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DESCRIPTIVE ASSESSMENT OF MEDICAL OUTREACH SERVICES, BENEFITS AND FACTORS INFLUENCING SUCCESS OF OUTREACH PROGRAM IN RURAL COMMUNITIES OF ENUGU STATE

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ABSTRACT

Medical outreach services is evidence based strategy aimed to improve universal access to healthcare of underserved or rural populations. This study is aimed to describe the healthcare services delivered during medical outreach, benefits and the factors influencing the success of outreach program in a rural low resource country. The study was a community based descriptive cross sectional study of 660 adult participant in Enugu State with health complains within the services of an ongoing medical outreach. A two - stage sampling technique was used to select the communities where a total population study was done. A mobile fixed method of outreach was used and data collected were analyzed using proportions and chi – square. About half, 52.5% of participants received promotive services as a gateway to the outreach services. One quarter (27.4%) of adults screened was positive for malaria parasite. The prevalence of HIV (1.8%), diabetes (4.1%), hypertension (45.6%), overweight (27.0%) and obesity (10.9%) were within the national levels. As many as 86.1% received treatment for common illnesses. The commonest factors for success of the outreach were free services, presence of doctors, nurses and drugs, nearness of communities and influence of community leaders of which free services was associated with uptake of services. Medical outreach services mirrors primary healthcare services and when standardized for actors and players willing to use it for cooperate social responsibilities, it will serve as a useful tool for universal health access.

Contribution/Originality: This study documents the benefits of outreach programme and the factors influencing them. It further emphasized that a standardized outreach program embraced by sponsors, state and local governments is a vital alternative vehicle to deliver healthcare to underserved areas in low income countries and consequent universal healthcare.

1. INTRODUCTION

They do benefit from target health education and counselling as related to their health problem during screening and consultation because of the busy nature of the outreach programs. Medical outreach services is one of the ways to ensure improved and continued access to healthcare, both in human resources and service delivery to the remote and underserved areas or populations of a country. Eric, et al. [1] it's aimed to overcome barriers to care and improve equity in access to healthcare. Eric, et al. [1]; Nxumalo, et al. [2] it is an important part of socio economic programs that alleviates the burden of poverty where the services are mostly offered free or in some few cases subsidized. Freeborn, et al. [3] in 2011, World Health Organization accepted outreach as an evidenced based

strategy to improve universal access to health care of the remote areas or population. O'Sullivan, et al. [4] The service comprises collectively or loosely of promotive, preventive, curative, rehabilitative and referral services which could be done as short term medical service trip or long term medical service trip, each with its own consequent advantages and disadvantages. Stone and Olson [5] medical outreach programs involve different approaches or strategies to ensure service delivery such as mobile clinics, health caravans, rotational, telemedicine, telephone - based and mobile app approaches.(1) Mobile outreach and health caravan service delivery involves provision of mobile teams of trained skilled health workers and commodities from a higher level facility in the city to a low level facility in the remote areas. It's the commonest outreach strategy that's acceptable and advertising Eric, et al. [1]; Solom and Brucem [6].

The provision of medical outreach services are taken up by players and actors which include governmental organizations, non – governmental organizations (NGOs), health institutions or hospitals, private companies or individuals, politicians and professional bodies. Services are provided either as voluntary services or financial incentives. Eric, et al. [1]; Nxumalo, et al. [2] these stakeholders encounter lots of barriers and challenges to medical outreach services which includes physical / geographic barriers (distance of communities which affects point of access care), Healthcare barriers (recruitment of skilled professionals), social barriers (language and culture) and financial barriers (funding of commodities, consumables, food, transport and incentives). Huot, et al. [7] challenges to outreach services includes lack of comprehensive data (since outreach are done on a small scale), sustainability of the programme, technology and political will Eric, et al. [1].

Outreach services provide benefits to the populations depending on the nature of service provided. Directly, they provide the people with services not available to them, prevent fatal outcomes and complications from delay. It provides disease awareness, increases healthcare demand and confidence in the health system. Indirectly, it frees rural populations from isolation of skilled healthcare delivery services, gives a closer surveillance of the population and continuing education of health workers Eric, et al. [1].

Worldwide, the proportion of rural population is still high though decreasing with years. In the less developed countries, 49.1% of population as of 2015 lived in rural areas and projected to be 46.4% by 2020. In sub-Saharan Africa, 60.2% of the population as of 2015 live in the rural areas and is projected to be 57.2% in 2020. Eric, et al. [1] the population of Nigerians living in the rural areas in 2018 was 49.66% of the total population down from 51.4% in 2016. World Bank [8]; Trading Economics [9] Enugu state, Nigeria has 17 Local Government Areas of which 5 are designated as Urban (Enugu North, East, South, Nsukka and Oji River) with 35.36% of total population. There are still huge percentage of the population living in the rural and remote areas who have to access healthcare in far urban areas at the expense of their daily expenditures. Enugu [10] the Primary Healthcare centers are challenged with problems of underfunding, unavailability of drugs and quality services with no midwife or doctors in the PHCs. Udenta and Udenta [11]; Nkwo, et al. [12] though there was upward increase in utilization of PHCs services from 2007 due to receptiveness of free MCH services in Enugu State. Uzochukwu, et al. [13] a study in rural health inequities found that 63% of global rural population do not have access to healthcare because of inadequate funding. Editorial Review [14] Nigeria has relatively sufficient primary health centers with reasonable geographic access (75% are within 2 kilometers to health centers and 95% are within 8 kilometers to health centers) and adequate community health workers but very few skilled workers. Kress, et al. [15] however, the PHCs performance is hindered by uncoordinated supply chain, lack of financial access, lack of infrastructure and poor health worker performance and attitude. The average cost of PHC visit is 2.3 USD for children and 3.20 USD for adults and can go up to 8 USD. Kress, et al. [15] these cost are subsidized through medical outreach services including provision of personnel incentives, transportation, food, water and drinks, drugs and consumables, screening kits, medical equipment and logistics Alade, et al. [16]; Mangenah, et al. [17].

The lack of standardization on the range of outreach services had led to numerous unregulated outreach programs that were self-appraising, advertising and had led to gaps in quantifying the health and economic impacts

of outreach programs in Nigeria. Also outreach programs in low income countries had not been fully embraced by the local and state government as a means for redistribution of healthcare services. This study is aimed to describe the healthcare services delivered during medical outreach, benefits and the factors influencing the success of outreach program in a rural low resource country.

2. METHODOLOGY

The study area was Enugu State in the South East geo political zone of Nigeria. It is bounded in the west by Anambra State, on the South by Abia State, on the North by Kogi State and the East by Benue and Ebonyi States. It is made up of 17 Local Government Areas (LGAs) distributed among three senatorial districts and has a population of 4,881,500 people within a total area of 7,618 sq.km. National Population Commission [18] the major occupations in the urban areas are trading and formal employments while in the rural hinterland, its is mainly susbsistence farming and animal pasturing. The inhabitants are mainly Igbo with mixture of other tribes and are predominantly christians. There are seven district hospitals, 36 cottage hospitals and 366 primary health care centers, including comprehensive health centers, health centers, health clinics and health posts. Primary health centers are usually staffed by community health officers and community health extension workers supported by registered nurses and midwives Uzochukwu, et al. [13].

The study was community based descriptive cross sectional study of adult patients with medical and surgical complaints within the services of the outreach program while complains outside the services of the outreach program were excluded.

A total population study of adults who attended the outreach program was done using multistage technique. One Local Government Area (LGA) was selected from each of the three Senatorial district in Enugu State using simple random sampling by balloting method. Second was by selection of a community in each of the selected LGAs by simple random sampling using balloting method. The outreach lasted for a period of three weekends, two days per community per weekened, Friday and Saturdays. A total of 110 adult participant per day were seen giving a total of 660 participants.

A mobile fixed method of outreach was used to reach the selected communities in Enugu State. Data collection tools was done using interviewer administered questionnaire designed according to the objectives of the study. It contained 3 sections. Section A which is the sociodemographic variables, section B contained the health care services received by patients and section C are the factors influencing services received. Proforma was designed for screening of malaria, Human Immunodeficiency Virus (HIV), Hepatitis B surface antigen (HBsAg), Blood Pressure (BP), Random Blood Sugar (RBS) and Body Mass Index (BMI). Malaria parasite was screened using Rapid Diagnostic Test Kits (RDT) with a buffer solution. HIV was screened with HIV test kit while HBsAg was screened with HBsAg test Kit. Blood pressure was measured with OMRON Arm – type fully automatic digital Blood pressure monitor. Raised BP was defined using Joint National Committee on Hypertension (JNC) 7 classification as systolic BP ≥ 140 mmHg and/or Diastolic BP ≥ 90 mmHg. Blood sugar was screened using Accu – check active test strips and glucometer (Roche Diagnostics GmbH, Mannheim, Germany). Diabetes was defined as Random blood glucose ≥ 200mg/dl. Weight and height were measured using standard Standiometer. BMI was calculated as weight in kilograms divided by height in meter squared.

Data were entered and analyzed using Statistical Package for Social Science (SPSS) version 20 and presented using frequency tables, whereas summary measures for categorical and quantitative data were done using proportions and means respectively and chi – square was employed to assess associations.

Ethical Clearance was gotten from the Health Research Ethics Committee (HREC) of University of Nigeria Teaching Hospital, Ituku/Ozalla, Enugu State, Nigeria. The approval number is NHREC/05/01/2008B – FWA00002458 – 1RB00002323. Permssions as well as consent were gotten from the community heads, stake holders and the participants .

3. RESULTS

The mean age of participants were 54.93 ± 15.72 years with age range from 17 years to 100 years. Half of respondents, 50.1% were 41 – 64 years. Majority of the participants, 71.8% were female and 59.4% were married while 31.4% were widowed. About 62.6% have below primary education. About 43.5% were farmers while 21.6% were unemployed. Participants were almost from Igbo ethnic group and mostly Christians. See Table 1.

Table-1. Socio - demographic characteristics of respondents.

Variables	Frequency	Percentage
Age		
17 – 40	125	18.9
41 – 64	332	50.1
65 – 100	206	31.1
Mean	54.93	
Standard deviation	15.72	
Sex		
Male	187	28.2
Female	476	71.8
Marital status		
Single	55	8.3
Married	394	59.4
Separated	6	0.9
Widowed	208	31.4
Educational level		
None	213	32.1
Primary	202	30.5
Secondary	168	25.3
Tertiary	80	12.1
Occupation		
Farming	289	43.5
Trading	119	17.9
Artisan	60	9.0
Civil servant	52	7.8
Unemployed	143	21.6

The outreach services were able to deliver promotive, screening, curative and rehabilitative services. Half of participants, 52.5% received health education and other promotive services. Less than half, 41.2% were screened for malaria parasite of which 26.7% had 1+. The prevalence of HIV was 1.8% and HBSAg was 1.0%. Only 4.1% were diabetic, 37.7% were moderately hypertensive and 55.2% were of normal weight. Majority of participants, 86.1% were treated for common diseases while 39.2% received eye care and minor surgery. The commonest rehabilitative services were physiotherapy while few received referral services. See Table 2.

Among the factors that influence the success of the medical outreach services, 39.5% of participants noted the effects of free health services as most influencing factors followed by 34.1% of participants noting the effects of presence of doctors, nurses and drugs. See Table 3.

Free services were found to be associated with the uptake of the services offered by the medical outreach program. See Table 4.

4. DISCUSSION

Consistently, as with many adult demographic areas, the middle age and elderly group were more receptive to healthcare services compared to other adult age group as found in this study with mean age of 54.93 ± 15.72. This is the age at which health starts failing with increasing burden of disease. This agreed with similar study in Benin City and Enugu, Nigeria, where the middle age and the elderly group were the highest adult age group receiving health services during medical outreach.

Table-2. Description of healthcare services received by respondents.

Variables	Frequency	Percentage
Promotive Services		
Health education	348	52.5
Environmental sanitation	348	52.5
Nutritional education	348	52.5
Lifestyle / behavioural changes	348	52.5
Screening services		
Malaria parasites	273	41.2
Nil	198	72.5
1+ MP	73	26.7
2++ MPs	2	0.7
HIV	611	92.2
Negative	600	98.2
Positive	11	1.8
HBSAg	601	90.6
Negative	595	99.0
Positive	6	1.0
Diabetes Mellitus	663	100
Normal	636	95.9
Diabetes	27	4.1
Hypertension	663	100
Normal	361	54.4
Hypertensive	302	45.6
Obesity	663	100
Underweight	46	6.9
Normal	366	55.2
Overweight	179	27.0
Obesity	72	10.9
Curative services		
Treatment of common illness	571	86.1
Dental care + minor surgery	33	5.0
Eye care + minor surgery	260	39.2
Rehabilitative services		
Physiotherapy	162	24.4
Refractive lens	108	16.3
Referral	48	7.2

Table-3. Factors influencing success of medical outreach services.

Variable	Frequency	Percent
Free services	262	39.5
Presence of doctors, nurses and drugs	226	34.1
Nearness to community	73	11.0
Influence of community leaders	102	15.4

Table-4. Association between factors affecting success of medical outreach and Uptake of the services.

	Health promotion		Statistical test	P – value
Factors	**Received**	**Not received**		
Free services				
Yes	155	107	6.093	0.014*
No	198	203		
Availability of doctors, nurses and drugs				
Yes	116	110	0.505	0.511
No	237	200		
Nearness to community				
Yes	35	38	0.925	0.384
No	318	272		
Influence of community leaders				
Yes	47	55	2.485	0.131
No	306	255		

Note: *Significant.

Isara and Okundia [19]; Onodugo, et al. [20] the findings of this study contrast with a study in Wakiso district, Uganda on health seeking behavior, where the younger adult age group of < 36 years were higher. Musoke, et al. [21] This could be due to associated effect of cost in determining health. This further highlights the unmet needs of an increasing population of elderly and their associated burden of diseases. The study found that more than three – quarters of the patients receiving medical care were female which agreed with a study in Enugu. Onodugo, et al. [20] this could be due to higher number of females in this study, the higher disease burden with increasing age and better health seeking behavior. More than half of the participants were married while one third are widowed. This was the prevalent distribution of marital status in the adult group in rural settings. The commonest occupation of participants were farming followed by trading which is common in the rural areas.

The medical outreach programme was able to deliver healthcare services to participants, notable were the promotive, screening, curative and rehabilitative services. This study was able to describe the uptake of this services by the participants. It was found that 53.2% of the participants were able to receive the promotive services which were collectively offered as health education, environmental sanitation, nutritional and lifestyle modification education. This service was made an important part of the outreach program to enable participant have understanding and control of their health and predisposing factors to diseases. Most outreach program had not quantified the uptake of promotional services. The promotional services in this medical outreach program was a generalized open services delivered prior to screening, consultation and dispensing of drugs. It was made the gateway to the medical outreach services as an indicator to the uptake of the services. The proportion of patients who did not receive this services were those who joined the program later, either from the testimony of those who have received treatment or from other domestic and business engagements. However from the screening services conducted, 41.2% were screened for malaria parasite using rapid diagnostic test, out of which, 27.4% had malaria parasite in the blood. The screening were conducted on adults with constitutional symptoms unlike in children under 5 years. This finding agreed with prevalence of malaria in studies in Plateau, Kano, Nigeria and Kenya. Nanvyat, et al. [22]; Mbah, et al. [23]; Jenkins, et al. [24] the low prevalence is because of acquired immunity to malaria parasite in adults making them less likely to be susceptible to malaria infection in an endemic area compared with children. Among 92.2% screened for HIV, 1.8% were found to be positive. This finding was closer to the findings by the Nigerian HIV/AIDS indicator and impact survey (NAIIS), where Enugu state has a prevalence of 2.1% and national prevalence was 1.4%. NACA [25] this could be due similarity in methodology where households are surveyed (community based testing) rather than clinic patients (case finding). Among 90.6% screened for HBsAg, 1.0% were found to be positive. This differed with the findings in Calabar, Nigeria where a higher prevalence of 8.8% was found. Okonkwo, et al. [26] this could be to the difference in the methodology of target population. The latter was conducted among populations with exposure history to risk factors to hepatitis virus.

The prevalence of diabetes mellitus found was 4.1% which agreed with a study done in Enugu and Benin, Nigeria, with prevalence of 4.4% and 4.6% respectively, Dahiru, et al. [27]; Isara and Okundia [19] but disagreed with another study in Enugu with prevalence of 18.8%. Onodugo, et al. [20] However, the prevalence of diabetes in Nigeria ranges from 0.8% to 11% which still support our findings. Dahiru, et al. [27]; Uloko, et al. [28] the prevalence of hypertension was found to be 45.6% which agreed with study in Benin, Nigeria with systolic prevalence of 46.7, Isara and Okundia [19] but differed with study in Enugu with prevalence of 24.6. Onodugo, et al. [20] the observed difference could be differences in sampling population. However, the current prevalence for hypertension in Nigeria ranges from 2.1% to 47.2%. Akinlua, et al. [29] patients with the diagnosis of diabetes and hypertension were given targeted health promotion talks which were counseling and health education, salt intake reduction, moderate exercise, tobacco use and harmful use of alcohol. Adherence to drugs and clinic attendance were emphasized while those with very high blood pressure were referred to the secondary hospital for continuity of cares. The survey found that less than one third, 27% of the population were overweight with prevalence of obesity found to be 10.9%. These findings differed from Jesse, Delta State, Nigeria, where the prevalence of

overweight and obesity were 17.1% and 4.7% Umuerri, et al. [30] and study in north central Nigeria with 23.3% of population overweight and 8% obese. Etukumana, et al. [31] This narrow difference could be accounted by difference in socioeconomic class across the areas studied like lifestyle patterns and dietary differences. However, agreed with the prevalence for overweight and obesity in Nigeria which ranged from 20.3% - 35.1% and 8.1% - 22.2% respectively Chukwuonye, et al. [32]. This survey found that treatment for common illness was the most common curative services followed distantly by the eye care and dental treatment which are both components of primary health care. About one quarter of the participants received physiotherapy services for varying ranges of arthritic pains while 7.2% were referred to secondary and tertiary hospitals for medical conditions that could not be attended to within the limit of the outreach. Medical outreach program can be delivered as a primary health care services or a specialized health care services. This study found that the reasons for participation in the outreach program was mostly due to removal of the financial barrier in accessing care by the program through provision of free health services followed closely by the presence of doctors, nurses and availability of drugs while the influence of community leaders and proximity to community were found to be distance reasons. The free services were found to be associated with the uptake of services by the participants using health promotional services as a gateway to the program. This agreed with a study in rural communities of North Central, Nigeria where financial access was dominant reasons but differed in the proximity of communities as second. Audu, et al. [33] the difference could be that the study in North Central, Nigeria looked at the choice of healthcare services. This agreed with studies in Enugu, Nigeria and Wakiso, Uganda where inadequate funding, drugs, long distance to facilities and quality service (doctors and nurses) were noted as challenges facing primary healthcare delivery in Enugu State. Udenta and Udenta [11]; Musoke, et al. [21] However these are the dominant reasons for sustainability of primary healthcare mostly in the rural areas where many are not gainful employed.

5. CONCLUSION

By improving service delivery in rural and underserved populations in the mode of health promotion, screening, treatment of common diseases, rehabilitation and referral services that mirrors services obtain in the usual secondary and tertiary services. Medical outreach services addresses inequities in access to healthcare both financial and geographical access.

6. RECOMMENDATIONS

Government in low income countries should as a policy adopt outreach services as tool to help redistribute the concentrated human resources and commodities from the urban health centers to the rural health centers in a periodic sustainable way. Philanthropist either as private or cooperate entities interested in medical outreach as a co - operate responsibility should be encouraged to follow standardized outreach services of health promotion, screening, treatment, rehabilitation and referral to have a good impact.

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