Assessment of Human and Material Resources Available for Primary Eye-Care Delivery in Rural Communities of Southwestern Nigeria

OH Onakpoya[1], AO Adeoye[1], BO Adegbehingbe[1], FB Akinsola[2]

ABSTRACT

Integration of primary eye-care (PEC) into the existing primary healthcare (PHC) system is efficient in reaching rural communities. Baseline assessment of human and material resources for primary eye-care delivery in a rural local government area of southwestern Nigeria with projected population of 126 625 was conducted. Data on number and cadre of all PHC facilities and health-workers were collected. All facilities were visited and materials required for basic PEC inspected. Forty-one (42.3%) community health extension workers, 42 (43.3%) health assistants, 3 (3.1%) community officers of health and 11 (11.2%) registered nurses administered PHC in 27 health facilities. No worker had training in PEC and none of the centres had all the materials for basic PEC delivery. Although procurement of materials and training of health-workers in basic PEC delivery is required, the healthcare facilities and workers currently available are adequate to commence integration of PEC into the PHC system.

Evaluación de los Recursos Materiales y Humanos Disponibles para la Atención Primaria Visual en las Comunidades Rurales de Nigeria Sudoccidental

OH Onakpoya[1], AO Adeoye[1], BO Adegbehingbe[1], FB Akinsola[2]

RESUMEN

La integración de la atención primaria visual (APV) en el sistema existente de atención primaria de la salud (APS) alcanza eficientemente las comunidades rurales. Partiendo de una línea de base, se llevó a cabo una evaluación de los recursos humanos y materiales para la administración de la atención primaria visual en un área gubernamental local rural del sudoeste de Nigeria, para una población de 126 625, según la previsión. Se recogieron datos sobre las cifras y los cuadros de todas las instalaciones para la atención primaria de la salud (APS) y los trabajadores de la salud. Se visitaron todas las instalaciones y se inspeccionaron los materiales requeridos para la APS básica. Cuarenta y un (42.3%) trabajadores de extensión comunitaria de la salud, 42 (43.3%) asistentes de salud, 3 (3.1%) funcionarios de salud de la comunidad y 11 (11.2%) enfermeras graduadas, estuvieron encargados de administrar la APS en 27 instalaciones de salud. Ninguno de los trabajadores tenía entrenamiento en APV y ninguno de los centros disponía de todos los materiales para brindar APV básica. Si bien se requiere obtener materiales y entrenamiento de los trabajadores de la salud, las instalaciones de atención a la salud y los trabajadores de la salud de que se dispone en la actualidad, son adecuados para comenzar la integración del la APV en el sistema de APS.

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INTRODUCTION

Blindness is associated with severe reduction in quality of life and a shortened life expectancy in rural Africa (1). Most blindness in developing countries is attributable to treatable or preventable eye diseases (2), hence the Global Initiative for Elimination of Avoidable Blindness, Vision 2020 "The Right to Sight" was launched in 1999 for the elimination of avoidable blindness (3).

Isolated, poor rural communities are far away from eye-care professionals in many developing countries (4). Ophthalmologists are few and mainly concentrated in urban areas of sub-Saharan Africa (5, 6). Integrating primary eye-care into an existing primary healthcare is an efficient and beneficial way of reaching rural communities (4–6). Effective eye-care delivery depends on the availability of

From: [1]Ophthalmology Unit, Department of Surgery, Obafemi Awolowo University, Ile Ife, Nigeria, [2]Guiness Eye Centre, Lagos University Hospital, Idi-araba, Lagos, Nigeria.

Correspondence: Dr OH Onakpoya, Ophthalmology Unit, Department of Surgery, College of Health Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria. E-mail:uvtoyin2@yahoo.co.uk

money, material, manpower, management and mobility (7).

The elimination of avoidable blindness requires development of human resources and infrastructure at all levels (8). The availability and distribution of human and material resources for eye-care have a direct bearing on the quality of eye-care delivery, its uptake and therefore on blindness prevention (9).

Materials for eye-care delivery were reported as inadequate and unevenly distributed in urban southwestern Nigeria in a study of 13 primary healthcare facilities and one secondary healthcare facility (8). The implementation of global or national policies of blindness prevention, primary eye-care inclusive, actually takes place at the local or district levels (9).

As a preliminary to a multi-phased regional blindness prevention programme, a situation analysis of the baseline primary healthcare system with particular reference to human and material resources available for primary eye-care delivery in a local government area in southwestern Nigeria was conducted.

SUBJECTS AND METHOD

Setting

Local Governments are responsible for coordination and delivery of primary healthcare in Nigeria. This study was conducted in Atakunmosa West Local Government Area (AWLGA) in southwestern Nigeria. It has a projected population of 126 625 from the 1991 population census (10). Osu, its headquarter town and Ifewara are the two major semi-urban towns while other constituent communities are rural, isolated and linked by untarred roads. It is a largely agrarian local government area and specialist eye-care service is available at tertiary centres in Ile-Ife, Osogbo and Ilesa averaging 30-120 km from constituent communities of AWLGA.

Study design

A cross-sectional interventional study was carried out for baseline assessment of existing public healthcare facilities delivering primary healthcare (PHC) in AWLGA so as to proffer appropriate strategies to incorporate primary eye-care (PEC) into the PHC system for blindness prevention in the local government area. It will also serve as a baseline for subsequent monitoring of the impact of interventional strategies. All public health facilities providing primary healthcare in AWLGA constituted the study population.

Data collection

Preliminary discussion with the PHC coordinator and Department of the AWLGA was conducted to obtain study permission and to attract political support for future interventional programmes. Ethical clearance was obtained from the Ethical Committee of the Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife. Data on the number and cadre of health facilities were obtained from the PHC department of the local government area. The projected populations of the health districts were obtained from the zonal office of the National Population commission in Osu. Healthcare facilities were visited and the questionnaire administered to the Head and other healthcare workers to assess their number, previous training in eye-care and pattern of eye-care services available. Materials required to deliver basic primary eye-care were inspected. For this purpose, a slight modification of the list of Khan *et al* to accommodate the non-trachoma endemic nature of AWLGA was adopted by excluding the epilation forceps (11). Simple referral forms were included to ensure ease of referral.

Data were recorded, analysed and presented as frequency tables and percentages for discussion.

RESULTS

There are eleven well defined health districts serving the corresponding eleven electoral districts of AWLGA, south western Nigeria. Figure is a map of AWLGA showing the

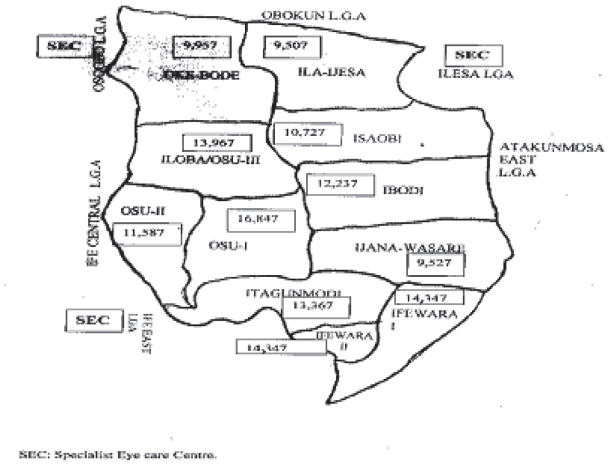

Figure: Map of Atakunmosa West Local Government Area showing the health districts projected population and location of neighbouring specialist eye-care centres.

distribution of the health districts, their projected population and surrounding cities of Ile-Ife, Ilesa and Osogbo which have specialist eye-care centres.

A total of 27 public health centres providing PHC are distributed across the wards (Table 1). These centres are administered and staffed by the local government. Two (7.4%) of these are health posts while the remaining 25 (92.6%) are primary health centres. Health posts are open from 8 am to 4 pm daily and have no facilities for admission or birth delivery, while the primary health centres are open for 24 hours daily with 4–6 beds available for admissions. Two wards (Osu 11 and Ifewara 11), in addition, have one state government administered comprehensive health centre each for secondary healthcare delivery.

Ninety-eight different cadres of healthcare workers are deployed on the field for provision of primary healthcare to the communities of AWLGA (Table 2). Forty-one (42.3%)

Table 1: Distribution and cadre of primary healthcare facilities in Atakunmosa West Local Government Area

Health district	PHF/DP ratio	HP	PHC	Total
Osu I	1:16847	–	1	1
Osu II	1:3862	–	3	3
Osu III	1:13967	–	–	–
Ibodi	1:4079	–	3	3
Ijanawasare	1:3176	–	3	3
Itagunmodi	1:6684	–	2	2
Okebode	1:1422	–	7	7
Isaobi	1:3576	1	2	3
Ilaa Ijesa	1:3169	1	2	3
Ifewara 1	1:14,347	–	1	1
Ifewara 11	1:14,347	–	1	1
Total	**1:4690**	**2**	**25**	**27**

HP = Health post; PHC = Primary healthcare; PHF/DP ratio = Primary health facility/district population ratio

Table 2: Distribution and cadre of healthcare workers in Atakunmosa West Local Government Area

Health district	location of HF	Nurse	CHO	CHEW	HA	Total
Osu I	Osu	2	2	4	2	10
Osu II	Iloba	–	–	1	2	3
	Asawo	–	–	1	2	3
	Balogun	1	–	1	1	3
Osu III	–	–	–	–	–	–
Ibodi	Ibodi	1	–	3	5	9
	Igila	–	–	1	2	3
	Iyere	–	–	2	2	4
Isaobi	Itaosan	–	–	1	2	3
	Isotun	–	–	1	2	3
	Inisan	–	–	1	1	2
Ijanawasare	Igun	–	–	2	1	3
	Ijanawasare	–	–	2	2	4
	Epe	–	–	1	1	2
Itagunmodi	Itagunmodi	2	–	1	1	4
	Araromi	–	–	1	1	2
	Iyere	–	–	2	1	3
Okebode	Abebeyun	–	–	1	1	2
	Okebode	–	–	3	–	3
	Okeoshin	–	–	2	1	3
	Kajola	1	1	–	3	5
	Araromi bode	–	–	1	1	2
	Osunjela	3	–	2	1	6
	Laalajesa	–	–	–	2	2
Ilaa Ijesa	Isolo	–	–	1	1	2
	Ilaajesa	–	–	2	1	3
	Iloya	–	–	1	1	2
Ifewara I	Ifewara	1	–	3	1	5
Ifewara II	Ogogodoja	–	–	–	1	1
Total		**11**	**3**	**41**	**42**	**9**

HF = Health facility; CHEW = Community health extension worker; Nurse = registered nurse;
CHO = Community health officer; HA = Health assistants.

are community health extension workers, 42 (43.3%) health assistants, 3 (3.1%) community officers of health and 11 (11.2%) registered nurses. None of the healthcare workers have had specific training in primary eye-care. There are 16 other health-workers in the Primary Health Care/Expanded Programme on Immunization (PHC/EPI) office at the AWLGA headquarters in Osu which include one medical doctor (the PHC coordinator/supervisor), one pharmacist, one pharmacy technician, one medical records officer, two nurses, two community health extension workers, one community health officer and eight health assistants. There is no community volunteer health or eye-care worker in this local government area.

All the 27 facilities have rooms, tables and chairs for consultation. Materials required for basic primary eye-care were lacking in most of the facilities (Table 3). Some materials required for basic primary eye-care were available for other reasons and not used for eye-care; for instance, torch during power outages, gauze and plaster for wound dressing and adhesive tapes for pasting notices on the wall. There were no available data of eye diseases seen at the centres. No staff had given a written referral to direct a patient for specialist eye-care; this was said to be done verbally. Health-workers prescribed topical antibiotics and verbally referred patient for eye-care. Medications were provided by the Local Government Area and supplied centrally from the PHC/EPI office by the pharmacist.

Table 3: Materials for basic primary eye-care and number of health facilities in which they were available

Basic equipments	Number of facilities	(%)
Torch and batteries	13	48.1
Dressing bandage (for eye pads)	18	66.7
Adhesive tape	2	7.4
Eye shield	–	–
Snellen's Chart/E chart	–	–
Hand magnifying lens	–	–
Referral forms	–	–
Basic medicines/consumables		
Topical antibiotics		
Chloramphenicol eye drops	25	92.6
Gentamycin eye drops	23	85.2
Eye ointment	–	–
Silver nitrate 1% eye drop	–	–
Vitamin A capsules	27	100
Ivermectin	27	100

DISCUSSION

The primary healthcare facilities available in health districts are maldistributed as evidenced by the high primary health facility/district population ratio especially in Osu III and Ifewara. These cities are noted to be those with the state administered comprehensive health centres for secondary healthcare delivery. The proper and ideal referral system should be from primary to secondary to tertiary healthcare system. This is disrupted if secondary healthcare delivery centre is providing primary healthcare in a place where primary health delivery system is available. This in effect will affect the data gathered for planning and monitoring of the efficiency of such systems. Moreover, the PHC health-workers are expected to be closer to the community as they also administer house-to-house EPI and thus can be very

useful in eye disease case finding. Maldistribution of PHC facilities run against the principles of PEC (11). Imbalance in distribution of healthcare facilities amongst health districts has been previously reported with geopolitical factors being implicated (8, 12). The existence and wide distribution of these centres in the rural remote isolated communities is however advantageous in reaching these usually neglected areas with PEC.

The primary healthcare workers are few, especially in centres running 24 hours coverage considering that such health-workers run shift duty. The number of staff is usually dependent on the frequency and volume of appointments by the government which have been reduced at all levels in Nigeria (13). The use of community volunteer workers may alleviate this problem. The number available however is encouraging to commence PEC as this reduces the cost of integration. The cadres of health-workers available in this local government area are sufficient to deliver primary eye-care. They are semi-skilled health workers since they already have some training and experience in health delivery. Health assistants are the least skilled and represented 43.3% of all workers; they are distributed over all the health districts. The local government finds it cheaper to fund these cadre of personnel (13). They are skilled enough to deliver basic eye-care. They should be taught with other cadres of health-workers to piggy-back eye-care into their other routine at little or no additional expense since they already have close contact with the community (11, 14–16). Persons with the most basic of education can successfully administer basic primary eye-care if trained and monitored (11). Task oriented training is required for the primary healthcare workers in this area since this is lacking amongst all cadres. Training is an indispensable tool in integration of primary eye-care into an existing primary healthcare structure (6, 11, 14–15). Basic primary eye-care involves mainly eye health promotion, treatment of simple eye diseases, identification of persons needing specialist eye-care and prompt referral for same (11). Training should be aimed at visual assessment to detect visual impairment/blindness and ocular examination with torch light to detect simple eye diseases. Training of PHC workers in recognition and referral of patients with cataract lead to an improvement in cataract surgical rate in southern China (15). Rural dwellers dislike visiting urban hospitals due to poverty, ignorance, fear and unpleasant city experience (17). A simple and easy-to-fill referral form administered by a trained PEC worker will encourage a good referral system. This will reinforce the work of the PEC and will improve the efficiency of the tertiary service provider (4) since the acceptability of PEC is closely related to appropriate care of referred cases. The good concept of PEC had remained in health ministries in many countries (11). Linkage with the tertiary eye-care-providing institution and monitoring of PEC worker can be better sustained and effective if training is conducted by a close tertiary institution staff (11, 15).

The public primary healthcare facilities in this local government area are not adequately equipped for PEC delivery. Materials required for basic PEC delivery are cheap and locally available and should be provided along with training for each health facility (14). Eye pads can be made from gauze and cotton wool. The availability of Vitamin A and ivermectin in all health facilities may be linked to regular training programme on immunization against childhood diseases like measles and onchocerciasis control programme. Central acquisition and distribution of medications is advantageous for ensuring availability of basic medications for PEC. Eye health education, awareness and case finding of needless blind in communities can be achieved during house to house immunization exercises.

Though procurement of materials and training of the primary health-workers in basic eye-care delivery is required, the PHC facilities and workers currently available in AWLGA are adequate to commence integration of PEC into the PHC system. A partnership between ophthalmologists in closely located tertiary eye centres will enhance an efficiently integrated primary eye-care delivery and thus blindness prevention programme in the region.

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