Original Research Article

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Prospects of diabetes registry and standard care at primary health facilities in Nigeria: experiential note

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ABSTRACT

Background: As part of the series to advance diabetes register, the aim of this piece of the project was to evaluate the development of a diabetes register at primary healthcare (PHC) level in Delta State Nigeria. This is with a view to determine the PHC capacity for diabetes services.

Methods: This clinical observational study was carried out in Novena University health centre in Ukwani Local Government Area and Ogume primary health centre in Ndokwa West Local Government Area, Delta State. A community-based screening was carried out in three communities of Amai, Ezionum and Ogume in July to September 2018, after which a diabetes registers were developed in Novena University health and Ogume primary health centres. Cases of probable diabetes were identified during screening and entered into the diabetes register being developed, which formed the sampled population (n=42). The data were analysed using Microsoft Excel Data Analysis ToolPak 2010.

Results: Glucometer, stethoscope and sphygmomanometer were the most available equipment at the two facilities. Medical records of patients were incomplete with 81% missing home addresses and 62% did not have phone numbers. Others records such as date of entry, height, weight and type of diabetes were not recorded. The study also showed 35% prevalence of hypertension in diabetes cases.

Conclusions: There is capacity to run diabetes screening and service clinic at the primary healthcare levels, but the limitation was incomplete patient information in the medical records. In development of a diabetes registry at the primary healthcare level, the study recommends comprehensive patients' documentation during screening and routine medical check-up.

Keywords: Blood glucose monitoring, Blood pressure check, Diabetes register, Primary healthcare, Screening

INTRODUCTION

Nigeria is the most populous country in Africa with an estimated number of 1.7 million people with DM (International Diabetes Federation, 2017). The current

pooled prevalence of DM in Nigeria is 5.8%, and in the Ndokwa local government area of Delta state, it has been observed to be 5.0%. Globally, many countries are establishing diabetes registers as a tool for management of diabetes, and development of clinician decision

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support system.³⁻⁶ However, the establishment of diabetes register in a low resource setting such as Nigeria has not gained national prominence and organizational behavioural change wheel is a probable factor. The Primary Healthcare Centre (PHC) is the first tier of the Nigeria health system closest to the people, especially rural dwellers and can be a good resource for diagnosis and management of diabetes.⁷ It is indicated that diabetes cannot be handled at the primary health care centres in Nigeria due to shortage of facilities and inadequate healthcare personnel.⁷⁻⁹ Nevertheless, there is yet to be clinical observational study regarding diabetes register or the potential to establish the registry.

Therefore, in the project of establishing diabetes register, it would be appropriate to pilot the establishment of a diabetes register at the PHC level in Delta State. The aim of the study is to evaluate the development of diabetes registers at the primary healthcare level in Delta State Nigeria. The three specific research objectives are to determine the:

- Diabetes services that are available to patients
- Level of completeness of data for the patients' follow-up
- Percentage of persons with probable diabetes mellitus and/or high blood pressure.

METHODS

Study design

The study was a clinical observational study of diabetes care that doubled as community needs assessment.

Study setting

Novena Health Centre, Amai; and Ogume community PHC both in Delta State. The study areas were Amai and Ezionum communities and Novena University health centre in Ukwani Local Government Area as well as Ogume community in Ndokwa West Local Government Area.

Selection criteria

Members of the three communities who were screened for diabetes during the community-based screening and their information entered into the developed diabetes register at Novena University health centre and Ogume primary health centre. Participants included both gender and were all adults.

Data collection

As part of the series, all data were collected based on the template diabetes register that was used to initiate development of diabetes registry in the healthcare facility. Participants were invited to the health centre. For this

report, data were collected between October 2018 and April 2019.

Statistical analysis

All cases of diabetes identified during the screening and were entered into the developed diabetes register at the two facilities formed the sampled population. The collected data was analysed using Microsoft Excel Data Analysis Tool Pak 2010.

RESULTS

Objective 1: Diabetes services that are available to patients at the health facility

Services available are in terms of equipment and tests defined by the list of clinical measure that constitute standard of care,10 which includes seven expected items (Table 1). Results show that blood glucose and blood pressure measurements were carried out but not body mass index.

Table 1: Availability and completeness of service assessment.

Test	Equipment	Completeness	
Blood pressure	Stethoscope and Sphyg' 45%		
Blood sugar level	Glucometer	95%	
Renal function	Urine strips	Variable*	
Others	Weigh scale		
	Height measure	0%	
	Measuring tape		

^{*}Albumin/creatinine ratio, but urinalysis is routinely performed.

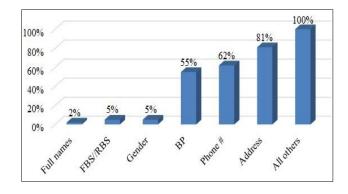


Figure 1: Frequency of missing records.

Objective 2: Level of completeness of data for the diabetes patients' follow-up

Missing data to either warrant recall of patient, or reference on next check-up were observed (Table 2). There was one case with just the first name i.e. without surname, and two cases of no blood glucose results. In this study, complete contact details was defined to include

medical record number, house address (street and/or postal) and telephone number. 81% of cases were missing home addresses, 62% of clients cannot be contacted due to lack of phone numbers (Figure 1). Eight participants

provided street or office addresses, while 29/42 gave incomplete home address and another 5/42 are not associated with any home address (Figure 2).

Table 2: Proportions of incomplete contact details associated with test results.

Contact Information on	N = 42	Incomplete			Complete	
		Home	Phone	Home and phone	Complete	
FBS//RBS	40	80%	60%	45%	5%	
Blood pressure	19	26%	53%	21%	00/	
Next-of-kin		100%			0%	

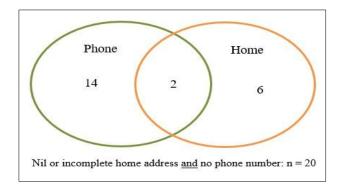


Figure 2: Vene diagram of contact address records.

Table 3: Frequency of blood glucose among abnormal pressure results (N = 19).

	N/19	SBP	DBP	DBP+SBP
Hyperglycaemia	17	3	11	11
Normoglycaemia	2	2	2	2
Total	19	5	13	13

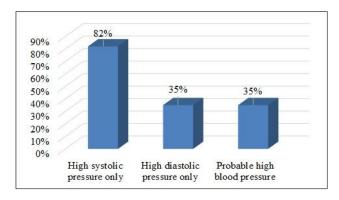


Figure 3: Percentage level of probable hyperglycaemia cum high BP.

Objective 3: Percentage of persons with probable high blood glucose and/or pressure

All participants (n=42) were invited for diabetes screening. Since blood glucose test was performed mainly

for screening purpose, probable diabetes was implied from FBS ≥110 mg/dl (6.1 mmol/l) or RBS ≥200 mg/dl (11.1 mmol/l). Probable high blood pressure was defined as any reading above both 120 mmHg systolic and 80 mmHg diastolic. Evaluation revealed that 19 cases that were high in either systolic and/or diastolic blood pressure. While 17 of the 19 were hyperglycaemic, but 3 of the 17 had normal systolic pressure; and additional eight (i.e., 3/17+8/17=11/17) showed normal diastolic pressure (Table 3). Conversely, 82% of the hyperglycaemic cases showed systolic pressure greater than 120 mmHg including 35% also showing high diastolic pressure to imply probable high blood pressure (Figure 3).

DISCUSSION

The findings of the study in terms of first objective show that blood pressure and glucose level were being assessed, which indicates capacity as well as opportunity. However, it is noteworthy from results of second objective that the completeness of data for patients' follow-up is quite low; hence indicative of limited motivation. In the context of translating knowledge attitude and practice into behavioural change wheel; these findings indicate presence of knowledge for capacity as well as opportunity for practice, attitude vis-à-vis motivation is probably what is needed to improve diabetes services at the primary healthcare facility. 11,12 The main purpose of a diabetes register is to document patients' information to facilitate recall and proper follow-up of patients. That is, enhance management of the disease to improve quality of life. 3,4,13,14 Therefore, completeness of patient information during development of the register is key in achieving the long-term goal of developing the register.

The absence of data collection to assess BMI is quite concerning, especially since PHCs are owned and operated by local governments with a focus to providing basic preventive, promotive, and acute treatment services albeit suboptimal.⁷ It is known that in the three tier system of public health in Nigeria, the quality of primary healthcare services constitute a major concern.^{7,8} This

report contributes further data with regards to diabetes care and identifies availability of service that is limited by completeness of patient's anthropometric demographic data collection i.e. as one of the areas to improve. The logistics of adoptability of most of equipment for screening chronic diseases can involve long term bureaucracy, but very rewarding. Indeed, given the existing capacity to assess blood sugar and blood pressure tests, acquiring weighing scale and creating height measuring unit on a wall is easy. Therefore, this study makes a case for inclusion of diabetes screening service in the PHCs. This will help in the development of functional diabetes register especially in rural areas that host more than 50% of the national population.

CONCLUSION

Similar to the observations at the private general practice reported as #3 in this series, it can say that most patients invited for diabetes screening do attend, but data collection which translates to services being provided are limited. This limitation is even buoyed by incompleteness of records that are considered to be significant in diabetes clinics. It draws attention to the need for staff retraining in order to harness their potentials for diabetes services.

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