

MALARIA MORBIDITY AMONGST HOSPITAL WORKERS IN ILORIN

ADEMOLA O. AWOYEMI

Department of Epidemiology and Community Health
University of Ilorin, Ilorin Nigeria.

A study of malaria as a cause of morbidity among the staff of the University of Ilorin Teaching Hospital, Ilorin, Nigeria was carried out from August to October 2001. Patients attending a community based Health Centre was used as control. Malaria accounted for 43.0% of illnesses among the workers and 36.7% in the general public. Malaria was responsible for nearly two-thirds of sickness absence and for 48.6% of days lost due to illnesses. Also the disease was responsible for 50 percent or more of sickness absence among all categories of workers when analyzed by occupations. These findings show that malaria could disrupt the health care delivery of a country since it could affect even health workers. By extension too, it could result in the disruption of the economic activities of the country and result in low productivity if not effectively controlled. It therefore recommended that all efforts at effective controlling malaria should be put in place in Nigeria.

INTRODUCTION

Three to five hundred million cases of malaria occur annually in the world causing over one to two million deaths especially among children (1). The disease typically presents with fever and diagnosis is based on microscopic demonstration of malaria parasites in the blood of victims (1,2). While malaria is known to be endemic in the tropics and sub-tropics, its impact on the working class has only been scantily documented in the literature (3).

The hospital workers especially are expected to know about preventive measures against malaria – hence on this assumption are less likely to contract the disease compared with the general public. In addition, not much information is available in the literature about morbidity pattern among hospital workers (4,5).

It is in the light of this dearth of information that this study was undertaken in order to determine the extent of morbidity from malaria among workers of the University of Ilorin Teaching Hospital, Ilorin, Nigeria attending the Staff Clinic of the Hospital over a period of three months.

MATERIALS AND METHOD

The study was undertaken from 1st August to 31st of October, 2001 in Ilorin metropolis. It involved a study group, the staff of the University of Ilorin Teaching Hospital, Ilorin, Nigeria attending the Staff Clinic of the Hospital within the period. The control group was made up of patients attending the Okelele Health Centre from Okelele community of Ilorin.

The year 2000 mid-year working population of the Teaching Hospital was 2,058 according to the Hospital Annual Report (12). In the same year the bed complement was 486. The staff clinic was run by 5 Consultants, 6 Resident doctors, 6 Community Health Nursing Officers and 9 Community Extension Workers during the period of study.

The Okelele Community Health Clinic which serves the Gambari ward community of Ilorin is run by doctors and nurses from the same Department of Epidemiology and Community Health which also supervises the Staff Clinic of the Teaching Hospital. Patients are seen here and treated by doctors and other health workers while difficult cases are referred to the Teaching Hospital.

The study was carried out concurrently in the two identified populations. In the study group, patients who reported at the Staff Clinic with fever and symptoms suspected to

be due to malaria were sent to the Haematology Laboratory for confirmatory evidence of malaria parasites. Only those so confirmed were included in the study.

Among the control group, blood samples were also obtained at the Okelele Health Clinic in patients who reported with fever. The samples were also sent to the Haematology Laboratory of the Teaching Hospital for confirmation of diagnosis in order to standardize procedures. Other diseases diagnosed and treated at the two clinics during the period were also recorded.

RESULTS

During the study period—August to October, 2001, a total of 1963 medical conditions were treated in the Staff Clinic of the University of Ilorin Teaching Hospital, Ilorin while 1397 medical conditions were seen at the Okelele Health Centre during the same period. There was no case of death reported among the staff seen in either of the clinics during the period.

Table 1 shows the frequency distribution of all cases seen at the Staff clinic of the Teaching Hospital during the period. 844 of the cases were diagnosed as malaria giving a prevalence rate of 43% of all cases seen.

Table 2 shows the distribution of diseases seen at the Okelele health centre. 513 cases were due to malaria accounting for a prevalence rate of 36.7%. In both populations, the ratio of male to female was approximately 1:2.

During the period of study, a total of 51 Sick Leave Certificates were issued in the Staff Clinic for all cases, out of which 31 (60.8%) were due to malaria (Table 3). Table 4 shows the sickness absence (Sick Leave Certificates) due to malaria among the workers according to their occupations.

Table 1: Distribution of Diseases seen at the Staff Clinic of the University of Ilorin Teaching Hospital between August and October, 2001

Type of Diseases	August Frequency	September Frequency	October Frequency	Total	Percentage
Malaria	243	312	289	844	43.0
URTI	62	87	108	257	13.1
Gastroenteritis	6	20	21	47	2.4
Skin diseases	8	17	16	41	2.1
Eye/ENT diseases	10	6	25	41	2.1
UTI	3	2	3	8	0.4
Others	277	233	167	677	34.5
Referred cases	21	10	17	48	2.4
Total	630	687	646	1963	100

- URTI - Upper respiratory tract infection
 ENT - Ear, Nose and Throat
 UTI - Urinary tract infection.

Table 2: Distribution of Diseases seen at Okelele Health Clinic, Ilorin between August and October, 2001.

Diseases	August Frequency	September Frequency	October Frequency	Total	Percentage
Malaria	108	164	241	513	36.7
URTI	4	69	62	135	9.7
Gastroenteritis	0	11	6	17	1.2
Skin diseases	2	2	8	12	0.9
Eye Diseases	8	7	0	15	1.1
UTI	1	2	3	6	0.4
Others	116	245	289	650	46.5
Referred	9	19	21	49	3.5
Total	248	519	630	1397	100

URTI - Upper respiratory tract infection
 UTI - Urinary tract infection.

Table 3: Sick Leave Certificates issued at the Staff Clinic of the University of Ilorin Teaching Hospital during period of study.

Type of illnesses	Number of Sick Leave Certificates Issued				
	August	September	October	Total	Percentage
Malaria	8	10	13	31	60.8
URTI	3	3	4	10	19.7
Gastroenteritis	1	1	2	4	7.8
Eye/ENT					
Conditions	0	0	2	2	3.9
Others	1	1	2	4	7.8
Total	13	15	23	51	100

Table 4: Absenteeism rates among employees seen at the Staff Clinic of Ilorin teaching Hospital, Ilorin due to Malaria according to Occupational groups from August to October, 2001.

Occupational groups	Number of workers	Absence due to Malaria	Percentage due to Malaria
Doctors	8	4	50.0
Nurses	16	10	62.5
Pharmacists	6	3	50.0
Administrative staff	9	5	55.5
Skilled workers	4	3	75.0
Unskilled workers	8	6	75.0
Total	51	31	60.8

DISCUSSION

Malaria is endemic in Nigeria as in other tropical countries. Hence it would be expected that every individual in the country including workers should be at risk of contracting the disease at any time (6). However, the impact of malaria on productivity in Nigeria is yet to be determined independently. This study has shown that malaria takes almost the same morbidity rate among the workers studied (43%) compared with the control population (36.7%) hence is not, strictly speaking, an Occupational disease among this group of workers. However, it goes to show that the attending health workers in any Occupational Health Service should also be familiar with prevailing endemic diseases among workers they see.

It is however, on the other hand, clear from the study that Malaria is of Occupational health importance not only because it accounted for the highest disease prevalence but also because it was the commonest cause of sickness absence among the workers (60.8%). This is a significant finding because it means that Malaria could therefore be the greatest factor accounting for loss in working time in Nigeria. This same observation has been documented in a similar study in 1987 (3).

Hence if Malaria is not controlled adequately in Nigeria, productivity at work will continue to be low. This is also true of other West African countries (7).

The total number of days of absence from work for the 51 Sick Leave Certificates issued were calculated to be 179 days. Out of these, Malaria alone accounted for 87 days or 48.6% of days lost. This is an average of 2.8 days per spell of Malaria. Other diseases accounted for varying number of days. For example,

there was one case of Sickle Cell disease crisis, which accounted for 13 working days. While this might be considered a considerable length of time, it should be noted that this was just one case of that disease whereas Malaria cases were 31 in all. When this situation is looked into critically, therefore the contribution of Malaria, as a cause of morbidity among the health workers becomes very significant.

Furthermore, Malaria also accounted for 50 percent or more of sickness absence among each category of workers. Hence, 50 percent of the Doctors issued Sick Leave Certificates were ill due to malaria while it accounted for 62.5% among the Nurses. This finding is very noteworthy showing again that Malaria could also affect productivity at the highest level of health care delivery in the developing countries. By extension, it is also an indication that the disease could sap the highest level of manpower of tropical countries thereby responsible for low economic development.

Also in the study, it was found that the ratio of male to female studied in both populations was approximately 1:2. This observation means that more female workers make use of the Staff Clinic and also are responsible for more sickness absence for all diseases including Malaria than the male workers. This finding is similar to that of previous studies on sickness absence (3,8,9).

Among the workers issued Sick Leave Certificates, Nurses accounted for the highest number. Indeed, Nurses accounted for 10 out of the 31 cases of patients issued Sick Leave for malaria, that is about one-third of the patients. This finding supports a previous study by Pines et al., (8) in which Nurses recorded a similar high level of sickness absence.

Doctors and Nurses are very important in health care delivery and if they fall ill, the whole of the health system would be affected. Hence the

significance of the findings of this study and in particular the importance of Malaria as a cause of morbidity among these cadres of workers. The Government therefore needs to structure its malaria control programme to include especially the health workers. The need for an occupational health service for health workers has previously been emphasized (10).

Other diseases, which accounted for the remaining 57% of cases among the study group and 63.3% among the control group, included Upper Respiratory Tract Infections, Gastroenteritis, Skin diseases, Eye/ENT diseases, Urinary Tract infections. Among those cases listed as others in Table 1 were chronic diseases including Sickle Cell diseases, Systemic hypertension, Lumbago and peptic ulcers. Most of the cases seen were treated by the Doctors at the Staff Clinic while a few especially the chronic conditions (i.e. about 3.3% in August, 1.5% in September and 2.6% in October) were referred for specialized management.

However, all the cases of Malaria were treated at the Staff Clinic. This no doubt emphasizes the fact that Malaria, although a major cause of morbidity among the working class, is not normally a cause of significant mortality among them because being adults they have developed high levels of immunity against the disease (11).

CONCLUSION

Malaria, an endemic disease in Nigeria was the commonest cause of morbidity among health workers attending the Staff Clinic of the University of Ilorin Teaching Hospital. It was responsible for nearly two-thirds of sickness absence among the workers including Doctors and Nurses. The implication of this is that health personnel being absent from

work due to malaria could affect the health system of the country hence the health of the general public due to poor health care delivery. This could result in low productivity with resultant effect on the economic development of the country.

RECOMMENDATION

In view of the high prevalence of Malaria in Nigeria and its resultant deleterious effects on the working population and hence on the Economic activities of Nigeria, there is an urgent need to control Malaria in general. The following recommendation should assist to achieve this objective:

1. Clear-cut case definition for Malaria should be made available for health workers. This is to enable them to take care of themselves and also to cater for the general population.
2. The current WHO Malaria control programme tagged "Roll-back Malaria programme" should be incorporated into the Curricula of various schools including Primary, Secondary levels and those of Institutions such as Medical Schools and Schools of Nursing and other similar health Institutions.
3. Governments in the developing countries need to subsidize the cost of Insecticide Treated Bed nets (ITNS) to enable more people afford them.
4. There should be closer supervision of reporting of occurrence of Endemic Diseases in the country by the respective health authorities using standard forms (-DSN-Disease Surveillance and Notification forms) and sending them to the appropriate officers.
5. Education of the public including workers needs to be embarked upon on a continuous basis through Seminars and

Workshops in order for them to adopt preventive and health promotion strategies aimed at reducing the incidence of Malaria.

REFERENCES

1. Ezedinachi, E.N.U., Ejezie, G.C. – Current concepts on the prevention and treatment of malaria in West Africa. *Postgraduate Doctor (Africa)* 1990; 12(2); 26-32.
2. Marsh Kevin, Foster Dayo; Waruiru Catherine et al. – Indicators of life threatening malaria in Africa children. *The New England Journal of Medicine* 1995, 332(21): 1399-1404.
3. Awoyemi, O. Ademola – Sickness Absenteeism Among Employees In A Hospital Setting – *Nigerian Journal of Community Medicine and Primary Health Care*, 1991, 4; 35-42.
4. Stephens, T.A; Burroughs, W.A – An application of operant conditioning to absenteeism in hospital setting – *J. Apl Psycho.* 1978; 63; 518-521.
5. Editorial – Sickness absence in hospital staff – *Lancet* 1979; ii 1278-1279.
6. Malaria: Tropical Disease Research Progress 1995-96. 13th Programme Report UNDP/World Bank/WHO Special Programme for Research and Training in tropical Diseases; 1997; 40-61.
7. Lindsay, S.W.; Alonso, P.L.; Armstrong-Scheltenbery, J.R. – A malaria control trial using insecticide – treated bed nets and targeted chemoprophylaxis in a rural area of the Gambia, West Africa – The impact of permethrin – impregnated bed nets on malaria vectors. – *Journal of Royal Society of Tropical Medicine and Hygiene* 1993, 87(suppl.2); 45 –51.
8. Pines, A.; Skulko, K.; Pollak, E.; Peritz, E. and Steif, J. – Rates of sickness absenteeism among employees of a modern hospital: the role of demographic and occupational factors – *British Journal of Industrial Medicine*, 1985, 42: 326 – 335.
9. Clarke, S.; Hussey, D.G. – Sickness absence amongst nursing staff of two hospitals. *J. Soc. Occup. Med* 1979;29: 126-130.
10. Awoyemi, A.O. –The need for Occupational Health Services for Health Workers – Letter to the Editor, *Niger. Med. J.* 2000; 38(1):30.
11. WHO Bulletin – 1984: 82 Suppl., 41 –48.
12. ANNUAL REPORT of the University of Ilorin Teaching Hospital, Ilorin, Nigeria 2000. Published by the Public Relations Unit.