

Access this article online	
Quick Response Code:	Website: www.annalsafmed.org
	DOI: 10.4103/1596-3519.93529

Trichiasis surgical coverage in three local government areas of Sokoto state, Nigeria

Nasiru Muhammad

Department of Surgery, Ophthalmology Unit, Usmanu Danfodiyo University, Sokoto, Nigeria

Correspondence to: Dr. Nasiru Muhammad, Ophthalmology Unit, Usmanu Danfodiyo University, Sokoto, Nigeria.
E-mail: nasiru69@yahoo.com

Abstract

Background: Community-based lid surgery for trichomatous trichiasis (TT) is provided in 8 local government areas (LGAs) of Sokoto state since 2003 as part of a trachoma control programme. This study aims to assess the impact of community-based lid surgery on the magnitude of TT in 3 LGAs of Sokoto state.

Materials and Methods: A population-based survey was conducted in persons aged 15 years and above. A stratified multistage cluster sampling with probability proportional to size was used. Trachoma was assessed using the WHO simplified grading system.

Results: Despite high (13%) refusals, 72% of the minimum sample size was examined. The prevalence of blindness ranged from 1.3% to 2.5% in the LGAs while the prevalence of TT in persons aged 15 years and above was 2% in the Silame, 2.7% in the Wamakko and 5.6% in the Kware LGAs, respectively. The prevalence of TT in females 15 years and above was 1.1% in the Silame, 4% in the Wamakko and 6.3% in the Kware LGAs, respectively. The trichiasis surgical coverage is 9.5% in the Kware and 12.5% in the other LGAs respectively. The minimum number of TT lid surgery required to achieve the elimination level is 873 in the Silame LGA, 2611 in the Wamakko LGA and 4672 in the Kware LGA.

Conclusion: The burden of TT is high in the study communities while the trichiasis surgical coverage is low. There is a need to strengthen the control programme to meet up with existing need.

Keywords: GET 2020, Nigeria, SAFE strategy, trachoma

Résumé

Fond: Chirurgie couvercle communautaires pour trichomatous trichiasis (TT) est fournie dans les zones de gouvernement local 8 (LGAs) de l'état de Sokoto depuis 2003 dans le cadre d'un programme de contrôle de trachome. Cette étude vise à évaluer l'impact de la chirurgie de couvercle communautaires sur l'ampleur du TT en état de LGAs de Sokoto 3.

Des matériaux et des procédés: A population-based survey a été réalisée chez les personnes âgées de 15 ans et plus. Un échantillonnage stratifié cluster à plusieurs étages avec une probabilité proportionnelle à la taille a été utilisé. Trachome a été évaluée à l'aide de l'OMS simplifié le système de classement.

Résultats: Malgré la fortes (13%) refus, 72% de la taille minimale de l'échantillon a été examinée. La prévalence de la cécité varie entre 1,3% et 2,5% dans les LGAs alors que la prévalence de TT chez les personnes âgées de 15 ans et plus haut était 2% dans la Silame, de 2,7% dans la Wamakko et de 5,6% dans le LGAs Kware, respectivement. La prévalence de TT chez les femmes de 15 ans et plus a été de 1,1% dans la Silame, 4% dans le Wamakko et 6,3% dans les LGAs Kware, respectivement. La couverture chirurgical de trichiasis est de 9,5% dans la Kware et 12,5% dans les autres LGAs, respectivement. Le nombre minimum de chirurgie de couvercle TT requis pour atteindre le niveau d'élimination est 873 dans l'arrondissement de Silame, 2611 dans la LGA Wamakko et 4672 dans la LGA Kware.

Conclusion: le fardeau de TT est élevé dans les communautés de l'étude, tandis que la couverture chirurgicale trichiasis est faible. Il est nécessaire de renforcer le programme de contrôle à rencontrer besoin existant.

Mots clés: GET 2020, Nigéria, stratégie sécuritaire, trachome

Introduction

A trachoma control programme was initiated by the Sokoto state Ministry of Health (MoH) in partnership with Sightsavers (SSI) in 2003. This was based on trachoma rapid assessment (TRA) conducted in 2002, which identified some Local Government Areas (LGAs) with blinding trachoma.^[1] The SAFE Strategy,^[2] recommended by the World Health Organization (WHO), was planned to be implemented in phases. Community-based lid surgery (S component) was commenced in eight LGAs. The surgery is conducted by trained ophthalmic nurses in rural health centers as chosen by the hosting communities. The services are provided free of cost, including postoperative medications. The WHO and other stakeholders have set a target of globally eliminating trachoma by the year 2020 (GET 2020).^[3] The WHO has also developed a tool to support control programmes in monitoring and evaluation of the programmes,^[2] and recommended the use of an ultimate intervention goal for each component in the SAFE strategy. The “S” component is the provision of lid “surgery” for trachomatous trichiasis (TT). Elimination of TT is defined as having less than one TT case per 1000 total population. This is then translated into annual intervention objective (AIO) to guide annual planning of control activities.^[2] This study was conducted to assess the impact of community-based lid surgery on TT in three of the participating LGAs in Sokoto state.

The specific objectives of the study were: (i) to determine the prevalence of TT in persons aged 15 years and above in the LGAs, (ii) to determine the trichiasis surgical coverage (TSC) (persons) in the 3 LGAs and (iii) to estimate the number of lid surgeries required to achieve the ultimate intervention goal for TT elimination.

Materials and Methods

A population-based cross-sectional survey in persons aged 15 years and above was conducted between December 2005 and January 2006.

A minimum sample size of 520 persons per LGA (1560 for the three LGAs) was determined based on the following parameters:

- i) *Average population of persons aged 15 years and above per LGA*^[4]: 48,520 to 104,411: LGA with the higher population was used; thus, more than the minimum sample size was targeted to be assessed in the other two LGAs [unpublished];
- ii) *Expected prevalence: 4%*. This was based on the

- prevalence of TT in persons aged 15 years and above in the nearby LGAs (2.7–5.9%)^[5];
 - iii) *Worst acceptable estimate: 2.5%*; and a
 - iv) *Design effect of 2* based on study design.
- An additional 10% was added to cover nonresponse.

Sampling technique

In each of the three LGAs, 10 communities were randomly selected by probability proportional to size (PPS). A direction was first selected from the center of the village by spinning a bottle. Fifty-two eligible persons in households on the chosen direction were then enumerated on a roster. In larger towns, the lowest administrative division (ward) was reached before selecting a direction from the center of the ward.

Survey team and eye examination

The survey team was made up an ophthalmologist, two experienced community ophthalmic nurses (CONs), one community health officer (CHO), one local guide and a driver.

The CHO enumerated the eligible persons after due consent was taken from the subjects or their guardians. The ONs then recorded the demographic information of each individual on the survey form. Visual acuity was then tested using the illiterate E chart. Identification of optotypes on at least three consecutive showing was used as identification of an acuity line.

The ophthalmologist then assessed each individual for trachoma in a shaded area or nearby room using a pen torch and X2 magnifying loupe. The participants were particularly assessed for TT, corneal opacity (CO) and evidence of previous lid surgery. Those with TT and/or CO were additionally asked if they had previous lid surgery for trichiasis. Eyes with epilated lashes were considered as TT as in WHO trachoma simplified grading^[6] system but not as a previous surgery.

Trachoma was assessed using the WHO simplified grading system.^[6] All information was recorded into a predesigned form.

Data was analyzed using Epi-info software

Subjects identified with eye infections were issued tetracycline eye ointment. Those with trichiasis were advised to go for free lid surgery based on the closest community-based lid surgery center. Those with other eye problems were referred appropriately.

Ethical considerations

Approval for the conduct of the survey was obtained from the Sokoto State MoH and the

health departments of the respective LGAs. Consent was obtained from the community leaders and the individual participants during the conduct of the survey. Provisions of Helsinki declaration were observed in the planning and conduct of the survey.

Results

A total of 1122 persons were examined (response rate 72%) in the three LGAs, while 13% of the sample refused examination. The response rate was highest in the Silame (77%) while refusal was highest in the Kware (16%) LGA [Table 1]. Reasons for refusal were husband-related; refusal to allow wives to be examined by a male personnel or absence at home at the time of both initial and mop up visits.

The prevalence of blindness ranged from 1.3% to 2.5%, while the prevalence of TT in persons aged 15 years and above ranged from 2% in the Silame LGA to 5.6% in the Kware LGA. The prevalence of TT in females aged 15 years and above ranged from 1.1% to 6.3% in Silame and Kware, respectively [Table 1].

The trichiasis surgical coverage in these LGAs ranged from 9.5% to 12.5% [Table 1].

Table 2 shows the minimum number of surgeries needed to achieve the WHO-recommended ultimate intervention goal for TT elimination (<1 TT/1000 total population). The burden of TT is highest in Kware, although its population is lower than Wamakko.

Discussion

The high refusal rate (13%) in this study was largely due to husband-related factors. This is a predominantly Muslim society where women are

full-time housewives, and husbands preferred their wives to be examined by a female personnel. This has an implication for the take up of the services provided by the control program. Additionally, the areas are relatively urban, lie on riversides and are close to the state capital and many people leave their homes very early for dry season farming or go for work/business in the state capital. Limited resources did not allow visits to farms to examine the subjects.

The blindness prevalence ranged from 1.3% to 2.5%. This was not surprising as there are no regular eye care services provided to the population at the time of this study. The prevalence of TT points to the high burden of trichiasis (2–5.6%) in these communities, which further justify the control programme but with low TSC; thus, the community-based lid surgical services need strengthening to meet up with existing need if TT elimination is to be achieved in these communities. The TT prevalence is comparable to the findings in the northern Nigerian states of Katsina (2.3–8%)^[7] and Yobe (3.8%).^[8] The TSC is lower than the TSC reported in Tanzania (16.9%),^[9] although both are indicative of poor service uptake. A participatory evaluation involving several control programmes in different countries also reported a low number of trichiasis surgeries being performed.^[10] This has been identified as a major impediment to trachoma control.

The barriers to lid surgery for trachoma TT in these communities have been documented in a different survey^[11] and include subjects “not knowing where to go for treatment” (36.1%), “no need for surgery” (21%); and “cannot afford cost of surgery” (18%), among others.

In order to achieve the elimination target, the TT backlog (UIG) should be translated into annual intervention objectives^[2] for easy annual planning and monitoring. A combination of strategies is needed to improve service uptake and should

Table 1: Prevalence of trichomatous trichiasis in persons aged 15 years and above

LGA	Silame	Wamakko	Kware
Response rate (%)	77	66	73
Refusal rate (%)	09	14	16
Prevalence of blindness (%)	2.5 (0.9–4.1)	1.3 (0–2.6)	2.0 (0.6–3.4)
Prevalence of TT ≥15 years (%)	2 (0.6–3.4)	2.7(0.8–4.6)	5.6 (3.2–8)
Prevalence of TT females ≥15 years (%)	1.1 (0–2.6)	4 (0.9–7.1)	6.3 (2.6–10)
Prevalence of CO (%)	0.5 (0–1.2)	0.4 (0–1.1)	0.6 (0–1.4)
Trichiasis surgical coverage (%)	12.5	12.5	9.5

Figures in parentheses are 95% confidence intervals, LGA = Local government area.

Table 2: Minimum number of lid surgeries for TT elimination per LGA

LGA	Silame	Wamakko	Kware
Estimated total population (2005)	97040	208822	173062
Prevalence of TT ≥15years (%)	2	2.7	5.6
No. of TT cases in the whole population (n)	970	2819	4845
TT elimination (UIG) target (n)	<97	<208	<173
Minimum no. of TT surgeries to meet up target (n)	>873	>2611	>4672

UIG = Ultimate Intervention Goal, TT = Trichomatous trichiasis, LGA = Local government area.

include community education and mobilisation to become aware of the free surgical services provided in selected community-based centers and to utilise the services accordingly, and the inclusion of female nurses as trichiasis surgeons in the service delivery.

The generalisation of the findings of this study is limited by the assessment of only three of eight LGAs where the lid surgical services are currently provided and the high refusal rate despite the mop up visits.

Conclusion

There is a backlog of potentially blinding TT in the study area and more efforts are needed to eliminate the disease by 2020 (GET 2020).

Acknowledgment

The support of the ONs and cooperation of the communities is hereby acknowledged.

References

1. Sight Savers International. Report of Trachoma Rapid Assessment in Zamfara, Sokoto, Kebbi and Kwara states. Kaduna: SSI Nigeria Office; 2002.
2. World Health Organization. Trachoma control: A guide for program managers. Geneva: World Health Organization, 2006.
3. World Health Organization. Global elimination of blinding trachoma. WHA51.11 Available from: <http://www.who.int/blindness/causes/WHA51.11>. [Last accessed on 2010 Nov].
4. National Population Commission. Population Census data. 2005 projections.
5. Sight Savers International. Report of Trachoma population based survey in 6 Local Government Areas of Sokoto State. Kaduna: SSI Nigeria Office; 2005.
6. Thylefors B, Dawson CR, Jones BR, West SK, Taylor HR. A simple system for the assessment of trachoma and its complications. Bull World Health Organ 1987;65:477-83.
7. Jip NF, King JD, Diallo MO, Miri ES, Hamza AT, Ngondi J, *et al*. Blinding Trachoma in Katsina State, Nigeria: Population-based prevalence survey in ten local government areas. Ophthalmic Epidemiol 2008;15: 294-302.
8. Mpyet C, Ogoshi C, Goyol M. Prevalence of Trachoma in Yobe State, North-Eastern Nigeria. Ophthalmic Epidemiol 2008;15:303-7.
9. Mahande M, Tharane M, Kirumbi E, Ngrirawamungu E, Geneau R, Tapert L, *et al*. Uptake of trichiasis surgical services in Tanzania through two village-based approaches. Br J Ophthalmol 2007;91:139-42.
10. Kuper H, Solomon AW, Buchan JC, Zondervan M, Mabey D, Foster A. Participatory evaluations of trachoma control programmes in eight countries. Trop Med Int Health 2005;10:764-72.
11. Sight Savers International. Report on the baseline blindness survey for Sokoto state Eye Care Programme. Kaduna, 2006.

Cite this article as: Muhammad N. Trichiasis surgical coverage in three local government areas of Sokoto state, Nigeria. Ann Afr Med 2012;11:80-3.
Source of Support: Sightsavers,
Conflict of Interest: None declared.