, cardiologists, neurologists, physiotherapist, laboratory scientist were specialist who managed NCDs. Magnetic Resonance imaging (MRI), Electrocardiogram, (ECG) Echo radiography (ECHO), Ultrasonography were the equipment used for the management. Atorvastatin Calcium, Fluvastatin Sodium, Lovastatin (attocor), Lisinopril, Captopril, furosemide (lasix), Nifedipine Nicardipine were the medications used for managing patients.

Challenges of management of NCDs were mainly financial limitations on both the government's and the patients' sides. Patients were poor and they also paid out-of-pocket to settle their bills. Government lacked the will to fund health facilities, late presentation of cases to the hospital, lack of patients' commitment to drug treatments and non-compliance to instructions were some other challenges. The government should increase budgetary allocation to healthcare especially in the areas of equipment and staffing, regular training and retraining of staff, the need for the National Health Insurance Authority (NHIA) program to be strengthened with a view to making healthcare accessible should be encouraged.

There are specialist medical consultants, nurses, laboratory scientists, welfare workers and other support staff who managed the four major NCDs in ABSUTH, Aba. Also, there are relevant equipment and medications for the management in the hospital. However, some patients are challenged with financial problems in the settlement of their medical bills.

IV. Conclusion

There was inadequate patients' awareness of the four major NCDs and available health care services for their use. Most of the NCDs patients access care directly from the tertiary health institutions rather than passing through primary health care and secondary health facilities first for care. Most of the patients with NCDs faced significant problems in getting sufficient medical support for their regular follow-ups, treatment and rehabilitation services, whilst several new NCD cases were likely remained undiagnosed, or diagnosed late during this period.

V. Recommendation

Public health enlightenment campaign should be mounted to educate the general public on what NCDs are, the causes, preventive and control measures. Manpower and equipment should be provided at primary health centres and all levels of care. Healthcare services should be available, functional and affordable for prospective patients.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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