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ORIGINAL ARTICLE

# Socioeconomic challenges of chronic suppurative otitis media management in state tertiary health facility in Nigeria

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**Abstract** Chronic suppurative otitis media (CSOM) is a serious health care concern worldwide due to its substantial financial and non-financial burden. The aim was to determine the socio-economic challenges of CSOM in developing economy.

*Methods:* It is a nine month prospective study of all patients with a diagnosis of CSOM seen at Kogi State Specialist Hospital in north-central Nigeria. A semi-structured questionnaire was used to collect relevant information from patients/caregiver after an informed consent and ethical clearance obtained from relevant authorities. Information retrieved included socio-demographic data, site and duration of discharge, the financial cost of various stages of treatment and follow up.

*Result:* Eighty-two new patients were seen during the study period aged 2–56 years with a mean age was 8.84 years, male:female ratio of 2.2:1. About 84.1% of the patients were from within the town. The average cost of consultation per visit was 150 NGN (US$1.00). The recorded cost of out-patient medical management with basic investigation was about 14,550.00 NGN (US$97) while those requiring rehabilitation was 85,100 NGN (US$567.3). The average cost of medication and

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ear dressing was 2475.00 ± 82.6 NGN (US$17) and 750 NGN (US$5) respectively. None was operated.

*Conclusion:* The socioeconomic cost of CSOM is still very high both financially and non-financially. Children are at the receiving end, there is a need for capacity building to reduce the cost burden and out of pocket expenses through health insurance scheme will go a long way.



## 1. Introduction

Otitis media is a generic term[1] and includes the acute otitis media (AOM) and chronic otitis media (COM) and Otitis media with effusion (OME), also referred to as non-suppurative otitis media.[2] COM equates with the classic term chronic 'suppurative' otitis media that is no longer advocated as COM is not necessarily a result of 'the gathering of pus'. However, the distinction remains between *active* COM, where there is inflammation and the production of pus, and *inactive* COM, where this is not the case though there is the potential for the ear to become active at some time.[2]

Active COM or CSOM can also be defined as a disease condition of non-healing perforation of the tympanic membrane associated with chronic inflammatory changes of the mucoperiosteum of the middle ear cleft with or without mucoid or mucopurulent otorrhea of more than 3 months duration.[1–3] The World Health Organization (WHO) definition requires only 2 weeks of otorrhea[4], but most otolaryngologists including the authors of this manuscript tend to adopt a longer duration of about 3 months of active disease.[5]

A third clinical entity is *healed* COM where there are permanent abnormalities of the pars tensa, but the ear does not have the propensity to become active because the pars tensa is intact and there are no significant retractions of the pars tensa or flaccida.[2]

CSOM is a serious healthcare concern worldwide, not only because of the distress it causes to the patient and their family but also because of the substantial economic burden quantifiable and unquantifiable, financial and non financial losses in productivity.[6] And reduced quality of life which it imposes on the affected individuals.[6] The chronic otitis media is a phenomenon virtually non-existent in the developed world, however it still constitutes a major public health problem in Africa, Asia and Latin America[7] Nigeria inclusive. It is commoner among children belonging to rural children and lower socioeconomic group[4,5] where poverty, overcrowding, illiteracy, poor living conditions, ignorance, poor hygiene, malnutrition and lack of medical facilities, frequent upper respiratory tract infections, low socioeconomic status have been suggested as a basis for the widespread prevalence of CSOM.[8] A prevalence rate of 7.3% was reported among school children enrolled in nursery, primary and secondary schools in a rural community in Kwara State, Nigeria.[6,7] There is a close correlation between patients with active chronic otitis media, hearing loss and socioeconomic group with the lower socioeconomic group having a higher incidence.[4]

The poorer rural communities have the highest prevalence[9] and this has been associated with problems of inaccessibility to and affordability of health care.[7–10]

The aims of managing the chronic discharging ear are early detection and timely, appropriate intervention to eradicate the disease permanently or to reduce its effects such as ear discharge, hearing loss and other complications, if eradication is not possible.[6] This can be solved by regular aural toileting, antibiotic treatment, middle ear reconstruction and the use of hearing aids for rehabilitation. In sub-Saharan Africa, this will seem to be an arduous task due to poverty and the task of prioritizing health care needs in the face of limited and diminishing resources.[11]

The direct and indirect costs of otitis media in the United States (US) were estimated to exceed US$3.5 billion about a decade ago[12] however no data is available in Nigeria hence the rationale for this study.

The present study was aimed to determine the prevalence of CSOM and its association with certain socioeconomic factors and the burden of its management in Nigeria.

## 2. Methodology

It was a prospective cross sectional study of all consecutive patients with a clinical diagnosis of chronic suppurative otitis media attending the Ear, Nose and Throat (ENT) clinic of the Kogi State Specialist Hospital, located in Lokoja, North-central Nigeria. It is an 80-bed tertiary-care health facility, one of two such hospitals serving the needs of about four million people both within and outside the state. It is a tertiary care but serves primary and secondary healthcare function because the institutions responsible for these levels of health care in the state in question do not have the required training, personnel and equipments to care for these patients. The study population included new patients seen in the ENT unit of the hospital with a diagnosis of CSOM over a 10 months period. All new patients with chronic middle ear discharge and persistent tympanic membrane perforation for 12 weeks and above were recruited into the study. All patients were managed conservatively as none of the patients could afford the cost of surgical treatment. Excluded from the study are those patients with aural polyps or masses, bleeding middle ear, patients with previous ear surgery and patients already on ear dressing with antibiotics. A semi-structured questionnaire was administered to each patient/caregiver after an informed consent had been obtained. Information retrieved from the participants include their bio-data (age, sex, occupation), type of clinical presentation, site and duration of discharge, the financial cost of consultation, number of visits, hearing assessment test, cost of radiological and laboratory investigation and cost of oral and topical medication. Other variables assessed are the cost of aural dressing, number of follow ups and estimated non-financial cost such as quality of life, hearing loss, other type of complications seen and the social impact on individuals.