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ORIGINAL ARTICLE

Addressing Unmet Surgical Needs in an Underserved Nigerian Community: Report of a 'Town and Gown' Initiative

Répondre aux Besoins Chirurgicaux non Satisfaits d'une Communauté Nigériane Mal Desservie : Rapport d'une Initiative 'Town and Gown'

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ABSTRACT

BACKGROUND: Access to quality and timely care prevents unnecessary deaths and morbidity from potentially curable surgical diseases. This study describes the magnitude of unmet surgical needs in a Nigerian community and describes the experiences garnered during a surgical outreach organized by a tertiary institution in an underserved community.

METHODS: This is a descriptive study highlighting details of a surgical outreach to a community in south-Western part of Nigeria. The project was based on a collaboration between a University Teaching Hospital (gown) and the community (town). Details of the patients' demographic and disease characteristics as well as barriers to seeking medical care were obtained. The operational workflow, treatment offered, and outcomes are highlighted. Results are presented as descriptive statistics.

RESULTS: Over a two-day period, 83 out of 3,056 patients who were screened had surgically treatable conditions (2.7%), predominantly hernias (37, 46.6%), goitres (13, 15.7%) and soft tissue swellings (9, 10.8%). The majority were adults (56, 67.5%) while 27 (32.5%) were in the paediatric age group. The mean duration of symptoms was 8.64 months ± 9.5 months. About half of the patients (46.9%) had never visited a medical facility on account of their index illnesses. Lack of funds was cited by many patients as the main reason for having not presented at a hospital. Sixty-three surgical operations were performed with no peri-operative adverse events.

CONCLUSION: Lack of financial access was the major barrier to surgical care in the sampled community. Moving from 'gown to town' helped address a significant proportion of the unmet needs over a relatively short period. Tertiary hospitals can provide surgical oversight to communities within their jurisdiction using this approach. **WAJM 2023; 40(1): 25–29.**

Keywords: Surgery, Unmet needs, Nigeria, Underserved, Community.

RÉSUMÉ

CONTEXTE: L'accès à des soins de qualité et en temps opportun permet d'éviter les décès et la morbidité inutiles dus à des maladies chirurgicales potentiellement curables. Cette étude décrit l'ampleur des besoins chirurgicaux non satisfaits dans une communauté nigériane et décrit les expériences recueillies au cours d'une action chirurgicale organisée par une institution tertiaire dans une communauté mal desservie.

MÉTHODES: Il s'agit d'une étude descriptive mettant en évidence les détails d'une action chirurgicale dans une communauté du sud-ouest du Nigeria. Le projet était basé sur une collaboration entre un hôpital universitaire (ville) et la communauté (ville). Les détails des caractéristiques démographiques et pathologiques des patients ainsi que les obstacles à la recherche de soins médicaux ont été obtenus. Le déroulement des opérations, le traitement proposé et les résultats sont mis en évidence. Les résultats sont présentés sous forme de statistiques descriptives.

RÉSULTATS: Sur une période de deux jours, 83 des 3056 patients examinés présentaient des affections pouvant être traitées chirurgicalement (2,7 %), principalement des hernies (37, 46,6 %), des goitres (13, 15,7 %) et des tuméfactions des tissus mous (9, 10,8 %). La majorité des patients étaient des adultes (56, 67,5 %), tandis que 27 (32,5 %) appartenaient au groupe d'âge pédiatrique. La durée moyenne des symptômes était de 8,64 mois ±9,5 mois. Environ la moitié des patients (46,9 %) ne s'étaient jamais rendus dans un établissement médical en raison de leurs maladies index. Le manque de moyens financiers a été cité par de nombreux patients comme la principale raison pour laquelle ils ne s'étaient pas présentés à l'hôpital. Soixante-trois opérations chirurgicales ont été réalisées sans aucun événement indésirable péri-opératoire.

CONCLUSION: Le manque d'accès financier était le principal obstacle aux soins chirurgicaux dans la communauté échantillonnée. Le passage de la ville à l'hôpital a permis de répondre à une proportion importante des besoins non satisfaits sur une période relativement courte. Les hôpitaux tertiaires peuvent fournir une supervision chirurgicale aux communautés de leur juridiction en utilisant cette approche. **WAJM 2023; 40(1): 25–29.**

Mots clés: Chirurgie, Besoins non satisfaits, Nigeria, Communauté mal desservie.

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INTRODUCTION

It is estimated that about five billion people lack access to safe and affordable surgery globally.[1] The majority of these are in low and lower-middle-income countries with less than 10% of the 313 million procedures performed annually being carried in the poorest countries where over one-third of patients reside.[2] The burden of unmet surgical needs is believed to be highest in sub-Saharan Africa and south Asia.[3] Nigeria is particularly affected by this trend given her huge population of over 200 million people, fragile health care system, unstable economy, and limited number of health care personnel. More recently, the situation has been made worse by the massive brain drain to Europe, North America, Australia and the Middle East.[4] This has further depleted the already precarious work force, a trend that has potentially catastrophic consequences on the health care system of the country. Limited access to surgical care has far reaching implications on the pattern of presentation and outcomes of treatment. The majority of patients only present in the late stages of their diseases or when complications have set in. Common surgical diseases such as hernias are often neglected until they become very extensive or complicated[5]. Emergency abdominal conditions are usually detected late with predictable mortality and morbidity.[5,6] The story is similar with regards to oncology conditions with more than 80% of patients presenting with advanced malignancies, when the chances of cure have become quite remote.[7]

Investing in surgical services will save lives and help avoid high case-fatality rates from treatable surgical disorders. To change this narrative, there is a need for major infrastructural, policy and personnel overhaul. This will certainly require huge amount of resources which may take a while to achieve. Innovative measures are therefore required in the interim. As part of her community service, the Faculty of Clinical Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria organizes periodic community health outreaches to address health inequalities in underserved communities. In the 2019 edition, a surgical outreach was organized in collaboration with a community, about 72 kilometers from the Teaching Hospital. In this report, we present our experience and make recommendations for addressing the unmet surgical needs in underserved communities in Nigeria.

METHODS

This is a descriptive study highlighting the experiences garnered from a community-based surgical outreach, the pattern of surgical diseases, barriers to seeking help, treatment offered and outcomes. A survey of participants with surgical conditions was carried out using a structured questionnaire.

Site

The outreach was conducted in Ada, a town in Boripe local government area of Osun-Sate, South-West Nigeria. The town has a population of about 12,567 people, with a public primary health center and a private health facility offering predominantly primary care services. The private facility (Saint Davies Hospital) was the site for the surgical outreach. The hospital had one operating theatre and two labour rooms, one of which was used as a make-shift theatre, majorly for procedures requiring local anaesthesia. The theatre had an anaesthetic machine for procedures requiring general anaesthesia. The hospital had 20 beds (10 male and 10 female beds), facilities for basic laboratory tests such as haematocrit, haemoglobin genotype and urinalysis. The hospital also had a mini pharmacy which stocks emergency drugs, antibiotics, analgesics and other basic medications.

Approach

Site Inspection

An initial visit was made to the facility prior to the date of surgery to carry out a needs assessment and to screen potential participants for surgery. A workflow was also designed during this visit.

Screening of Participants

Following media advertisements, members of the community were invited for free medical check and screening. During this visit, participants had free medical checks (blood pressure and blood sugar checks) and were evaluated for surgical diseases. Those found to have surgical diseases were subsequently screened for eligibility based on the clinical diagnosis, extent of their disease and the feasibility of the required procedures being carried out in the facility. The patients found to be eligible were requested to have necessary tests at the facility ahead of the day of surgery. They were given necessary pre-operative instructions and told to come for the surgery in a fasted state.

Consumables and Surgical Materials

The surgical materials and consumables used for the outreach were all donated by a philanthropist, who is a native of the community.

Workflow

The team was led by a surgeon who coordinated the entire activity and flow of events. There were four consultant surgeons, three Consultant anaesthetists, 10 trainee surgeons, three anaesthetist trainees and four peri-operative nurses. The team was divided into three: a team consented the patients for surgery and performed necessary pre-operative evaluations on the morning of surgery; another team was in the operating room while the third team took charge of post-operative care. Operations were performed concurrently in two operating rooms during the outreach.

Post-operative Evaluation

The team was available to monitor the patients in the immediate post-operative period and subsequently handed over to the medical officer who evaluated the patients on subsequent post-operative visits. Further correspondences on the state of the patients during follow up were done on telephone between the surgical team and the resident medical officer.

RESULTS

Patient Characteristics and Pattern of Presentation

In all, 3,056 of the estimated 18,496 people (16.5%) in the community (based on 2006 population projection) were screened and participated in the outreach

programme . Of these, 83 (2.7%) had surgically correctable diseases. There were 53 males and 30 females whose ages ranged from 6 months to 80 years with a mean age 32.6±22.3 years. Using an age cut-off of 15 years, 30 patients (36.1%) were in the paediatric group while 53 patients (63.9%) were classified as adults. The majority (81, 97.6%) lived within the community while two patients came from other towns.

Hernias constituted the majority of cases (37, 44.6%), 13 patients had goitres while others had various other surgical conditions (Table 3). Eighteen of the hernias were in children (48.6%) while 19 were in adults (51.4%). The majority of the hernias were in males (35 cases, 94.6%) with the exception of two cases of inguinal hernias in adult females (5.4%). Twelve of the thirteen goitre cases (92.3%) were in females, while one was in a male patient (7.7%). The duration of symptoms ranged from 1 to 44 months with a mean duration of 8.64±9.5 months. Of the 83 patients who had surgical pathologies, 39 had never sought any form of medical consultation for their illnesses, the majority citing financial difficulty as the reason for not seeking care (Table 2).

Treatment Offered

Fifty-five operations were performed during the two day-outreach while eight patients, whose operations could not be performed due to non-availability of test results, were brought over to the Teaching Hospital to have their procedures at no cost to the patients. In all, 63 operations (76% of total number of cases) were performed; 37 hernia operations, 12 lump excisions, 8 thyroidectomies and 6 hydrocoelectomies. General anaesthesia was used in 35 patients (42.2%) while 48 patients (57.8%) had local anaesthesia for their operations. General anaesthesia was used for children and for patients who had thyroidectomy.

Post-operative Outcomes

All attempted operations were successfully completed with no adverse peri-operative event. All the procedures were performed as day case operations with the exception of thyroidectomies which required hospitalization for 48 hours. One patient who had thyroidectomy required repeated visits on account of post-operative seroma.

Table 1: Participants Demographic and Baseline Parameters

Variables	N = 83(%)
Mean age (in years)	32.6+22.3
Paediatric	28
Adult	55
Sex	
Male	53(63.9)
Female	30(36.1)
Place of abode	
Within Ada community	81(97.6)
From another community	2(2.4)
Duration of Symptoms (in years) [Median (IQR)]	6.5 (8.64 months+9.5)

Table 2: Breakdown of Diagnosis

Diagnosis	Frequency	Percentage %
Hernias *Inguinal Inguinoscrotal Epigastric*	37	44.6
Goitres	13	15.7
Lipoma/other soft tissue swellings	9	10.8
Hydrocoele	6	7.2
Benign breast lump	6	7.2
Uterine fibroid	4	4.8
Suspected breast cancer	1	1.2
Prostate enlargement	1	1.2
Undescended testis	1	1.2
Throglossal cyst	1	1.2
Branchial cyst	1	1.2
Submandibular gland tumour	1	1.2
Carotid body tumour	1	1.2
Contracture left index finger	1	1.2
Total	**83**	**100**

Table 3: Reasons for not Seeking Care

Variables	N=83(%)
Ever sought medical help	
Yes	44(53)
No	39(47)
Reasons for not seeking medical help	**N=39(%)**
Finances	30(77)
Asymptomatic	4(10.3)
Did not know what step to take	3(7.7)
No definite reason	2(5.1)

DISCUSSION

This study presents the findings of a collaborative effort between an academic tertiary institution and a community, using already existing facilities to achieve maximal gains over a short period.

The participation rate in the screening and medical consultation was quite encouraging, involving a significant number of people in the community. The

prevalence of surgically correctable diseases found in this study (2.7%) is within the range of earlier studies which had evaluated unmet surgical needs in various populations in Nigeria. In a community surveillance of 1,883 patients in a Lagos community, the overall prevalence of surgically correctable diseases among children was 3.52%.[8] In another study which evaluated the prevalence of general surgical and orthopaedic diseases, an overall prevalence of 6% was reported with 1% prevalence for general surgical conditions.[9] These findings consistently highlight the huge unmet surgical needs in Nigerian communities.

In addition to identifying the unmet needs, this study also explored the barriers to seeking surgical care in the community. Two principal barriers to health care; financial and geographic access to care were addressed in this study[2]. Patients are often referred from community health centers or district hospitals to teaching hospitals where most of the surgical work force is domicile. The logistical challenges associated with travelling long distances to another health care facility is a major disincentive to patients who are often stranded due to poor road network, cost of travel, lack of patient navigation mechanisms, and poor coordination between the various tiers of healthcare.[10] While it will be desirable to have some level of specialist care available in every community, a periodic collaborative outreach of this nature will help address some of the health care deficiencies in the interim. Another potential benefit of a collaboration of this sort is the link it provides between the primary and the tertiary health care systems. Such links facilitate easy referral from the community to the tertiary hospital in terms of navigation and coordination. Our hospital continued to receive referrals from the community after the outreach.

Financial access to care is the other barrier to health care that featured very prominently in this study. It is quite concerning that about half of the patients seen during the outreach had never visited a health facility for their health condition despite their complaints having lasted for several years in some instances. In this study, lack of financial access was the most cited reason for not seeking medical help among those who had never visited a hospital for their illnesses. Globally, it is estimated that about 33 million individuals experience catastrophic health expenditure annually due to cost of surgery and anaesthesia.[1] An additional 48 million people experience catastrophic expenditure related to the non-medical costs of accessing surgical care.[11] This clearly highlights the huge financial burden associated with surgical care, the majority weighing heavily on poor individuals.[1,12] The current model of health care funding in Nigeria, which is entirely based on out-of-pocket expenditure, needs to be reviewed. To date, the coverage of the National Health Insurance scheme is barely 5% of the population, the majority being public workers.[13] Changing this narrative requires major policy overhaul and willingness on the path of decision makers to make huge financial investments in health care. While it is hoped that this will be a reality in the near future, it is imperative that innovative ways of mitigating unnecessary mortalities and morbidities from surgical diseases be devised. There have been earlier reports of community surgical outreaches by tertiary institutions with remarkable successes.[14–18] The model adopted in this study eliminated the cost of travel for the patients as well as personnel cost. This has been shown to be cheaper than the conventional approach to care where patients come to the hospital to be treated.[19] Even in the absence of a philanthropist, sustaining a model of this type is feasible as the cost of consumables can be borne by local government authorities or through crowd funding. We propose that local authorities can institutionalize this approach by partnering with tertiary hospitals to have periodic, but consistent outreaches to bridge the health care divide.

It should be noted that the gains from this outreach were bilateral. Members of the community were able to access care cheaply and promptly while the huge number of operations performed within few days provided a lot of hands-on experience for surgical and anaesthetic trainees.[20,21] Herniorrhaphy, which constitutes the majority of cases in this series, is one of the procedures often used to assess the proficiency of junior surgical trainees. This outreach provided a huge opportunity for hands on training in the performance of hernia repairs and other procedures over a short period. Surgical departments in academic institutions can adopt this model into their training schedule to enhance the hands-on experience of their trainees as this fits into the rural surgical posting concept of the West African College of Surgeons Residency Training Programme.

For the purpose of convenience, a hospital-based screening, rather than a house-to-house surveillance was adopted in this study. Although the partcipation rate was encouraging, this could still have potentially resulted in under-estimation of the burden of surgical diseases, given that some patients might be unwilling or unable to present for screening. Within this limit however, this study highlights the magnitude of untreated surgical diseases in a Nigerian community and the huge potentials in a tertiary/primary (town/gown) collaboration. Such a model can be built into the national health care framework and replicated for other common diseases in underserved areas.

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