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Morbidity in rural southwestern Nigeria: a one year follow up of voluntary health worker consultations in Idere, Oyo State, Nigeria

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Summary

There is paucity of information on morbidity pattern at the community level in Nigeria. Available literature shows that most are based on hospital data from which rates cannot be generated. In addition, the low access to hospitals in the country especially in rural areas, coupled with inappropriate health care seeking behaviour in the community limits the usefulness of information derived from hospital data. This study was aimed at determining disease patterns in a rural community in Nigeria using the records of voluntary health workers. We followed up a well-defined rural community for one year and collated records of active voluntary health workers (VHWs) who provide health care to these communities. Results showed that Malaria, upper respiratory tract infections (URTI), diarrhoea, measles and accidents were the most common ailments for which the community members sought health care. The annual morbidity rates were malaria 25.4%, URTI 6.0%, accidents 3.2%, and diarrhoea 2.7%. Rates generally decrease with increasing age, except for accidents, for which the rates were highest amongst school-aged children (5-14 years) and lowest amongst adults. Recommendations made include strengthening malaria control efforts, improving routine immunization coverage and providing health education regarding accident prevention.

Keywords: Morbidity, rural, voluntary health workers, Nigeria

Résumé 2382

Il y a une sous information au niveau du taux de morbidité dans les communautés nigériennes. La littérature récente montre que plusieurs sont basées sur les données de l'hôpital que le taux ne peut pas être certain. Aussi le faible taux d'accès aux hôpitaux dans ce pays spécialement au niveau rural est associé au manque de volonté de se rendre dans les centres de soins de santé limite la validité des informations dérivées des carnets. Cette étude avait pour but de déterminer la fréquence des maladies dans une communauté rurale au Nigeria utilisant les carnets des personnels de santé volontaires. Une communauté rurale a été définie et les données des personnels de santé actif et volontiers ont été enregistrées. Les résultats montraient que le paludisme, les infections respiratoires. La diarrhée, la rougeole et les accidents étaient les problèmes plus fréquents dans cette communauté. Les taux de morbidité annuel étaient 23.4%, 6.0%, 3.2%, et 2.7% pour le paludisme, infection respiratoires accidents et diarrhée respectivement. Généralement ces taux diminuaient avec l'accroissement (l'âge) avec l'exception aux accidents dont les taux étaient élevés parmi les écoliers (5-4 ans) et faibles chez les adultes. Les recommandations incluent : supporter les méthodes de contrôle de paludisme, l'amélioration des campagnes de vaccination régulière et d'apporter une éducation sanitaire pour prévenir les accidents.

Introduction

Data on morbidity and mortality patterns in Nigeria are unreliable and estimates are usually derived from hospital data and periodic national questionnaire surveys such as the National demographic and Health Surveys (NDHS) and the Multiple Indicator Cluster Surveys (MICS) [1-2]. In Nigeria, hospitals are unevenly distributed and data collection is poor and unreliable, and because of the inability to generate rates hospital-based data are of limited use. The NDHS and MICS are based on interviews on selected communities in the country but suffer setbacks of recall bias and the unwillingness of the people to discuss issues such as deaths, which is considered sensitive in the community. Mortality and morbidity have been estimated based on models [3] but their reliability and accuracy has been questioned [4-5]. In the absence of a functional vital registration system, community-based longitudinal surveys are reported to be the best alternative method for assessing morbidity and mortality in Sub-Saharan African countries such as Nigeria [6]. The use of lower cadre health workers and community members for data collection have been advocated by the World Health Organization (WHO) and has been used successfully to collect relevant and accurate data in many countries, including Nigeria [7-9]. This study was aimed at determining morbidity pattern in a rural community in southwestern Nigeria during a 12-month period.

Methodology

Study area

The study area was Idere community located in Ibarapa Central LGA of Oyo State, Nigeria. Idere community consists of Idere town and 42 farm settlements and hamlets with population ranging from 16 people to 171 in the hamlets/farm settlements and 6777 people in the main Idere town. In all, the total population of the communities was 9,740. Of these 2.3% were infants, 11 percent were preschool children, 16.4 percent were 5-14 years and 70.3 percent were adults based on a census conducted by a research team as part of another project during the period when the present study was conducted. Idere town (divided into 5 wards) and 10 of farm settlements/villages had active VHWs covering a population of 7,715 people and were included in the survey. These VHWs were all multipurpose VHWs selected by their respective communities and had been providing PHC services to their communities since 1987, with an effective revolving drug scheme. They have a VHW association, which meets fortnightly.

The people of Idere community are of Yoruba tribe and most are subsistence farmers with some engaging in petty trading. The main religions practised in the community were Islam, Christianity and the Traditional Yoruba forms of worship.

There is a six-bedded health center in Idere managed by the PHC department of the LGA. There is a Comprehensive hospital situated in Igbo-ora (which is situated about 20 kilometers from Idere Town). There are four private clinics in the LGA, all located in Igbo-ora Township. From early 2000, a Medical Officer of Health oversees the health activities of the LGA.

Method of data collection

Before the beginning of the survey, a two-day training workshop was conducted for the VHWs about record keeping and how to fill the VHW/Traditional birth attendant record of work-book developed and recommended by the Federal Ministry of Health.

The VHW/TBA record of work is a booklet with pictorial sheets. The first column consists of the various health problems as well as other activities performed by the VHW/TBA including home visits, referrals, and meetings with the village development committee (VDC). Also contained in the booklet is information about the mortality profile in the community and information about family planning and maternal health care such as antenatal care provided by the VHW/TBA, and pregnancy outcome (live birth, still birth and maternal deaths). The other columns are subdivided into 3 major groups (pre-school children, school children and adults) according to the age group of persons seen/treated and contain zeros (0's), which the VHW slashes across for each case seen, or activity performed. The PHC staff of the LGA conducted the training workshop with the investigators as facilitators.

The VHWs were supplied with the record forms, which they returned to their supervisor at the end of the month during their village development meetings, and they collect forms for the next month. The supervisor checks the forms for errors and clarity. The communities were followed up for 12 months from May 2000 to April 2001.

Ethical approval for the study was obtained from the Ethical Review Committee of the College of Medicine, University of Ibadan and the University College Hospital, Ibadan. Consent to conduct the study was sought and obtained from the LGA to conduct the study in their LGAs.

Data analysis

Data was analyzed using Microsoft Excel spreadsheet and frequencies and cause- and age-group specific morbidity rates were generated.

Limitations

This study presents data on illnesses on the VHW/TBA record forms only. Other important diseases not managed by the VHWs such as sexually transmitted diseases, Tuberculosis and non-communicable diseases were not included in this study.

Results

As shown in figure 1, the total monthly consultations by the VHWs ranged from 140 in March 2001 to 413 in July 2000. In all, they made 3112 consultations during the one-year period between May 2000 and April 2001.

The top five causes of consultation were in order of magnitude, malaria, upper respiratory tract infection, accidents, diarrhoea and measles (figure 2). Malaria was the commonest cause of consultation by the VHWs, accounting for 1962 consultations whilst there were 465 consultations for URTIs. There were 6 cases of tetanus and 29 cases of malnutrition during the study period. Five of the tetanus cases were among the under-five age group whilst one was among the age group 5-15 years. An outbreak of measles occurred in the months of May, June and July 2000, mostly among children under five years (91 cases) but also among school age children (28 cases) and adults aged 15 years and above (20 cases). The relative proportion of cases of malaria increased with age whilst the reverse is true for URTI, Diarrhoea and Measles (Table 1).

Figure 1: Total monthly consultations by VHWs in Idere Community, May 2000-April 2001

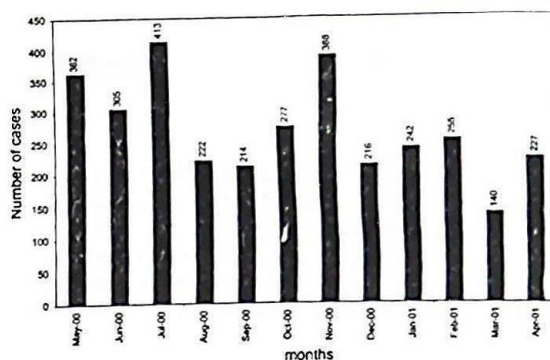


Fig. 1

Figure 2: Pattern of cases seen by VHWs in Idere community, Oyo State Nigeria (May 2000 - April 2001)

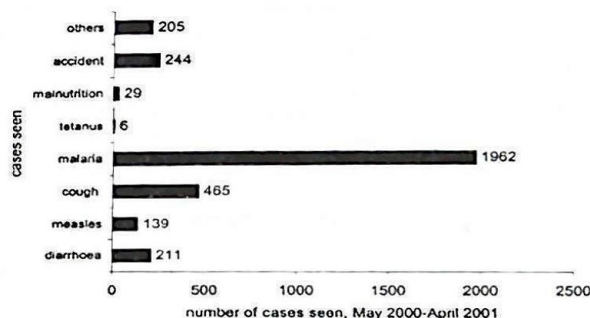


Fig. 2:

The morbidity rates per year are as shown in Table 2. For the whole community (all age groups), the conditions with the highest rates were Malaria (25.4%), URTI (6.0%). Diarrhoea (2.7%), accidents (3.2%) and Measles (1.8%). The morbidity rates generally decrease with increasing age, with children having the highest rates and adults the lowest. Thus for malaria, the incidence rate was 43.1%, 37.7% and 16.4% respectively for under-five, 5-14 year and adult age groups. Similarly for URTI, the rates were 16.5% for under fives, 11.2% for the school age children and 2.8% for those aged 15 years and above.

For the accidents cases, the school-age children had the highest and adults, the lowest rates (9.4% per year and 1.5% per year respectively).

Discussion

Globally, Malaria contributes a large proportion of morbidity and mortality [10-11]. It is responsible for over one million deaths annually in Africa and ranks among the top five causes of deaths in Nigeria in children [12-14]. This was evident in our study as Malaria had the highest morbidity rate as well as in absolute number of cases seen during the one-year study period. The NPHCDA had previously observed that the highest recorded illness seen by VHWs in Nigeria was Malaria [15]. A study that analyzed records of rural hospitals in four African countries reported that three quarters of all children's admis-

Table 1: Proportion of different health conditions presenting among the different age groups in Idere, May 2000-April 2001

Health condition	Age group			
	< 5 years Frequency (%)	5-14 years Frequency (%)	> 15 years Frequency %	All age groups Frequency %
Diarrhoea	102(11.1)	56(6.2)	53(4.1)	211(6.5)
Measles	91(9.9)	28(3.1)	20(1.6)	139(4.3)
URTI	169(18.4)	142(15.7)	154(12.0)	465(14.3)
Malaria	443(48.2)	477(52.6)	888(69.3)	1962(60.2)
Tetanus	5(0.5)	1(0.1)	0(0.0)	6(0.2)
Malnutrition	20(2.2)	8(0.9)	1(0.1)	29(0.9)
Accidents	38(4.1)	124(13.7)	82(6.4)	244(7.5)
Others	51(5.5)	71(7.8)	83(6.5)	205(6.3)
Total	919 (100)	907(100)	1281(100)	3261(100)

Table 2: Morbidity rates (% per year) in Idere, May 2000 - April 2001

Diseases/health condition	under 5 years (n = 1026)		5-14 years (n = 1265)		Adults ≥ 15 years (n = 5424)		All ages (n = 7715)	
	Number	Rate %	Number	Rate %	Number	Rate %	Number	Rate %
Diarrhoea	102	9.9	56	4.4	53	0.1	211	2.7
Measles	91	8.9	28	2.2	20	0.4	139	1.8
URTI	169	16.5	142	11.2	154	2.8	465	6.0
Malaria	443	43.1	477	37.7	888	16.4	1962	25.4
Tetanus	5	0.5	1	0.1	0	0	6	0.1
Malnutrition	20	1.9	8	0.6	1	0.02	29	0.4
Accidents	38	3.9	124	0.8	82	1.5	244	3.2

sions were due to infections and infection related illnesses with Malaria being the most important infection, both in terms of admissions and as a cause of death [16]. Similar findings were reported by a 2-year follow up cohort study 3, 274 live-born singleton infants in rural Malawi, which observed that over three quarters of deaths in infants were due to gastroenteritis, fever and acute respiratory tract infections [17]. The NDHS and MICS surveys conducted in 1999 observed that malaria, diarrhoea and acute respiratory infections (ARI) together were responsible for eighty percent of morbidity among infants and children less than five years and for over two thirds of mortality in these age groups [1-2]. Clearly, there is a need to strengthen efforts to control these illnesses in the country. Such efforts should be holistic and adequately integrated into Primary Health Care.

The occurrence of Tetanus and Measles, two childhood killer diseases which were targeted by the Nigerian National Programme for Immunization (NPI) was not surprising as routine immunization coverage for both children and pregnant women has been reported to be very low since the mid-90s' [18]. In 1999 according to NDHS, Neonatal tetanus alone was responsible for eleven and measles, three percent of all infant deaths [1-2, 18]. A study of the risk factors for neonatal deaths in Lagun, a rural settlement near our study area observed that tetanus and measles were responsible for almost one tenth of neonatal and post-neonatal deaths respectively in the community [9]. Our study area was made up of many small settlements with little communication with other communities, hence it was not surprising that some of the older children and adults were hitherto not immune and became infected during the measles epidemic. Clearly, as long as routine immunization

coverage remains low, neo-natal tetanus cases and measles epidemics will continue to occur with devastating impact on child survival in the country.

In this study, malnutrition was observed to be low in Idere community compared with figures reported in national surveys [1-2, 18]. This may be due to better infant and child feeding practices in the community. In most of Nigeria, breastfeeding is the norm, especially in the rural areas and probably contributed to the low malnutrition levels in this community. It is also possible however, that the care-seeking behavior regarding malnutrition in the community is such that they do not present to the VHWs. There is a need for studies on nutritional status, childhood feeding practices and health care seeking behaviour regarding malnutrition in Idere community.

Accidents were common in children aged five to fourteen years, accounting for the highest rates. There is a need to incorporate and emphasize accident prevention in health education messages to the communities as well as in schools.

In conclusion, we have followed up the reports of VHW activities for one year and studied the pattern of illnesses seen by the VHWs in Idere community and determined the morbidity rates for the community. This study is limited only to the illnesses seen by the VHWs, which does not include infections such as sexually transmitted infections and the chronic non-infectious diseases. In addition, self-medication and the existence of other forms of health providers in the communities mean that the rates generated in this study, even though high, may actually be underestimated. However, the results are still useful as they give an indication of the burden of disease at the peripheral level in a rural Nigerian community.

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