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Meeting the primary surgical needs of the rural poor in General Hospital, Vandeikya, Benue State: The role of Family Physician led primary care teams

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Abstract
Background: Majority of the global population lives in the rural communities and such communities in the third world is relatively poor with limited access to surgical care.
Materials and Methods: This was a cross sectional descriptive study of patients with surgical conditions in resource-constrained rural communities of Benue State.
Results: Of 59 patients recruited, the age group with more morbidities was 41-50 years. Most frequently performed procedure were herniorrhaphies 27 (45.8%) amongst lump excision (including cysts) 14 (23.7%), hydrocelectomies 8 (13.6%) and appendectomies 6 (10.2%). Others included herniotomies 2 (3.4%), Orchidectomy 1 (1.7%) and varicocelectomy 1 (1.7%). About 54 (91.5%) of the cases were done under local anesthesia.
Conclusion: The commonest surgical conditions were hernias and lumps (lipomas). Periodic medical outreaches by Family Physicians provide a unique, alternative opportunity for these resource constrained communities to access health care at a relatively reduced cost.

Keywords: Surgical outreach, surgical needs, resource-constrained rural communities, Family Physicians

1. Introduction

Reaching the poor rural communities, especially in the third world countries with quality health care has been a major concern to their respective governments and the World Health Organization (WHO) [1]. The majority of the global population live in these rural communities with limited access to health care services including surgical care even though they harbor a wide range of surgical pathologies [2, 3]. It is estimated that about 11% of deaths and associated disabilities are due to the reduced availability or absence of this surgical care for curable surgical conditions. [4] Available surgical care in most developing countries is skewed in favour of the rich and residents of urban communities [4].

Common among surgical pathologies in resource-constrained rural communities are hernias, hydroceles and varying types and sizes of lumps in different locations of the body [2]. It is estimated that about 234 million operations are carried out yearly in the developing countries [5]. The scope of this surgical care would have been more but this is greatly hampered by constraint of resources including personnel, infrastructure and funding [6]. Even when these resources are available, they are morbidly concentrated in the urban centers and communities further depriving the poor living in the rural communities of the desired care [3]. This picture is very evident in Benue state where the majority of the population lives in rural areas engaging in subsistence farming with very little disposable income coming from the seasonal agricultural produce, which can hardly afford the cost of conventional medical and surgical care [7, 8, 9].

Several attempts have been made to bring surgical care to the doorsteps of the less privileged rural populace by the sponsorship of medical/surgical outreaches, reduction of the cost of surgery, promoting the use of cost effective surgical techniques and choice of anesthesia [6, 10, 11]. Since the sources of health financing of these patients are largely from Out-of-pocket payments from personal meagre savings or from family members in these rural communities, Dienye *et al.* in their study stressed that the cost of providing this desired care could be reduced by adequately empowering Family Physicians practicing in the rural communities to provide these services since their scope of training is wider and deeper [11, 12].

This study is therefore aimed at documenting the common surgical pathologies in rural communities in Benue State, Nigeria seen during a surgical outreach program and highlighting the role of primary care teams led by Family Physicians in bridging this unfortunate but preventable shortfall in meeting the healthcare needs of this segment of the Nigerian population.

2. Materials and Methods

This was a descriptive cross-sectional study carried out in a resource-constrained rural setting of General Hospital in Vandeikya, Benue State by a free medical outreach team from 16-19th September, 2014. The patients were drawn from resource-constrained rural communities of Local Governments Areas (LGAs) in Benue North East Senatorial district of Benue State namely; Vandeikya, Logo, Kastina-Ala, Kwande, Ukum and Ushongo LGAs. Mobilization of prospective patients was enhanced by community heads via announcements in their local markets, political and religious gatherings. There were also several radio announcements in Tiv, the people's local dialect.

Patients were sorted out by the most senior medical officers and Family Physicians into medical and surgical cases. In all there were 152 patients with varying surgical conditions. These were then further evaluated for surgery by Family Physicians assisted by medical officers and peri-operative nurses. Surgeries were performed by Family Physicians assisted by experienced Medical Officers and peri-operative Nurses. In all only 59 patients met criteria for surgery and so had surgical operations during the period of the outreach.

The socio-demographic characteristics of all patients were obtained at the point of enrolment including age, sex and occupation. The diagnosis and other treatment related information were obtained from the case notes of the patients.

The patients were observed over 48 hours by the outreach team, after which those needing to stay longer were managed by the Medical Officer in Charge of the General Hospital.

Data analysis was done using PASW 18 statistical package. Results are presented in frequency tables, histograms and charts. Ethical clearance was obtained from the Benue State University Teaching Hospital, Makurdi Health Research Ethics Committee.

3. Results

Out of a total of 1,878 patients screened for surgical pathologies, 152 patients had varying surgical needs out of which 59 had surgical procedures. They were within the age range of 3-75 years with mean age of 37.4 years ± 16.2SD and a male to female ratio of 3.2:1. About 9 (15.3%) of the patients were children below the age of 18 years and 50 (84.7%) were adults. The patients were mainly farmers. Free surgeries were conducted successfully with minimal resources without compromising quality of care and without any mortality. There were no immediate post op complications. Other socio-demographic and treatment related details of the patients are seen below (Table 1).

Table 1: Shows patient's socio-demographic and treatment related characteristics

.	Frequency	Percent (%)
Age of patients (years)		
0-10	2	3.4
11-20	9	15.3
21-30	12	20.3
31-40	9	15.3
41-50	15	25.4
51-60	9	15.3
61-70	2	3.4
71-80	1	1.7
Sex		
Male	45	76.3
Female	14	23.7
Occupation		
Civil servants	1	1.7
Farming	43	72.9
Pupils	3	5.1
Students	11	18.6
Welding	1	1.7
Diagnosis		
Acute appendicitis	6	10.2
Cyst	2	3.4
Hernia	29	49.2
Hydrocele	8	13.6
Lipoma ¶	12	20.3
Undescended testis	1	1.7
Varicocele	1	1.7
Type of anesthesia used		
General anesthesia (GA)	5	8.5
Local anesthesia (LA)	54	91.5
Type of surgical operation		
Appendectomy †	6	10.2
Excision	14	23.7
Herniorrhaphy	27	45.8
Herniotomy	2	3.4
Hydrocelectomy	8	13.6
Orchidectomy	1	1.7
Varicocelectomy	1	1.7

n=59, ¶ some lipomas were huge and pedunculated, † one appendectomy was done under LA

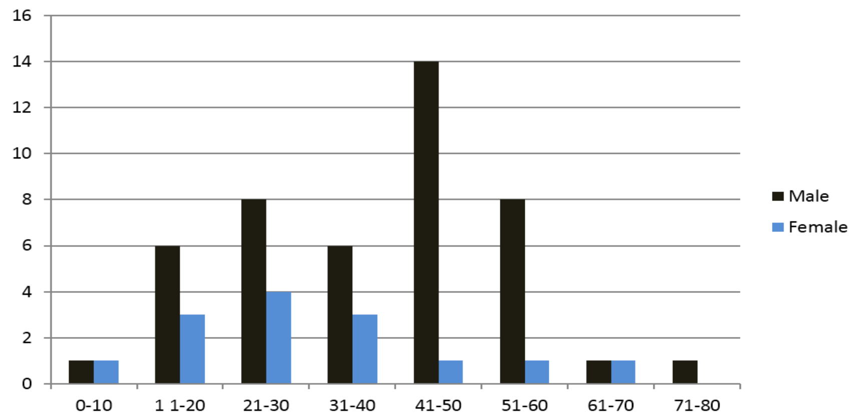

Fig 1: Shows gender distribution over various age strata

Table 2: Shows the relationship between patients' occupations and the diagnosed surgical pathologic conditions

Age (years) strata of patients						
Surgical pathologies	**Occupation of patients**					**Total**
	Civil servants	**Farming**	**Pupils**	**Students**	**Welding**	
Acute appendicitis	0(0%)	3(7.0%)	0(0%)	3(27.3%)	0(0%)	6
Cyst	0(0%)	0(0%)	0(0%)	2(18.2%)	0(0%)	2
Hernia	0(0%)	22(51.2%)	1(33.3%)	6(54.5%)	0(0%)	29
Hydrocele	0(0%)	8(18.6%)	0(0%)	0(0%)	0(0%)	8
Lipoma	1(100%)	8(18.6%)	2(66.7%)	0(0%)	1(100%)	12
Undescend. testis	0(0%)	1(2.3%)	0(0%)	0(0%)	0(0%)	1
Varicocele	0(0%)	1(2.3%)	0(0%)	0(0%)	0(0%)	1
Total	1(100%)	43(100%)	3(100%)	11(100%)	1(100%)	59

4. Discussion

Uncompromised quality health care to poor rural communities, especially in the third world is a priority to the World Health Organisation (WHO). Free surgical outreach to those communities is one of the documented cost effective and alternative means of achieving that goal [1, 13].

The surgical pathologic profile demonstrated in this study cut across the various age groups within the range of 3-75 years. This was noticed to be consistent with a similar work done by Isichei *et al.* in a poor rural community in Jos, Nigeria where he reported age range of patients studied as 10 months to 70 years having varying surgical pathologic needs [13]. It was observed in this study that there were unusually more males (45, 76.3%) than their female (14, 23.7%) counterparts with a respective ratio of 3.2:1. This observation was also consistent with findings reported by Ojo *et al.* from another free surgical outreach programme in the neighbouring state (Taraba State) with similar demographic characteristics to the studied population [2]. The reason for this un-usual male to female ratio could be because the timing of the outreach coincided with the farming period with many women engaged in tending (weeding of farms) the farms leaving a few available to come and access care. It may also be due to the inability of the women to afford the additional cost of transportation to the venue of the outreach due to their dependence on the men.

External hernias (29, 49.2%) were found to be the commonest surgical pathology affecting the communities studied. This also conformed to the findings from a rural community clinic in Port Harcourt and Taraba State where hernias were the commonest surgical condition encountered accounting for about 39.75% and 44.7% respectively [2, 11]. This may have been because majority (43, 72.9%) of the patients were involved in strenuous farming activities [14] even though they may have been other predisposing factors which were not noticed. This is different from findings from other Nigerian studies which reported that lumps were most common accounting for about 36.8% [13].

Other surgical problems encountered in this study were lipomas (12, 20.3%), hydrocele (8, 13.6%) and acute appendicitis (6, 10.2%). It is important to note that as common as these conditions are among this population and easily treatable with minimal resources, regrettably, they are given the least attention by the government of those countries. [5]

Majority (54, 91.5%) of the surgical operations were done under local anesthesia without compromising quality of care. The judicious use of local anesthesia further reduced considerably the variable cost of surgeries to these relatively poor populations without record of any mortality. This is similar to another rural surgical outreach in Nigeria, where it was reported that about two-thirds of cases operated were under local anesthesia without any accompanied mortality and it was shown to reduce the cost of the surgeries [13].

5. Conclusion

World Health Organization (WHO) is still in search on how to reach the poor rural communities, especially in developing countries with uncompromised quality health care which is also partly the responsibility of the individual governments. A healthy population is more productive. This is more so among rural farmers who produce the food that feed the state and the Nation. Focusing on the health of the farmers will ensure food security and sustainable health of the communities state and nation. Free surgical outreach by primary care teams provides a unique alternative opportunity for the respective governments to queue in taking hdealth and other needs to the door steps of the people at a relatively reduced cost. This can be done by the use of primary care teams led by trained Family Physicians and the already existing health infrastructures in those resource-constrained communities through organised community participation, policy-making and continuous advocacy.

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