

The Values of ENT Medical Outreach in Suburb of Ekiti State, South-Western Nigeria

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Abstract:

Objectives: To review the function of an otolaryngology (ENT) specialist outreach service in the various towns of Ekiti by the Federal Teaching Hospital Ido-Ekiti (FETHI) ENT team over a 5 year period (2013 to 2018). The purpose is to highlight the various ENT Problems and the difficulties being faced by the populace which discouraged them from attending the ENT tertiary facilities.

Methods: The ENT and Community Medicine departments' staff maintained a record of all outreach towns and patients profiles seen during each outreach. Data recorded for each visit included the number of patients, biometrics, occupations, ENT Problems with the patients, the procedure/operations done at the outreach site and at FETHI. All these data were analyzed using IBM SPSS version 23 in an attempt to qualitatively measure the impact of the visits.

Results: From 2013 to 2018 a total of 8188 were seen in our outreach out of which 2394 had ENT related problems. From Table 1, it can be seen that most of the patients with ENT problems (N = 672, %age = 28.1) lies in the age group between 41 years to 50 years. There are 22.6% patients in age group of 31—40 years, 15.7% in age group of 21 – 30 years, 11.2% in age group of 51 – 61 years, 10.7% in age group of 11 – 20 years, and 6.9% in age group of 01 – 10 years. There are only 4.8% ENT patients (N = 115) having age of 61 or more years. It can be seen that most of the patients with ENT problem lies from age group of 11 -- 60 years. The patients having age less than 11 years or more than 60 years relatively have less ENT problem as compared to other age group.

Conclusion: In developed countries, outreach by ENT surgeons is important in as much as addressing critical lack of access ENT care in developing countries. However, it should be done on shared values, mutual respect, aspirations, and desire to build a durable and sustainable impact, and best practice which is accepted internationally.

Key Words: Medical outreach, ENT, Surgery

Introduction:

It has been estimated that just over 10% of the global burden of disease requires surgical treatment. However, access to surgical services is unevenly distributed across the world and across regions within the same country. ^(1,2) Currently, less than one-third of the estimated 234 million operations that take place each year are performed in the developing world. Lack of access to surgical services results in significant morbidity and

mortality. Strategies to improve access to surgical services focus on improving the surgical capacity of district hospitals. The Bellagio Essential Surgery Group (BESG) and the World Health Organization (WHO) recommend that services at the district hospital level be strengthened by ongoing surgical training. ^(3,4) One strategy to achieve this is to take surgical expertise to the district hospitals with the aim of delivering clinical care and imparting surgical skills – known as the surgical outreach programme. ^(5,6)

World Health Assembly adopted a resolution to prevent deafness and hearing by calling governments to integrate strategies for ear and hearing care within primary health care programs, implement prevention and screening programs for population with high risk, establish training programs for health workers and finally improve access to cost-effective, affordable, high-quality assistive hearing technologies.⁷ Therefore, lack of access to most basic ENT care remains to be the global greatest challenge.⁸ In addressing inequality of access to ENT care, significant and sustained investment in training and education of specialized nurses, surgeons, clinical officers, anesthetists, and audiologists must be there in both developed and developing countries.⁹ In developed countries, outreach by ENT surgeons is important inasmuch as addressing critical lack of access to ENT care in developing countries.¹⁰ However, it should be done on shared values, mutual respect, aspirations, desire to build a durable and sustainable impact, and best practice which is accepted internationally.¹¹ Rising health care cost has proven to be an issue in both developed and developing worlds.¹² Countries have constantly grappled with this issue. The availability of specialists, cost involved in consultation fees, equipment and infrastructure limits access to health services in general.¹³ ENT medical outreach is primarily designed for improving access and quality of specialists care for patients.¹⁴ In contrast, the set-up costs at times outweigh the benefits of the clinics in most developed countries.¹⁵ Most studies conducted on effectiveness of medical outreach are from developed countries having structured healthcare system.¹⁶ Health delivery pattern is different in developing countries compared to developed countries.¹⁷ In fact, there is no single study that describes the value of medical outreach of specialist clinic in a primary care setting.¹⁸

Setting:

Ekiti is a state in western Nigeria, declared a state on 1st of October 1996. As one of the newest states of the Nigerian federation, it was carved out of the territory of old Ondo State, and covers the former 12 local government areas that made up the Ekiti Zone of old Ondo State.¹⁹

Population of Ekiti was (2016 National Population Commission of Nigeria Projection) 3,270,800.

The state has 114 towns, each with its own kingship empire and dialect. Our Hospital Outreach team has been to nearly all the towns over the last 10 years. The State is mainly an upland zone, rising over 250 meters above sea level. It lies on an area underlain

by metamorphic rock. It is generally an undulating part of the country with a characteristic landscape that consists of old plains broken by step-sided outcrops that may occur singularly or in groups or ridges. The State enjoys tropical climate with two distinct seasons. These are the rainy season (April–October) and the dry season (November–March). Temperature ranges between 21° and 28 °C with high humidity. The south westerly wind and the northeast trade winds blow in the rainy and dry (Harmattan) seasons respectively. Tropical forest exists in the south, while savannah occupies the northern peripheries. Table Shows the lists of some of these towns and the average distance to our tertiary health facilities in Ido-ekiti. There are only Four (4) ENT specialists (Surgeons) in the whole of Ekiti state. Two (2) of which are in Federal Teaching Hospital Ido-Ekiti and remaining two (2) in the State University Hospital, Ado-Ekiti. It is only the Federal Teaching Hospital Ido-Ekiti that is well equipped with tertiary ENT facilities. The distance and sometimes difficult access roads are the major factors dissuading the residents of these towns from accessing our facilities. Hence the reason for initiating the medical/surgical outreach.

Objectives and Planning:

Before planning for a medical outreach, it is essential to outline the outreach objectives.²⁰ Here, the objectives of the medical outreach include focusing on the long-term improvement of health care delivery in the host country, building and strengthening local capacity by training of local educators, establishing local centers of teaching, clinical, and research excellence, and finally benefiting the hosts and not visiting the team members. ENT medical outreach requires planning and good preparation between the collaborating institutions and host.²¹ To achieve this, there are various things that need to be put in place. Firstly, a mutual agreement about the set objectives is set.²² In relation to this, both host and collaboration institutions have to agree on the same objectives and target to achieve them mutually. Secondly, there is need to clearly understand the constraints and capabilities of the host.²³ For instance, one should not demand investigations that are not readily affordable or available.²⁴ Thirdly, the sources of finances and funding should be clearly spelled out to ensure that the host is not financially disadvantaged.²⁵ Mutual respect is another aspect that should be upheld.²⁶ This ensures that the status of the hosts is not undermined among their community, colleagues or even political leadership.²⁷ Fourthly, an ENT medical outreach is

supposed to avoid duplicating locally available services and efforts²⁸. It should ensure that it is far much original and to the point. Lastly, the hosts should be given freedom and a priority to be hosts.²⁹ For example, they should be given the chance of choosing a restaurant of their choice. In planning and implementation, we collaborated with volunteers in the target communities and with faith-based organizations. We also used media campaigns focused on media that are used and respected by our target audience in different Ekiti towns and communities. Be aware of inexpensive opportunities, such as taking a booth at a community event, that allow you to get the word out and to make more community contacts. Also of effective use was community-based peer educators who helped at delivering health outreach messages.

Methodology:

To establish an ENT medical outreach, it is always good to engage medical professionals in a host country, more so as individuals or through institutions such as universities, professional medical societies or hospitals in order to identify the areas which ought to benefit more from the outreach.³⁰ Organizing outreach programs via nonmedical individuals such as politicians should be avoided. This ensures that the outreach is not influenced by political rallies or it is not based on political campaign purposes.³¹ Also, it is essential to have a formal memorandum of understanding or partnership agreement. Creating Awareness by town-criers, marketplaces, sociopolitical meetings, traditional festivals, lectures and exhibitions, TV, radio, and newspapers are vehicles of information that are used to get and distribute health information among rural inhabitants. The outreach should be conducted by experienced and qualified clinicians.³² It should not be an opportunity for training the visiting trainees.³³ Additionally, registration requirements must be complied with as prescribed by the host's medical and dental council.³⁴ Finally, individual medical malpractice insurance is applicable in the country hosting the outreach. Now, to carry out the research, there are several things that the local researchers are required to be engaged in. They should be involved in identifying research ideas, obtaining ethics approval from the host institution, planning and execution of the research, as coauthors of publications proceeding from the research, and be offered financial assistance to present the research in international forum.³⁵ In regards to measuring outreach results, it is not in order to measure outreach success by the number of surgical cases done or fitted hearing aids.³⁷ This is

because doing so reflects short-term, non-sustainable outcomes. The outcomes rather should be determined in terms of skills transfer to host surgeons, provision of surgical and diagnostic equipment, building research capacity in the host country, and developing guidelines and resource appropriate protocols.

Execution:

To execute ENT medical outreach, there is needing to properly select and manage patients. Provision should also be made for censoring of surgical patients.³⁸ Concerning the donation of equipment, one should check whether the equipment conforms with the standards of the host institution.³⁹ Also, the costs of custom clearance should be budgeted for. One should also ensure that the donated equipment can be serviced through a technical backup.⁴⁰ Again; the voltage of US- sourced equipment should be compatible with that of hosting country. Lastly, ensure that the donated equipment is compatible with the existing equipment for example mastoid drills bits.⁴¹

Challenges and Prospects:

It becomes hard to appropriately select patients for surgery in under resourced settings and must be done alongside with the hosts. Cultural dependence is another challenge on the outreach team for research, clinical services and teaching.⁴² Health experiences are a cornerstone for a professional aspiration for a surgeon. Gaining realities and perspectives of medical and surgical disparity in developing countries is inspiring. More so, health care professionals and patient perseverance in face these kind of challenges is inspiring.⁴³ The researcher intent is to build humanitarian partnerships that contribute to capacity building and training.

Results and Discussion of 5 Years ENT Surgical Outreach:

The Federal Teaching Hospital Ido-Ekiti (FETHI) runs weekly medical outreach as part of its service to the various towns and communities. The ENT department in conjunction with the community health department had been involved in the outreach in the last five (5) years, from 2013 to 2018 a total of 8188 were seen in our outreach out of which 2394 had ENT related problems. Table 1 shows the relationship between the total number of patients and the ENT patients. Increase in overall patients causes and increase in ENT patients. The mean for overall patients was 137 and the standard deviation is 187, this shows that the values are widely spread out as the standard deviation is really large. For the ENT patients, the mean was 40.5 and standard deviation

is 57.5 which again show that the values are widely spread. The p-value came out to be 1.6994E-30. Table 2 showed that most of the patients with ENT problems (N = 672, %age = 28.1) lied in the age group between 41 years to 50 years. There were 22.6% patients in age group of 31— 40 years, 15.7% in age group of 21 – 30 years, 11.2% in age group of 51 – 61 years, 10.7% in age group of 11 – 20 years,

and 6.9% in age group of 01 – 10 years. There are only 4.8% ENT patients (N = 115) having age of 61 or more years. It can be seen that most of the patients with ENT problem were within age group of 11 -- 60 years. The patients having age less than 11 years or more than 60 years relatively have less ENT problem as compared to other age groups.

Table 1: All Patients and ENT Patients seen 2013 to 2015

YEAR	MONTH	ALL PATIENTS	ENT PATIENTS(N)	ENT PATIENTS (%)
2013	Jan		23	20.4
	Feb	21	9	42.9
	Mar	19	7	36.8
	April	224	35	15.6
	May	318	53	16.7
	Jun	221	71	32.1
	Jul	540	87	16.1
	Aug	210	67	31.9
	Sep	235	85	36.1
	Oct	22	9	40.9
	Nov	482	125	25.9
	Dec	143	38	26.6
2014	Jan	437	78	17.8
	Feb	447	85	19
	Mar	195	23	11.8
	April	145	63	43.4
	May	78	29	37.2
	Jun	295	105	35.6
	Jul	0	0	0
	Aug	55	18	32.7
	Sep	405	123	30.4
	Oct	222	91	41
	Nov	50	11	22
	Dec	0	0	0
2015	Jan	0	0	0
	Feb	146	95	65.1
	Mar	175	23	13.1
	April	205	109	53.2
	May	25	6	24
	Jun	0	0	0
	Jul	0	0	0
	Aug	0	0	0
	Sep	0	0	0
	Oct	0	0	0
	Nov	256	63	24.6
	Dec	178	25	14
2016	Jan	114	35	30.7
	Feb	135	85	63

	Mar	52	13	25
	April	128	32	25
	May	0	0	0
	Jun	0	0	0
	Jul	0	0	0
	Aug	306	86	28.1
	Sep	310	116	37.4
	Oct	52	11	21.2
	Nov	40	23	57.5
	Dec	0	0	0
	Total	1137	401	35.3
2017	Jan	199	61	30.7
	Feb	112	45	40.2
	Mar	23	9	39.1
	April	0	0	0
	May	107	36	33.6
	Jun	40	12	30
	Jul	68	21	30.9
	Aug	67	26	38.8
	Sep	0	0	0
	Oct	13	5	38.5
	Nov	37	12	32.4
	Dec	0	0	0
2018	Jan	0	0	0
	Feb	287	67	23.3
	Mar	37	12	32.4
	April	5	0	0
	May	0	0	0
	Jun	37	12	32.4
	Jul	125	57	45.6
	Aug	162	62	38.2
	Total	9342	2795	29.9
	Mean	137.3823529	40.50724638	23.71304348
	Standard Dev.	183.4891537	57.51102789	
	P-value	1.6994E-30		

Table 2: Age group distribution of the patients with ENT Problems

Age group (year)	Class Boundaries	Mid-Point (m)	Number (f)	mx _f	Percentage (%)	$f * (m - mean)^2$
01—10	0.5—10.5	05.50	165	907.5	6.9	155570.9
11—20	10.5—20.5	15.50	257	3983.5	10.7	110185
21—30	20.5—30.5	25.50	375	9562.5	15.7	42981.35
31—40	30.5—40.5	35.50	542	19241	22.6	270.0987
41—50	40.5—50.5	45.50	672	30576	28.1	58047.18
51—60	50.5—60.5	55.50	268	14874	11.2	99765.98
≥61	60.5—70.5	65.50	115	7532.5	4.8	98686.39
Total			2394	86677	100	565507

Mean and standard deviation for the age group data was computed (Table 2)

$$\text{Mean} = \frac{\sum m.f}{\sum f} = \frac{86677}{2394} = 36.20593$$

$$\text{Standard deviation} = \frac{\sum f.(m-\text{mean})^2}{\sum f-1} = \frac{565507}{2394} = 15.37261$$

The mean value indicated that average age of patient with ENT problem was about 36.20593 years. The standard deviation value indicated that there was lot of variation in the age group of patients with ENT problem. That is, there is lot of variation in age which is about 36.20593 ± 15.37261 . Majority of the patients were male as seen in Figure 2 and most of them were rural dwellers (Table 3). From demographic characteristics of patients with ENT problems (Table 3), it can be seen that most of the civil servant (N=1073, %age = 44.8) have ENT problem. There are 395 Student/ Apprentice (16.5%), 257 Farmer (10.7%), 219 Applicant (9.1%), 185 Entrepreneur (7.7%), and 175 Artisan (7.3%). There are only 65 Industrial workers (2.7%) and 25 Driver (1.0%) have ENT problem. Figure 3 shows that Majority of the patients were civil servants and had post-secondary school education (Figure 4). This to a very large extent influenced their perspective about the need to seek for orthodox treatments for their medical problem. From demographic characteristics of patients with ENT problem, it could be seen that most of the civil servants (N=1073, %age = 44.8) had ENT problems. There were 395 Student/ Apprentice (16.5%), 257 Farmer (10.7%), 219 Applicant (9.1%), 185 Entrepreneur (7.7%), and 175 Artisan (7.3%). There were only 65 Industrial workers (2.7%) and 25 Driver (1.0%) had ENT problems. Total numbers of females who suffered from ear problems were 447

and total numbers of males were 451 (Figure 5). The mean for female population came out to be 63.9 and standard deviation 32, which showed that most of the values are around the mean and the spread is not huge. Similarly, for male population the mean came out to be 64.5 and standard deviation 52.6, this showed that values were not circled around the mean but were spread. "Otitis externa" and "FB in the ear" were the most prevalent ear problems in both males and females evident from their values (Figure 5). However, wax impaction was the most prevalent of the ear problems. Figure 6 showed the total numbers of females suffering from nose problems were 383 and total males were 337. The mean for females is 54.7 and standard deviation was 41.2 which showed wide spread in female data and the indication that values were not clustered around mean. For the male population the mean was 48.1 and standard deviation was 32 which again show a widespread just like the female population. Adenoid was the most frequent nasal problem followed by Rhinitis. The total numbers of males with throat problems were 407 and females were 369 (Figure 7). The mean for male population came out to be 58.1 and standard deviation 63.3 which showed a very huge spread in data. For females the mean came out to be 52.7 and the standard deviation 56.7 which also showed a very huge spread in data just like male population. In this we were able to deduce that recurrent tonsillitis and Pharyngitis were the most prevalent throat problems in both males and females.

Figure 1: Illustrates the Age of the patients with ENT problems

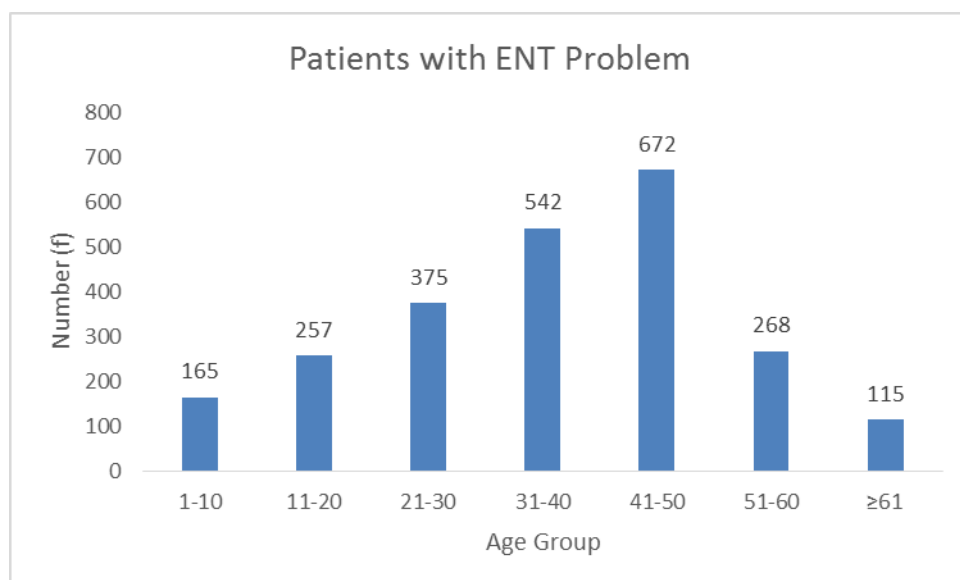


Figure 2: Sex distributions of the Patients

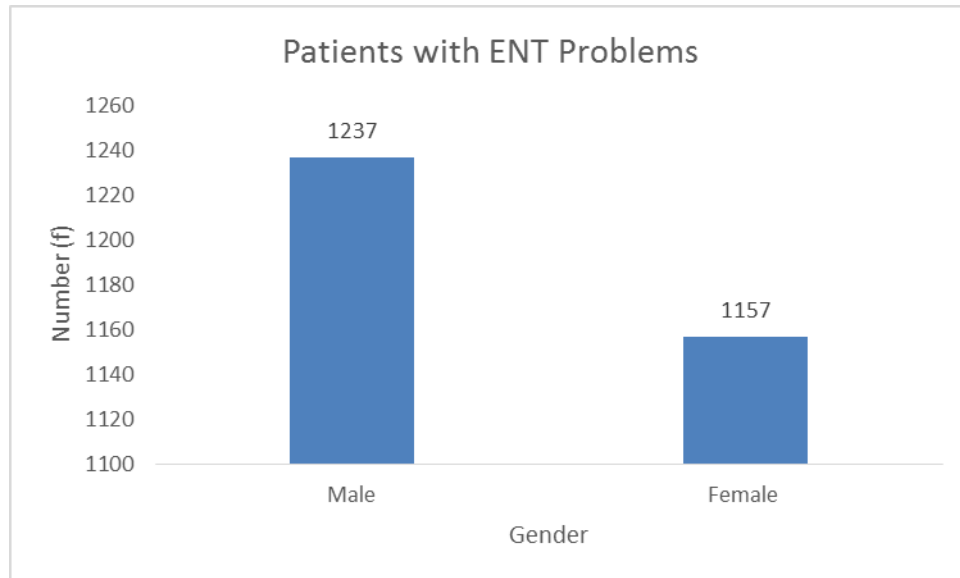


Table 3: Socio-demographic features of patients with ENT Problems

Socio-demographic features	Number	Percentage (%)
Sex		
Male	1237	51.7
Female	1157	48.3
Residential		
Urban	798	33.3
Rural	1596	66.7
Education Level		
Non-Educated	155	6.5
Preschool	45	1.9
Primary	457	19.1
Secondary	750	31.3
Post-Secondary	987	41.2
Occupation		
Student/ Apprentice	395	16.5
Applicant	219	9.1
Civil Servant	1073	44.8
Entrepreneur	185	7.7
Driver	25	1.0
Industrial Worker	65	2.7
Farmer	257	10.7
Artisan	175	7.3

Figure 3: Educational Status of the patients

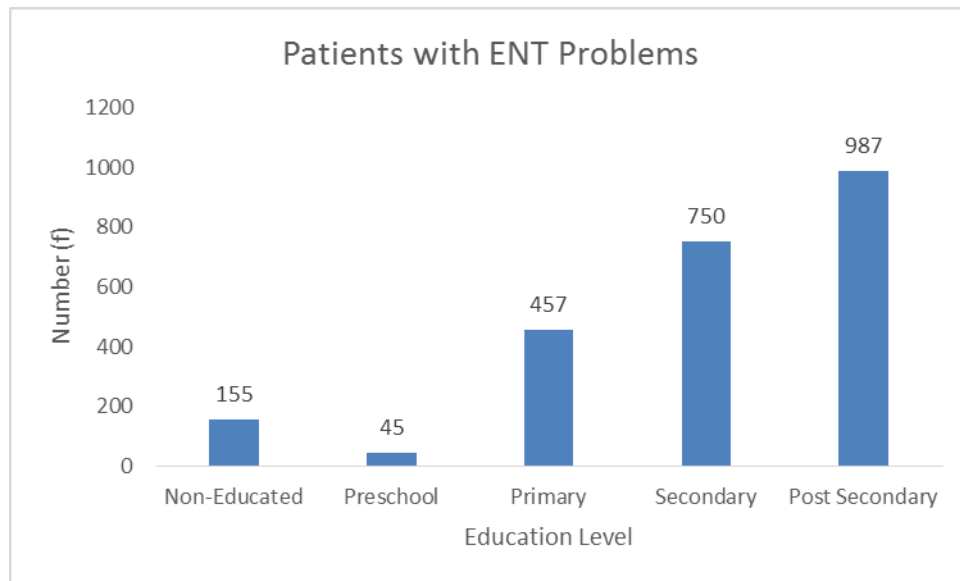


Figure 4: Occupation distributions of the patients

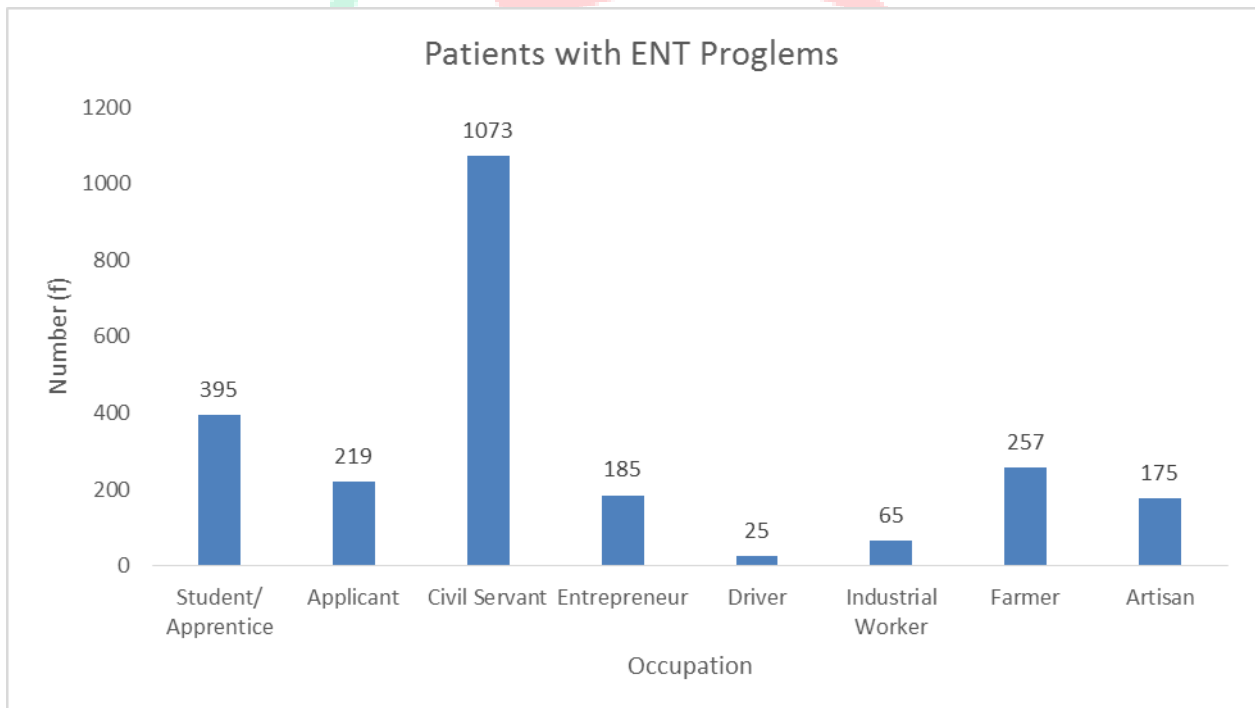


Figure 5: Distribution of Ear problems

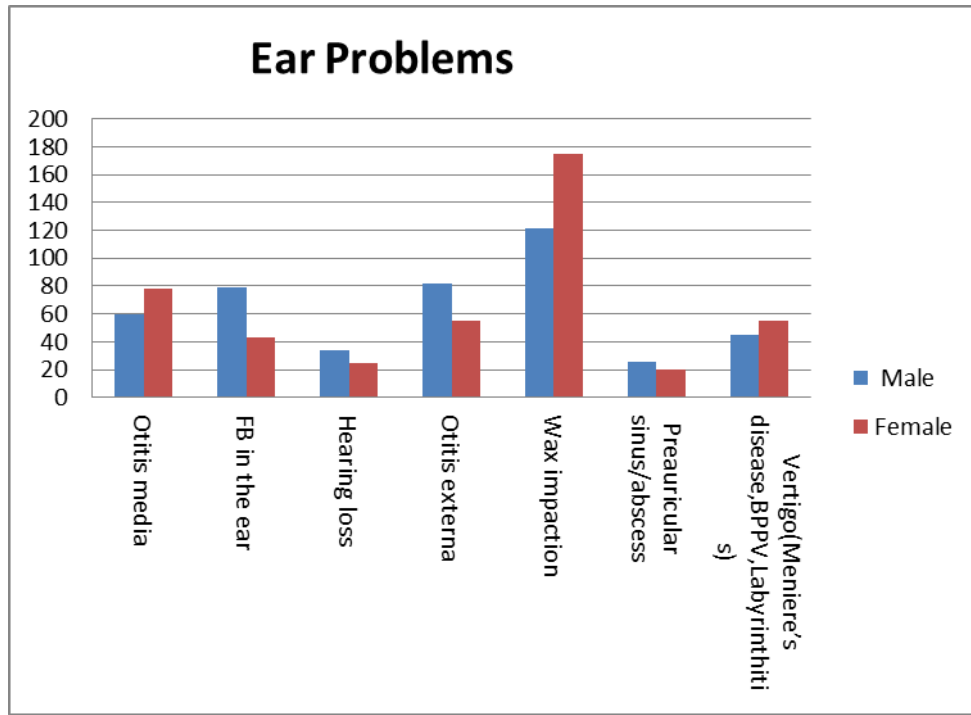


Figure 6: Distributions of Nose Problems

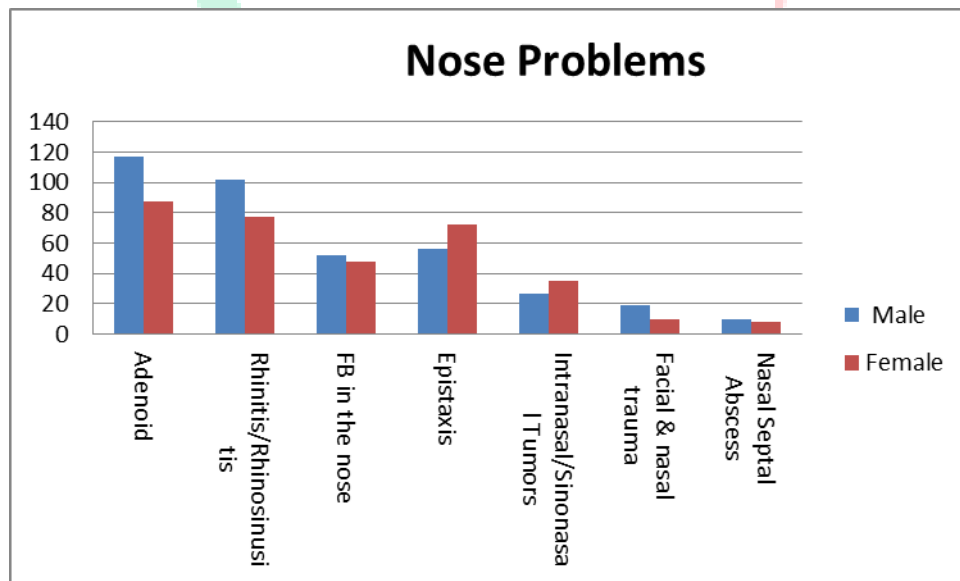


Figure 7: Distributions of Throat/Neck Problems

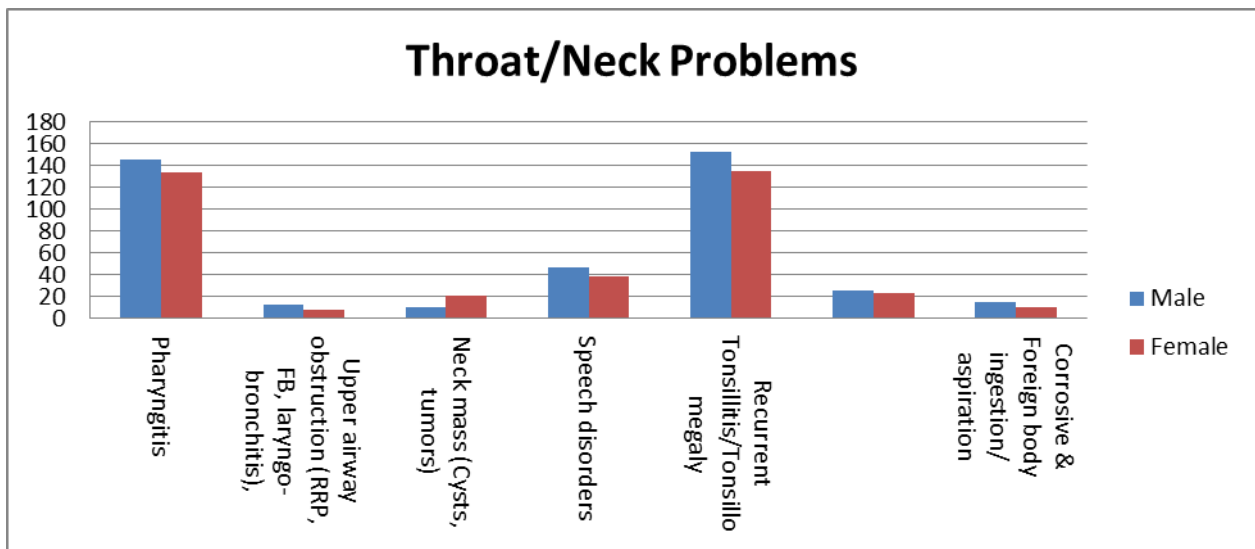


Figure 8 Perspectives of patients about visiting Hospital for treatment

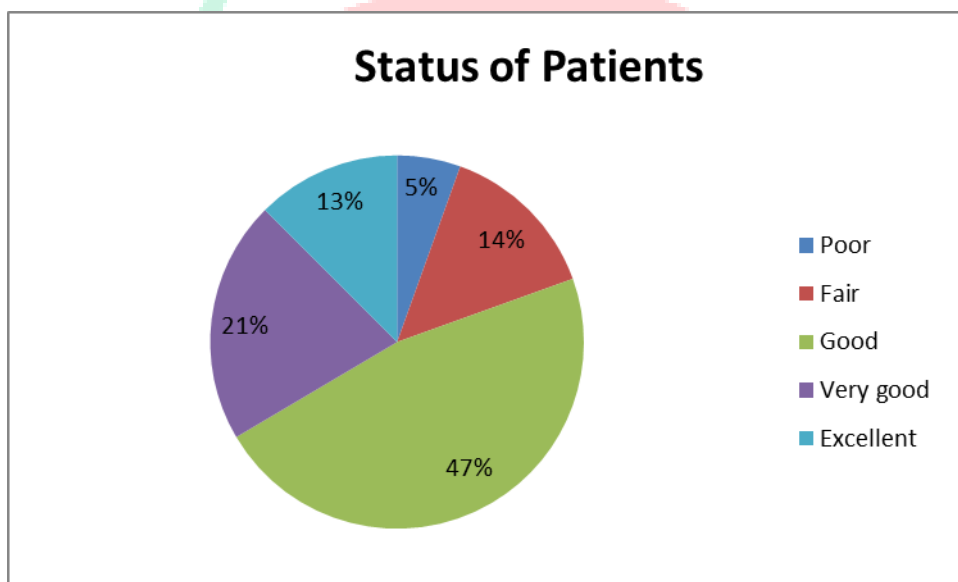


Figure 9: Distance of the outreach centers to FETHI

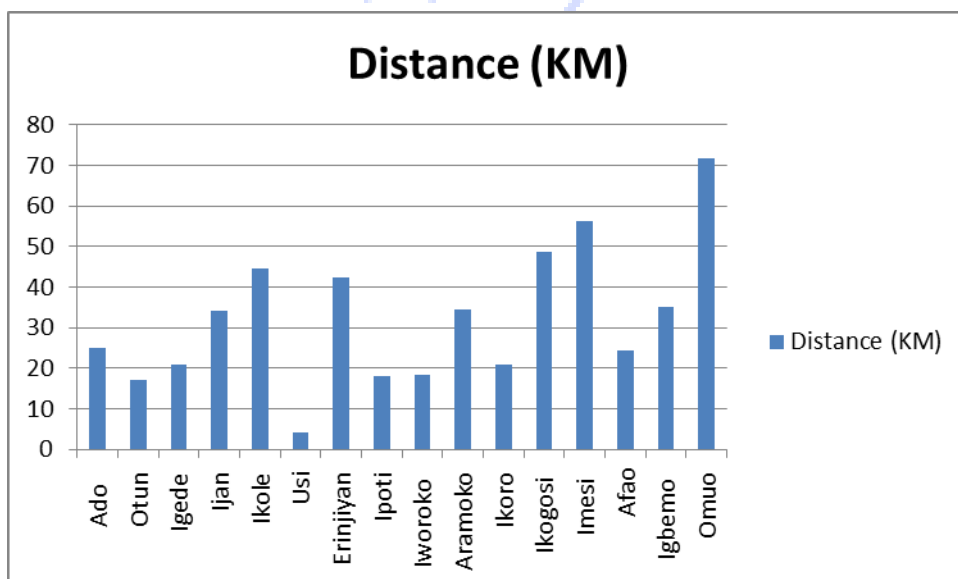


Table 4: ENT Procedures and Treatment (medical/Surgical) Offered the Patients

OUTREACH SITE	N	HOSPITAL(FETHI)	N
Aural syringing	185	Adenoidectomy	75
Aural toileting	160	Adenotonsillectomy	23
Fb removal (Ear and Nose)	70	Rigid Laryngoscopy	7
Aural and Nasal Polypectomy	25	Excision of preauricular sinus	15
I&D of Preauricular Abscess	10	Septoplasty	5
Endoscopy	23	Endoscopic sinus surgery	8
Audiology Screening (PTA,Tympanometry,OAE)	200	I&D of Nasal septal abscess	9
Hearing Aid fitting	18	Anthrostomy	12
Speech therapy	12	Rigid Esophagoscopy	19

Figure 10: Procedures done at the outreach sites

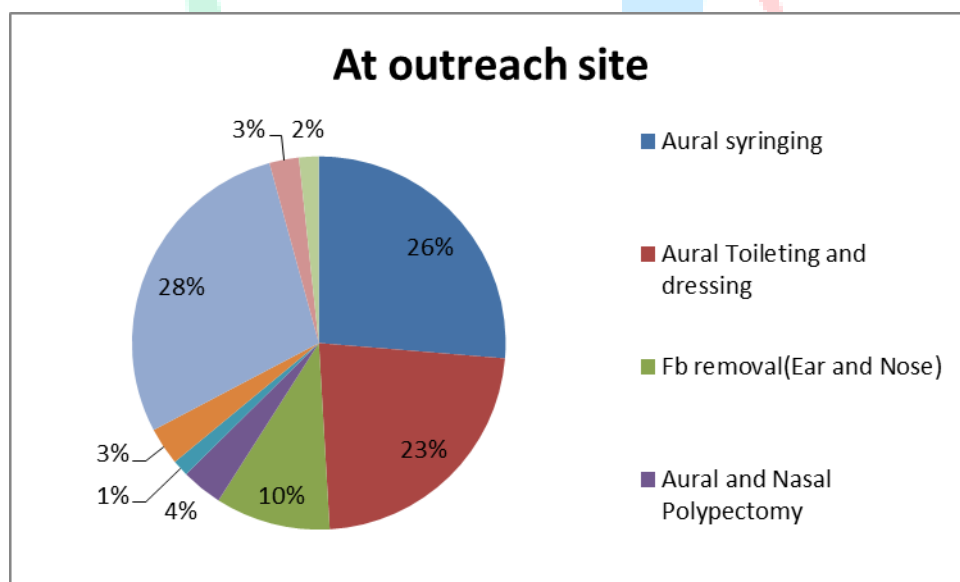
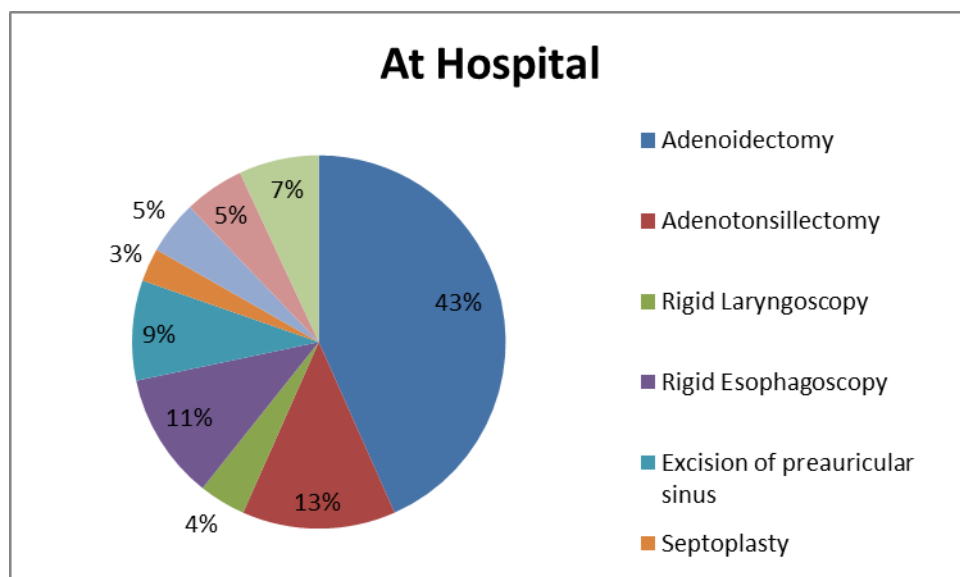


Figure 11: Procedures done at the hospital



Perspectives of patients on the outreach was sorted. We divided them into 5 classes; poor, fair, good, very good and excellent (Figure 8). The perspective shows how the patients reviewed the hospital in terms of the treatment they gave. The total number of responses came out to be 1000. In order to analyze we drew a pie chart to check the distribution pattern. The pie chart shows that 47% of people rated the hospital treatment as good, 21% as very good, 14% as fair, 13% as excellent and 5% as poor which indicates that on average the ratings were on the higher side. Figure 9 depicted the distance from the outreach towns to the town where the hospital is located. The Farther the distance the more difficult was for the patients to seek for ENT treatment in our hospital based on the logistic problems of transportation and financial constraints. Omuo-Ekiti(71.8KM) was the farthest while Usi-Ekiti(4KM) was the nearest. The mean distance was 32.2 KM and the standard deviation came out to be 17.3. With the Surgical Facilities available for the outreach team, some minor procedures were performed at the outreach sites (Figure 10) while those that required major operations were referred to FETHI (Table 4). The total number of subjects came out to be 703(Table 4), the mean value was 78 and standard deviation 80 which show that on average 80 subjects were offered a procedure at the outreach sites. Aural syringing (26%) and aural toileting (23%) top the least of the procedures at outreach sites. There was a total of 173 patients who has surgery in the hospital (Table 4). The mean was 19.22 showing that on average 19 subjects were offered treatment. Adenoidectomy was the most frequently done surgery (Figure 11).

Conclusion:

In developed countries, outreach by ENT surgeons is important in as much as addressing critical lack of access ENT care in developing countries. However, it should be done on shared values, mutual respect, aspirations, desire to build a durable and sustainable impact, and best practice which is accepted internationally.

To execute ENT medical outreach, there is needing to properly select and manage patients. Provision should also be made for censoring of surgical patients. Our Surgical outreach was able to create a lot of awareness about the presence of ENT specialty and also offered Surgical treatment to many patients who would have suffered mortality for their problems.

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List of Abbreviations

1. ENT: Ear Nose and Throat
2. FETHI: Federal Teaching Hospital, Ido-Ekiti
3. BESG: Bellagio Essential Surgery Group
4. WHO: World Health Organization
5. FB: Foreign Body